Just Released New Books
November 2010
English Titles

Sorted by author and title within the main subject
Arts

M. Woodward, Arizona State University, Tempe, AZ, USA

Java, Indonesia and Islam

Mark R. Woodward’s Islam in Java: Normative Piety and Mysticism in the Sultanate of Yogyakarta (1989) was one of the most important works on Indonesian Islam of the era. This new volume, Java, Indonesia, and Islam, builds on the earlier study, but also goes beyond it in important ways. Written on the basis of Woodward’s thirty years of research on Javanese Islam in a Yogyakarta (south-central Java) setting, the book presents a much-needed collection of essays concerning Javanese Islamic texts, ritual, sacred space, situated in Javanese and Indonesian political contexts. With a number of entirely new essays as well as significantly revised versions of essays this book is a valuable contribution to the academic community by an eminent anthropologist and key authority on Islamic religion and culture in Java.

Features

Mark R. Woodward’s Islam in Java: Normative Piety and Mysticism in the Sultanate of Yogyakarta (1989) was one of the most important works on Indonesian Islam of the era. This new volume builds on the earlier study, but also goes beyond it in important ways. Written on the basis of Woodward’s thirty years of research on Javanese Islam in a Yogyakarta (south-central Java) setting, the book presents [...] Contents


Fields of interest

Religious Studies; Anthropology

Type of publication

Monograph

Available


99,95 €
ISBN 978-94-007-0055-0

Biomedicine

G.D. Hammer, University of Michigan, Ann Arbor, MI, USA; T. Else (Eds.)

Adrenocortical Carcinoma

Basic Science and Clinical Concepts

We anticipate the book to be a definitive text on the subject that explores all aspects of the study of adrenal cancer and the treatment of patients with the disease. Chapters will cover epidemiology, pathogenesis, genetics, cancer stem cells, historic and emerging therapies, mouse models of adrenal cancer, new developments in tumor profiling, worldwide collaborative groups and tumor registries together with resources for the practitioner and community of adrenal cancer scientists. We do not wish this book to compete with the other larger books in the Endocrine and Endocrine Surgery literature. In addition, it is not expected to cover benign adrenal diseases that have been covered in detail in other venues. We envision this book to be a very specialized and exhaustive text on basic, translational and clinical aspects of adrenal cancer.

Features

This first edition of the textbook, "Adrenocortical Carcinoma: Basic Sciences and Clinical Concepts" provides a concise compilation of relevant data advancing our current understanding of this rare cancer. Chapters are dedicated to various aspects of both the basic biology and the clinical science relating to adrenocortical carcinoma (ACC). Expert clinicians introduce the reader to current state-of-the-art [...]

Fields of interest

Cancer Research; Pharmacology / Toxicology

Target groups

Research

Type of publication

Contributed volume

Available

2011. XV, 546 p. 116 illus., 60 in color. Hardcover

149,95 €

Animal Models of Dementia

With an ever-increasing elderly population and the resultant rising levels of dementia-related disorders, preclinical research based on animal models is pivotal to our knowledge of underlying molecular mechanisms and drug discovery aiming at the development of therapeutic strategies alleviating or preventing the neurological devastation. In Animal Models of Dementia, expert researchers provide contributions that stress the importance of extensively validated animal models in drug discovery and development in order to predict clinical activity. Beginning with general aspects of animal modeling, related ethical issues, and essential methodological considerations, the highly detailed volume then continues with various levels of model validation, including pathological, behavioral, neurochemical, pharmacological, and imaging aspects, followed by sections focused on specific disorders, such as Alzheimer’s disease, Parkinson’s disease, metachromatic leukodystrophy and adrenoleukodystrophy, amyotrophic [...] Features

With an ever-increasing elderly population and the resultant rising levels of dementia-related disorders, preclinical research based on animal models is pivotal to our knowledge of underlying molecular mechanisms and drug discovery aiming at the development of therapeutic strategies alleviating or preventing the neurological devastation. In Animal Models of Dementia, expert researchers provide contributions [...] Contents


Fields of interest

Neurosciences; Neurology; Animal Models

Target groups

Research

Type of publication

Contributed volume

Available

2011. 710 p. 72 illus. (Neuromethods, Vol. 48) Hardcover

139,95 €
ISBN 978-1-60761-897-3
Behavioral Neurobiology of Bipolar Disorder and its Treatment

This book offers the most up-to-date information about research surrounding the neurobiology of bipolar disorder as well as currently available and novel therapeutic options. The volume has assembled a widely respected group of preclinical and clinical researchers who bring their expertise to bear upon this illness by reviewing cutting-edge research and clinical evidence regarding the pathophysiology and treatment of bipolar disorder. Early chapters review the course and outcome and genetics of this highly heritable condition, including chapters on epigenetics and clinical endophenotypes. Several chapters offer a remarkably thorough and unique overview of the neurobiology of the disorder, including what is known from neuromaging work and the development of animal models. Finally, the book covers treatment strategies for bipolar disorder, including both traditional and novel therapeutic approaches, as well as non-pharmacological treatments. It offers both researchers and clinicians key insights into this.[…]

Features
Despite the devastating impact of bipolar disorder on the lives of millions worldwide, many aspects of its underlying etiology and pathophysiology remain unknown. This book, which has assembled a widely respected group of preclinical and clinical researchers, acts as a valuable and timely resource for both researchers and clinicians. This volume reviews the very latest biological, psychopharmacological, and […]

Contents

Fields of interest
Neurosciences; Psychiatry; Psychopharmacology; Human Genetics; Imaging / Radiology

Target groups
Research

Type of publication
Contributed volume

Available
2011: XII, 347 p. (Current Topics in Behavioral Neurosciences, Vol. 5) Hardcover

149,95 €
ISBN 978-3-642-15756-1

Cell Fusions

Cell fusions are important to fertilization, placentation, development of skeletal muscle and bone, calcium homeostasis and the immune defence system. Additionally, cell fusions participate in tissue repair and may be important to cancer development, progression and therapy. A large number of factors regulate cell fusions, including receptors and ligands, membrane domain organizing proteins, proteases, signaling molecules and fusogenic proteins that bring membranes close together. In the present volume, we interrogate what mechanisms that may be important to cell fusions in mammals and what mechanisms that may be shared with lower organisms and viruses. Additionally, the importance of cell fusions to the pathogenesis as well as treatment of diseases is addressed.

Features
Cell fusions are important to fertilization, placentation, development of skeletal muscle and bone, calcium homeostasis and the immune defence system. Additionally, cell fusions participate in tissue repair and may be important to cancer development, progression and therapy. A large number of factors regulate cell fusions, including receptors and ligands, membrane domain organizing proteins, proteases, signaling molecules and fusogenic proteins that bring membranes close together. In the present volume, we interrogate what mechanisms that may be important to cell fusions in mammals and what mechanisms that may be shared with lower organisms and viruses. Additionally, the importance of cell fusions to the pathogenesis as well as treatment of diseases is addressed.
**Cell Signaling Reactions**

*Single-Molecular Kinetic Analysis*

This book encompasses the exciting developments and challenges in the fast-moving and rapidly expanding research field of single-molecule kinetic analysis of cell signaling that promises to be one of the most significant and exciting areas of biological research for the foreseeable future. Cell signaling is carried out by complicated reaction networks of macromolecules, and single-molecule analyses have already demonstrated its power to unravel complex reaction dynamics in purified systems. To date, most of the published research in the field of single-molecule processes in cells, focus on the dynamic properties (translational movements of the centre of mass) of biological molecules. However, we hope that this book presents as many kinetic analyses of cell signaling as possible. Although single-molecule kinetic analysis of cellular systems is a relatively young field when compared with the analysis of single-molecule movements in cells, this type of analysis is highly important because it directly […]

**Contents**

Preface, Yasushi Sako and Masahiro Ueda; List of contributors; 1 Single-molecule kinetic analysis of receptor protein tyrosine kinases, Ichio Hiroshima and Yasushi Sako; 2 Single-molecule kinetic analysis of stochastic signal transduction mediated by G-protein coupled chemoattractant receptor, Yukishiro Miyangya and Masahiro Ueda; 3 Single-molecule analysis of molecular recognition between signaling proteins RAS and RAF, Kayo Hibino and Yasushi Sako; 4 Single-channel structure-function dynamics: The gating of potassium channels, Shigetoshi Oiki; 5 Immobilizing channel molecules in […]

**Fields of interest**

Biomedicine (general); Cell Biology; Biochemistry

**Target groups**

Research

**Type of publication**

Contributed volume

**Available**


**149,95 €**


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**DNA Damage Detection In Situ, Ex Vivo, and In Vivo**

*Methods and Protocols*

Recent advances in organic chemistry, fluorescent microscopy, and materials science have created an entirely new range of techniques and probes for imaging DNA damage in molecular and cellular biology. In DNA Damage Detection In Situ, Ex Vivo, and In Vivo: Methods and Protocols, expert researchers explore the latest advances in the area, covering both recent and established techniques to detect and quantify DNA damage at scales ranging from subcellular to the level of a whole live organism. Chapters present all major assays used in molecular and cellular biology for the labeling of DNA damage in situ, ex vivo, and in vivo. Composed in the highly successful Methods in Molecular Biology® series format, each chapter contains a brief introduction, step-by-step methods, a list of necessary materials, and a Notes section which shares tips on troubleshooting and avoiding known pitfalls. Comprehensive and current, DNA Damage Detection In Situ, Ex Vivo, and In Vivo: Methods and Protocols is an essential […]

**Contents**

In Situ Detection of Apoptosis by the TUNEL Assay: An Overview of Techniques.-Combination of TUNEL Assay with Immunohistochemistry for Simultaneous Detection of DNA Fragmentation and Oxidative Cell Damage.- EM-ISEL: A Useful Tool to Visualize DNA Damage at the Ultrastructural Level.- In Situ Labeling of DNA Breaks and Apoptosis by T7 DNA Polymerase.- In Situ Ligation Simplified: Using PCR Fragments for Detection of Double-Strand DNA Breaks in Tissue Sections.- 5'OH DNA Breaks in Apoptosis and their Labeling by Topoisomerase-Based […]

**Features**

Recent advances in organic chemistry, fluorescent microscopy, and materials science have created an entirely new range of techniques and probes for imaging DNA damage in molecular and cellular biology. In DNA Damage Detection In Situ, Ex Vivo, and In Vivo: Methods and Protocols, expert researchers explore the latest advances in the area, covering both recent and established techniques to detect and quantify DNA damage at scales ranging from subcellular to the level of a whole live organism. Chapters present all major assays used in molecular and cellular biology for the labeling of DNA damage in situ, ex vivo, and in vivo. Composed in the highly successful Methods in Molecular Biology® series format, each chapter contains a brief introduction, step-by-step methods, a list of necessary materials, and a Notes section which shares tips on troubleshooting and avoiding known pitfalls. Comprehensive and current, DNA Damage Detection In Situ, Ex Vivo, and In Vivo: Methods and Protocols is an essential […]

**Fields of interest**

Human Genetics; Gene Function

**Target groups**

Professional/practitioner

**Type of publication**

Contributed volume

**Available**


**139,95 €**

ISBN 978-3-642-14428-8

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**Developmental Biology of Peripheral Lymphoid Organs**

The human immune system is a complex network of tissues and organs dispersed throughout the body. Immunology, as one of the most rapidly evolving fields in biomedical research, has to date covered the essential cellular and molecular events necessary for immune responses to occur. However, it has paid relatively little attention to important developmental processes underlying the formation of the tissues themselves that carry out immune responses in humans and other mammals. In contrast to the thymus and bone marrow that are the sole tissues for generating mature leukocytes for antigen recognition and haemating in humans and most mammalian species, the peripheral lymphoid tissues where adaptive immune responses are focused display broad tissue distribution and possess diverse architectural characteristics. These organs develop prior to the individual’s exposure to external antigens, and despite their similar functions, their varied appearances indicate a substantial complexity of tissue […]

**Contents**


**Fields of interest**

Immunology; Developmental Biology; Human Physiology

**Target groups**

Research

**Type of publication**

Contributed volume

**Available**


**139,95 €**

ISBN 978-3-642-14428-8
**Electrophysiological Recording Techniques**

Applying neurophysiological methods to the study of brain-behavior relationships proved to be a major advance in the early days of neuroscience research. Considerable technological progress has been made very recently, and the impact on modern neuroscience will be invaluable. In Electrophysiological Recording Techniques, experts in the field present a current view of the widespread application of electrophysiological methods to the study of the brain and to the problem of brain-behavior relationships. The book has been organized to display the range of modern neurophysiological methods ranging from the recordings of single neurons and neuronal ensembles to recordings of field potentials within discrete brain regions and across multiple brain areas. Many of the chapters also address the major challenge of applying the appropriate methods to analyze and interpret neurophysiological recording data. As a volume in the popular Neuromethods series, the chapters provide authoritative reviews of many [...] 

**Features**
Applying neurophysiological methods to the study of brain-behavior relationships proved to be a major advance in the early days of neuroscience research. Considerable technological progress has been made very recently, and the impact on modern neuroscience will be invaluable. In Electrophysiological Recording Techniques, experts in the field present a current view of the widespread application of [...] 

**Contents**

**Fields of interest**
Neurosciences; Human Physiology

**Target groups**
Professional/practitioner

**Type of publication**
Contributed volume

**Available**
2011. XIV, 294 p. 26 illus., 20 in color. Hardcover

**Emerging Therapeutic Targets in Ovarian Cancer**

**Features**
Despite rapid advances in understanding the biology of ovarian cancer, progress in treatment has been slow. But the prospects for improvement have never been better. A wide range of novel therapeutic targets is present for clinical evaluation and initial results are certainly encouraging. In this text, all these areas are covered by experts in the field. Each chapter provides up-to-date coverage [...] 

**Fields of interest**
Cancer Research; Pharmacology / Toxicology

**Target groups**
Research

**Type of publication**
Monograph

**Available**
2011. XV, 294 p. 26 illus., 20 in color. Hardcover

139,95 €

**Epigenetics and Human Reproduction**

Epigenetics is a rapidly expanding field in medical and biological research which concerns heritable traits that are not attributable to changes in the DNA sequence. Epigenetic mechanisms play key roles in many biological processes, and it has become clear that their disruption can give rise to diverse pathologies in humans. Edited by preeminent experts, Sophie Rousseaux and Saadi Khochbin, this volume in the ‘Epigenetics and Human Health’ series discusses the role of epigenetics in human reproduction.

**Features**
Epigenetics is a rapidly expanding field in medical and biological research which concerns heritable traits that are not attributable to changes in the DNA sequence. Epigenetic mechanisms play key roles in many biological processes, and it has become clear that their disruption can give rise to diverse pathologies in humans. Edited by preeminent experts, Sophie Rousseaux and Saadi Khochbin, this volume [...]

**Contents**

**Fields of interest**
Human Genetics; Reproductive Medicine

**Target groups**
Research

**Type of publication**
Monograph

**Available**
2011. XVI, 372 p. 64 illus., 53 in color. (Epigenetics and Human Health, 0) Hardcover

149,95 €
ISBN 978-3-642-14772-2
**Functional Anatomy of the Sleep-Wakefulness Cycle: Wakefulness**

Sleep is a necessary, active, diverse and periodic condition, homeostatically regulated and precisely meshed with waking time into the sleep-wakefulness cycle. The authors present a detailed and updated review of the structures involved in the phase of wakefulness, including their morphological, functional and chemical characteristics, as well as their anatomical connections.

**Features**

Wakefulness is a necessary, active and periodic brain state, with a circadian and homeostatic regulation and precisely meshed with other states into the sleep-wakefulness cycle. This monograph first overviews the historical background and current understanding of the neuronal systems generating and/or maintaining the various phases of the sleep-wakefulness cycle. A key cellular correlate of wakefulness is a [..]

**Contents**

The sleep-wakefulness cycle.- Revision of the publications describing the anatomical connections and effects of lesions and electrical stimulation of brain structures on the sleep-wakefulness cycle.- The peripheral nerves and spinal cord.- Medullary and caudal pontine tegmentum.- Oral pontine tegmentum and superior cerebellar peduncle.- Midbrain tegmentum, hypothalamus and basal forebrain.- Thalamus.- Cerebral cortex.- Final commentary.- Functional anatomy of wakefulness.- The brain-stem-hypothalamic wakefulness structures and their neurotransmitters.- Other brain structures with their[..]

**Fields of interest**

Neurosciences

**Target groups**

Research

**Type of publication**

Monograph

**Available**


99,95 € ISBN 978-3-642-14625-1

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**Immunologic Signatures of Rejection**

This book discusses the mechanisms leading to immune-mediated tissue rejection following the hypothesis that independent of the disease process the final effector mechanism is shared by most (but not all) pathologies and it is relatively simple. The book covers evidence gathered to support the thesis by studies performed in humans during rejection or in experimental models and will focus particularly (but not exclusively) on the analysis of the rejected tissue rather than the systemic circulation. Several disease processes are discussed including example of chronic inflammatory process without resolution of the pathologic process and acute one with resolution of the pathologic process (clearance of pathogen, rejection of tumor) or unwanted tissue destruction (allograft rejection, autoimmunity).

**Features**

This book collects salient observational data, derived predominantly from human studies, regarding the mechanism(s) of rejection in various pathologic conditions; the premise is that immune rejection, better defined as "immune-mediated, tissue-specific destruction" (TSD), comprises a broad range of phenomena ranging from tumor regression, to clearance of pathogen through destruction of infected cells, [..]

**Fields of interest**

Cancer Research

**Target groups**

Research

**Type of publication**

Contributed volume

**Available**

2011. VIII, 300 p. 21 illus., 19 in color. Hardcover

139,95 € ISBN 978-1-4419-7218-7

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**Inhibitory Synaptic Plasticity**

This volume will explore the most recent findings on cellular mechanisms of inhibitory plasticity and its functional role in shaping neuronal circuits, their rewiring in response to experience, drug addiction and in neuropathology. Inhibitory Synaptic Plasticity will be of particular interest to neuroscientists and neurophysiologists.

**Features**

Since its discovery and first publication in 1973, synaptic plasticity in its most popular form – the plasticity of excitatory glutamatergic synapses – has been widely investigated. But to fully understand how brain functions develop and are maintained, there is a need for studying the interaction between the different forms of plasticity. Inhibitory Synaptic Plasticity integrates studies that have [..]

**Contents**


**Fields of interest**

Neurosciences; Human Physiology; Neurobiology

**Target groups**

Research

**Type of publication**

Contributed volume

**Available**

2011. X, 188 p. 61 illus., 11 in color. Hardcover

139,95 € ISBN 978-1-4419-6977-4
Insertional Mutagenesis Strategies in Cancer Genetics

The goal of this work is to summarize the contribution that insertional mutagenesis has made to our understanding of cancer. A variety of insertional mutagens are presented that have been used to study a variety of tumor types in several model organisms. In addition, the impact of insertional mutagenesis in several gene therapy trials is discussed along with strategies to avoid such complications in future clinical trials.

Features
Over the past decades, insertional mutagenesis has played an important contribution to our understanding of cancer. Initially, the action of slow transforming retroviruses was used to identify endogenous cellular oncogenes (e.g. Myc, Myb). These observations sparked a series of experiments that eventually led to the acquired mutations in endogenous oncogenes and tumor [...]

Contents

Fields of interest
Cancer Research; Human Genetics; Pharmacology / Toxicology

Target groups
Research

Type of publication
Contributed volume

Available
2011. VIII, 200 p. illus., 4 in color. Hardcover
99,95 € ISBN 978-1-4419-7655-0

Membrane Potential Imaging in the Nervous System

The book is structured in five sections, each containing several chapters written by experts and major contributors to particular topics. The volume starts with a historical perspective and fundamental principles of membrane potential imaging and continues to cover the measurement of membrane potential signals from dendrites and axons of individual neurons, measurements of the activity of many neurons with single cell resolution, monitoring of population signals from the nervous system, and concludes with the overview of new approaches to voltage-imaging. The book is targeted at all scientists interested in this mature but also rapidly expanding imaging approach.

Features
Membrane Potential Imaging in the Nervous System: Methods and Applications describes optical techniques to monitor neuronal membrane potential signals. The knowledge upon which voltage-imaging technique is based was generated over several decades and the aim of this book is to provide a single comprehensive source of information on different types of voltage-imaging techniques, including overviews, [...]

Contents
Historical overview and general methods of membrane potential imaging. - Design and use of organic voltage sensitive dyes. - Imaging submillisecond membrane potential changes from individual regions of single axons, dendrites and spines. - Combined voltage and calcium imaging and signal calibration. - Use of fast-responding voltage-sensitive dyes for large-scale recording of neuronal spiking activity with single-cell resolution. - Monitoring integrated activity of individual neurons using FRET-based voltage-sensitive dyes. - Monitoring population membrane potential signals from neocortex. - [...]
Oncothermia: Principles and Practices

Oncothermia is the next generation medical innovation that delivers selective, controlled and deep energy for cancer treatment. The basic principles for oncothermia stem from oncological hyperthermia, the oldest approach to treating cancer. Nevertheless, hyperthermia has been wrought with significant controversy, mostly stemming from shortcomings of controlled energy delivery. Oncothermia has been able to overcome these insufficiencies and prove to be a controlled, safe and efficacious treatment option. This book is the first attempt to elucidate the theory and practice of oncothermia, based on rigorous mathematical and biophysical analysis, not centered on the temperature increase. It is supported by numerous in-vitro and in-vivo findings and twenty years of clinical experience. This book will help scientists, researchers and medical practitioners in understanding the scientific and conceptual underpinnings of oncothermia and will add another valuable tool in the fight against cancer.

Features

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Contents


Fields of interest

Cancer Research; Oncology; Cell Biology; Medical Education; Statistics for Life Sciences, Medicine, Health Sciences; Applications of Mathematics

Target groups

Professional/practitioner

Type of publication

Monograph

Available

2011: XIII, 565 p. 472 illus. in color. Hardcover

139,95 €


Oxidative Stress and Free Radical Damage in Neurology

The role of free radicals and oxidative stress in neurological disorders has only recently been recognized, leaving clinical neurologists to seek in vain for information on the subject even in major textbooks. What published information there is may consist of brief reminders of the possible association of superoxide dismutase with familial amyotrophic lateral sclerosis and nitrous oxide with migraine. With luck they may also find information on the purported role of free radicals in the pathogenesis of traumatic brain injury. Oxidative Stress and Free Radical Damage in Neurology sets the record straight, focusing on clinical and research issues regarding the interplay of free radicals and the human nervous system. Crucially, the chapters cover numerous antioxidants and their possible therapeutic role in neurological disorders. Key illnesses such as epilepsy, multiple sclerosis and Parkinson’s are analyzed, and chapters also examine more general issues such as the link between free radicals and...[

Features

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Contents

Physical Activity, Dietary Calorie Restriction, and Cancer

The World Health Organization estimates that 25 percent of common cancers can be prevented through regular physical activity and weight control. Common cancers linked to overweight/obesity and a sedentary lifestyle include breast, colon, endometrium, pancreas, renal, esophageal, and several others. There are several plausible mechanisms linking lack of physical activity and increased adiposity to cancer risk, supported by results from animal experiments and human intervention studies.

Features
This book focuses on how obesity and sedentary lifestyles adversely affect cancer risk and survival for individuals as well as mechanisms that may underlie those associations. However, evidence is accumulating rapidly on the cost of obesity and sedentary lifestyles to society. For example, obesity is estimated to lead to costs of $1.47 billion in the U.S. 6 While research on individual level interventions for ...

Contents
Introduction Anne McTiernan, Linda Nebeling, Rachel Ballard-Barbash Epidemiology of overweight/obesity and cancer risk Eugenia Calle Epidemiology of physical activity and cancer risk Kathryn Schmitz, I-Min Lee, Anne McTiernan Dietary energy restriction, exercise, and mammmary carcinogenesis Henry Thompson Animal model of obesity and advanced prostate cancer Tim Nagy Dietary energy restriction, exercise, and colon carcinogenesis Steve Hursting Mechanisms linking obesity to cancer risk in humans Catherine Duggan and Anne McTiernan Mechanisms linking physical activity to cancer risk...

Fields of interest
Cancer Research, Pharmacology / Toxicology

Target groups
Research

Type of publication
Contributed volume

Available

139,95 €
ISBN 978-1-4419-7550-8

Replicating Vaccines
A New Generation

Technological advances, together with a better understanding of the molecular biology of infectious microorganisms, are creating exciting possibilities for a new generation of replicating vaccines. Historically, live vaccines have been either directly derived from a natural source or attenuated by empirical approaches using serial passages and host cell adaptation. Currently, we are witnessing a quantum leap in our technological capabilities to specifically modify the genetic make-up of viruses and bacteria, making it possible to generate improved live vaccines and to develop completely new types of replicating vaccines, such as vectored vaccines, single-round infectious vaccines and replicon vaccines. This book highlights some of the most exciting recent developments toward a new generation of replicating vaccines.

Features
Technological advances, together with a better understanding of the molecular biology of infectious microorganisms, are creating exciting possibilities for a new generation of replicating vaccines. Historically, live vaccines have been either directly derived from a natural source or attenuated by empirical approaches using serial passages and host cell adaptation. Currently, we are witnessing a quantum leap...

Contents
SECTION 1: Today’s Live Attenuated Vaccines.- Live Vaccines and their Role in Modern Vaccinology.- Live Attenuated Vaccines: Influenza, Rotavirus and Varicella Zoster.- Classical Live Viral Vaccines.- SECTION 2: Genetically Attenuated Microorganisms as Vaccines.- Recombinant Live Vaccines to Protect Against the Severe Acute Respiratory Syndrome Coronavirus.- Live Attenuated Shigella Vaccines. Is encouraging good enough?.- New generation BCG vaccines.- SECTION 3: Manipulating Host-Pathogen Interactions to Make Vaccines.- Basic Science Faves the Way to Novel Safe and Effective Pestiviruses...

Fields of interest
Medical Microbiology; Vaccine; Immunology; Virology

Target groups
Research

Type of publication
Contributed volume

Available
2011. XII, 447 p. 42 illus., 14 in color. (Birkhäuser Advances in Infectious Diseases) Hardcover

149,95 €
ISBN 978-3-0346-0276-1

Signaling Pathways in Squamous Cancer

Squamous epithelia form the lining surface of tissues in contact with the environment: the skin, oral mucosa, esophagus and respiratory tract, the genital tract, and several other specialized tissues. These tissues are at highest risk for exposure to environmental carcinogens such as UV, tobacco smoke and infectious agents. Cancers that form in squamous epithelia are among the most common human solid tumors and have high morbidity and mortality. These cancers include squamous cell carcinoma of the skin, oral cancer, head and neck and esophageal cancer, certain lung cancers and cervical cancer. We propose to organize the book so that the early chapters will focus on individual pathways and more specific mechanisms in both normal function and cancer, while the later chapters will be more integrative and include overviews of biomarkers and therapeutic development. This should increase interest for clinically oriented researchers. All authors will be encouraged to provide a balanced review in...

Features
Squamous epithelia form the essential lining surface of tissues in contact with the environment, including the skin, and mucosa of the oral cavity, pharynx, larynx, esophagus, respiratory and genital tracts, and several other specialized tissues. These tissues are at highest risk for exposure to environmental carcinogens such as UV light, tobacco smoke, and infectious agents. Consequently, squamous cell...

Contents
1. Regulation of Squamous Differentiation p63 Dennis Roop Wendy Weinberg, FDA Notch Raphaeld Kopen, Washington University School of Medicine St. Louis Michael Parmacek, U. Penn beta-catenin/ Wnt Elaine Fuchs: Rockefeller Fiona Watt Cam- bridge Research Institute , UK Sarah Millar: U. Penn API Peter Angel, German Cancer Research Center T.Bowden (UV and AP1) University of Arizona Nuclear Hormone receptors PPAR: Jeff Peters, Penn State NF-kB M. Karin, UCSD 2. Regulation of...

Fields of interest
Cancer Research; Pharmacology / Toxicology

Target groups
Research

Type of publication
Contributed volume

Available
2011. XX, 462 p. 44 illus., 29 in color. Hardcover

149,95 €
ISBN 978-1-4419-7202-6
The Blood-Brain and Other Neural Barriers
Reviews and Protocols

Evolving technologies starting with tracer studies, and more recently with genomics and proteomics, have provided novel information about the molecular properties of cerebral endothelium and astrocytes; however, further studies must be done in animal models of neurological diseases and in humans to get a clearer understanding of the pathogenesis of blood-brain barrier (BBB) breakdown in nervous system diseases. In The Blood-Brain and Other Neural Barriers: Reviews and Protocols, experts in the field present a series of cutting-edge protocols which can be used to study the barriers. Opening with detailed information on components of the neurovascular unit as well as the blood-cerebrospinal fluid barrier, and blood-nervous barrier, the book continues with meticulous techniques to image the barriers in humans and experimental animals, followed by cutting-edge molecular techniques to study the BBB and novel models to study the barriers, and it concludes with techniques for the delivery of therapeutic.[...]

Features
Evolving technologies starting with tracer studies, and more recently with genomics and proteomics, have provided novel information about the molecular properties of cerebral endothelium and astrocytes; however, further studies must be done in animal models of neurological diseases and in humans to get a clearer understanding of the pathogenesis of blood-brain barrier (BBB) breakdown in nervous system.[...]

Contents

The Minimal Cell
The Biophysics of Cell Compartment and the Origin of Cell Functionality

In the last ten years there has been a considerable increase of interest on the notion of the minimal cell. With this term we usually mean a cell-like structure containing the minimal and sufficient number of components to be defined as alive, or at least capable of displaying some of the fundamental functions of a living cell. In fact, when we look at extant living cells we realize that thousands of molecules are organized spatially and functionally in order to realize what we call cellular life. This fact elicits the question whether such huge complexity is a necessary condition for life, or a simpler molecular system can also be defined as alive. Obviously, the concept of minimal cell encompasses entire families of cells, from totally synthetic cells, to semi-synthetic ones, to primitive cell models, to simple biomimetic cellular systems. Typically, in the experimental approach to the construction of minimal the main ingredient is the compartment. Lipid vesicles (liposomes) are used to host[...]

Features
In the last ten years there has been a considerable increase of interest on the notion of the minimal cell. With this term we usually mean a cell-like structure containing the minimal and sufficient number of components to be defined as alive, or at least capable of displaying some of the fundamental functions of a living cell. In fact, when we look at extant living cells we realize that thousands of[...]

Contents
Foreword, Pier Luigi Luisi. - Part I The Physical Aspects: 1 Towards a minimal cytoplasm, Jacqueline D. Keighron and Christine D. Keating. - 2 Evolution of the cell’s mechanical design, David Boal and Cameron Forde. - 3 On the minimal requirements for the emergence of cellular crowding, Luis Acerenza Cameron Forde. - On the minimal requirements for the emergence of cellular crowding, Luis Acerenza Cameron Forde. - 4 How small is small? A biophysical chemists thoughts about the lower limits of cell sizes, Peter B. Moore. - 5 Biochemical reactions in the crowded and confined physiological environment. Physical chemistry meets synthetic biology, Allen P. Minton and Germán Rivas-Caballero. - [...] Fields of interest
Biomedicine (general); Biotechnology; Cell Biology; Gene Expression

Zebrafish Neurobehavioral Protocols

As a model organism, zebrafish (Danio rerio) offer an opportunity to perform stealthed scientific investigations in a robust and high-throughput manner. In Zebrafish Neurobehavioral Protocols, experts in the field provide a series of detailed behavioral protocols dealing with the major current research areas in the field of behavioral neuroscience. The chapters discuss the use and interpretation of video-aided quantification of zebrafish behaviors, describe novel assays commonly used to quantify emotionality, learning, memory, and social behaviors in zebrafish, and instruct how to quantify endocrine responses and correlate them with behavior. Written in the Neuromethods series format, the chapters provide authoritative reviews of many commonly used approaches in the field today. This “how to” book will be a useful practical guide for zebrafish researchers and will complement another related book from this series, Zebrafish Models in Neurobehavioral Research. Cutting-edge and timely, Zebrafish[...]

Features
As a model organism, zebrafish (Danio rerio) offer an opportunity to perform stealthed scientific investigations in a robust and high-throughput manner. In Zebrafish Neurobehavioral Protocols, experts in the field provide a series of detailed behavioral protocols dealing with the major current research areas in the field of behavioral neuroscience. The chapters discuss the use and interpretation of[...]

Contents
Video-Aided Analysis of Zebrafish Locomotion and Anxiety-Related Behavioral Responses.- Videograms: A Method for Repeatable Unbiased Quantitative Behavioral Analysis Without Scoring or Tracking.- Automated Imaging of Avoidance Behavior in Larval Zebrafish.- Quantifying Anti-Predator Responses to Chemical Alarm Cues.- Modified Associative Learning T-Maze Test for Zebrafish (Danio rerio) and Other Small Teleost Fish.- Zebrafish Conditioned Place Preference Models of Drug Reinforcement and Relapse to Drug Seeking.- A Simple and Effective Method to Condition Olfactory Behaviors in Groups of[...]

Fields of interest
Neurosciences; Animal Models

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
139,95 €

109,95 €
Advances in Entrepreneurial Finance brings together contributions from researchers from the fields of entrepreneurship, behavioral finance, psychology, and neuroscience to shed new light on the dynamics of decision making and risk taking by entrepreneurs and venture capitalists (VCs). Every new venture requires access to capital at competitive interest rates, and much has been written on general entrepreneurship by management scholars and financial contracting by financial economists using traditional finance theory with all its highly restrictive assumptions regarding decision makers’ cognitive capabilities and behavior. But recent developments in behavioral finance can now be applied to understand how entrepreneurs and VCs perceive risk and uncertainty and how they decide and act accordingly. Showcasing the latest research, this volume demonstrates that findings from the behavioral and neuroscience arenas can and do explain decision making by entrepreneurs and venture investors in the real world.[...]

Features
Advances in Entrepreneurial Finance brings together contributions from researchers from the fields of entrepreneurship, behavioral finance, psychology, and neuroscience to shed new light on the dynamics of decision making and risk taking by entrepreneurs and venture capitalists (VCs). Every new venture requires access to capital at competitive interest rates, and much has been written on general entrepreneurship.[...]

Fields of interest
Entrepreneurship, Finance / Banking, Cognitive Psychology

Target groups
Research

Type of publication
Monograph

Available
99,95 €

Collaboration and Co-creation
New Platforms for Marketing and Innovation

Today’s consumers are more knowledgeable, networked, and vocal. For them consumption is not merely an act of buying products and services, but an expression of their creative potential. Consequently, they are demanding a say and a voice in how companies conceive, develop, and deliver value to them. It is not surprising, therefore, to hear that a large number of companies are transforming how they innovate—not only in terms of developing new products and services, but in how they are created, delivered, and supported to customers. Open Innovation thinking, where companies collaborate with suppliers, distributors, and customers to co-create unique value, is fast replacing traditional thinking that viewed innovation as a proprietary activity and marketing as a static, one-way broadcast. However, while there is significant advocacy and buy-in for collaborating with customers, there is little guidance for companies on how to undertake the journey from applause and appreciation to execution. Only reading[...]

Features
Praise for Collaboration and Co-Creation “In today’s customer-empowered world, collaboration and co-creation competencies are critical to the future growth of a company… Gaurav Bhalla offers a concrete framework and specific examples that managers can use to implement value co-creation programs with their customers. A must-read for companies not wishing to get left behind!” --Vijay Govindarajan, Earl[...]

Contents
Today’s consumers are more knowledgeable, networked, and vocal. For them consumption is not merely an act of buying products and services, but an expression of their creative potential. Consequently, they are demanding a say and a voice in how companies conceive, develop, and deliver value to them. It is not surprising, therefore, to hear that a large number of companies are transforming how they innovate—not only in terms of developing new products and services, but in how they are created, delivered, and supported to customers. Open Innovation thinking, where companies collaborate with[...]

Fields of interest
Marketing, Management/Business for Professionals; Organization / Planning

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XV, 205 p. 10 illus. Hardcover
39,95 €

Complex Systems in Finance and Econometrics

Complex Systems in Finance and Econometrics is an authoritative reference to the basic tools and concepts of complexity and systems theory as applied to an understanding of complex, financial-based business and social systems. Fractals, nonlinear time series modeling, cellular automata, game theory, network theory and statistical physics are among the essential tools and techniques for predicting, monitoring, evaluating, managing, and decision-making in a wide range of fields from health care, poverty alleviation, and energy and the environment, to manufacturing and quality assurance, model building, organizational learning, and macro and microeconomics. Sixty of the world’s leading experts present 47 articles for an audience of advanced undergraduate and graduate students, professors, and professionals in all of these fields.

Features
Complex Systems in Finance and Econometrics is an authoritative reference to the basic tools and concepts of complexity and systems theory as applied to an understanding of complex, financial-based business and social systems. Fractals, nonlinear time series modeling, cellular automata, game theory, network theory and statistical physics are among the essential tools and techniques for predicting,[...]

Contents
47 entries drawn from three sections of the Encyclopedia of Complexity: Agent Based Modeling and Simulation, Finance and Econometrics; and System Dynamics.

Fields of interest
Finance / Banking, Quantitative Finance, Statistical Physics, Dynamical Systems and Complexity; Econometrics

Target groups
Professional/practitioner

Type of publication
Encyclopedia

Available
2011. 910 p. 282 illus., 100 in color. In 2 volumes, not available separately. Hardcover
499,00 €
M.P. Altmann, Cologne, Germany

**Contextual Development Economics**

A Holistic Approach to the Understanding of Economic Activity in Low-Income Countries

Poverty still persists in today’s low-income countries despite decades of international aid, and extensive research on the determinants of growth and development. The book argues that meeting this challenge requires a holistic understanding of the context-specific factors that influence economic behavior and structures in poor countries. Contextual Development Economics approaches this task by offering a methodology that allows analysing the dynamic interrelations between economic, cultural and historical determinants of economic life in low-income countries. The book starts with an empirical inquiry into the economic characteristics of low-income countries that create the context by which the specific forms of organising economic activity in these countries are determined. It then looks at how different generations of development economists sought to explain economic realities in low-income countries from the 1940s through today. The book finally synthesizes the results from this empirical and...[

**Features**

Poverty still persists in today’s low-income countries despite decades of international aid, and extensive research on the determinants of growth and development. The book argues that meeting this challenge requires a holistic understanding of the context-specific factors that influence economic behavior and structures in poor countries. Contextual Development Economics approaches this task by offering...[

**Contents**


**Fields of interest**

Methodology and the History of Economic Thought; Development Economics; Political Science

**Target groups**

Research

**Type of publication**

Monograph

**Available**


89,95 €


R. Rohrbeck, TU Berlin, Germany

**Corporate Foresight**

Towards a Maturity Model for the Future Orientation of a Firm

Have you ever wondered why even large companies fail when faced with changes in their environment? Would you be surprised to learn that the average life expectancy of a Fortune 500 company is below 50 years? This book presents findings from 19 case studies in multinational companies such as Siemens, Volkswagen, General Electric, Philips and Deutsche Telekom. René Rohrbeck proposes a Maturity Model to assess how prepared a company is to respond to external (disruptive) change. He uses data from 107 interviews with board members, corporate strategists, innovation managers, and corporate foresight professionals to present and discuss best practices. Using illustrations to show the complex interaction of corporate foresight with other units such as innovation and strategic management, René Rohrbeck provides the reader with rich insights on how to make an organization agile and reactive towards change. For scholars this book proposes multiple hypotheses and frameworks for future research.

**Features**

Have you ever wondered why even large companies fail when faced with changes in their environment? Would you be surprised to learn that the average life expectancy of a Fortune 500 company is below 50 years? This book presents findings from 19 case studies in multinational companies such as Siemens, Volkswagen, General Electric, Philips and Deutsche Telekom. René Rohrbeck proposes a Maturity Model to...[

**Contents**


**Fields of interest**

Organization/Planning; Technology Management; Business & Management Science

**Target groups**

Research

**Type of publication**

Monograph

**Available**


99,95 €

ISBN 978-3-7908-2625-8

J. Ruggiero, University of Dayton, Department of Economics and Finance, Dayton, OH, 45469-2251 USA

**Frontiers in Major League Baseball**

Nonparametric Analysis of Performance Using Data Envelopment Analysis

This book focuses on the application of Data Envelopment Analysis (DEA) to Major League Baseball (MLB). DEA is a nonparametric linear programming model that is used across academic disciplines. In sports economics, authors have applied the technique primarily to assess team and/or managerial efficiency. The basis for performance analysis is economic production theory, where it is assumed that baseball can be viewed as a production process whereby inputs (player quality measures) are transformed into outputs (wins, attendance). The primary advantage that DEA has over more traditional regression based approaches is the ability to handle multiple inputs and multiple outputs. Further, the approach is nonparametric and hence, does not require a priori specification of the production function. The book develops the theory of DEA in the context of a production environment. A focal point is the assessment of technical and cost efficiency of MLB teams. It is shown that previous frontier applications...[

**Features**

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**Contents**


**Fields of interest**

Economic Policy; Management/Business for Professionals; Economics; Operation Research / Decision Theory

**Target groups**

Research

**Type of publication**

Monograph

**Available**


89,95 €

ISBN 978-1-4419-0830-8
Fundamentals of Traffic Simulation

The increasing power of computer technologies, the evolution of software engineering and the advent of Intelligent Transport Systems (ITS) worldwide has helped make traffic simulation one of the most used approaches for traffic analysis in support of the design and evaluation of traffic systems. The ability of traffic simulation software to emulate the time variability of traffic phenomena makes it a uniquely useful tool for capturing the complexity of traffic systems. While a wide variety of simulation software is available, no one book has presented a unified treatment of the subject. Fundamentals of Traffic Simulation is the first book to provide practitioners and researchers with a comprehensive treatment of the state of the art of traffic simulation. Leading researchers worldwide provide up-to-date information on: Simulation as a well established and grounded OR technique and its specificities when applied to traffic systems. The main approaches to traffic simulation and the principles of [...] Features

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Operation Research / Decision Theory; Operations Research, Mathematical Programming; Regional Science; Applied Mathematics / Computational Methods of Engineering

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available


139,95 €


How Organizations Remember

Retaining Knowledge through Organizational Action

How an organization works is largely a function of what it knows—i.e., the collective knowledge about all aspects of the enterprise, from competitive intelligence to formal systems and policies to the ways in which individuals solve problems and share their expertise. Organizational knowledge is not to be found in manuals and web sites, but in the day-to-day interactions among employees, suppliers, customers, investors, and other stakeholders. How Organizations Remember is based on a 10-month study of a technology firm with locations in three countries (Australia, US, and Ireland); the company has undergone rapid growth and expansion, which have had a profound impact on power structures and organizational culture, and hence, on the ways in which knowledge is created and disseminated. The author discovered that what is remembered is diverse, and of differing value within and across the organization. How knowledge is remembered is equally diverse, and ranges from computer files to cartoons on the [...] Features

How an organization works is largely a function of what it knows—i.e., the collective knowledge about all aspects of the enterprise, from competitive intelligence to formal systems and policies to the ways in which individuals solve problems and share their expertise. Organizational knowledge is not to be found in manuals and web sites, but in the day-to-day interactions among employees, suppliers, customers, [...] Contents

1 INTRODUCTION. - 2 KNOWING ABOUT KNOWLEDGE. - 3 DEVELOPING KNOWLEDGE RETENTION STRUCTURES. - 4 RETAINING KNOWLEDGE THROUGH COMMUNICATION. - 5 MANAGING KNOWLEDGE RETENTION STRUCTURES. - 6 HOW ORGANIZATIONS RETAIN KNOWLEDGE. - 7 THEORY AND IMPLICATIONS. Fields of interest

Management/ Business for Professionals; Organization / Planning; Personnel Management

Target groups

Research

Type of publication

Monograph

Available

2011. XI, 191 p. 15 illus. (Organizational Change and Innovation, Vol. 2) Hardcover

89,95 €

Knowledge and the Family Business

The Governance and Management of Family Firms in the New Knowledge Economy

Family businesses—the predominant form of business organization around the world—can make numerous, critical contributions to the economy and family well-being in both financial and qualitative terms. But dysfunctional family businesses can be difficult to manage, painful experiences at best, and they can destroy family wealth and personal relationships. This book explores the dynamics of family business management, in the context of constantly changing market conditions and the role that knowledge management plays in strategic planning and adaptation. Integrating the literature from family business, entrepreneurship, industrial psychology, and knowledge management, and with illustrative examples from a variety of enterprises, the authors address such topics as: • How family businesses can compete in the new knowledge economy • How to manage a family business when knowledge is its main asset • How to transfer knowledge (and how to keep it alive) through family generations Within this framework, [...] Features

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Contents


Fields of interest

Entrepreneurship

Target groups

Research

Type of publication

Monograph

Available

2011. X, 190 p. 50 illus. (Innovation, Technology, and Knowledge Management) Hardcover

89,95 €


Market Structure and Equilibrium

In his book „Marktform und Gleichgewicht“, published initially in 1934, Heinrich von Stackelberg presented his groundbreaking leadership model of firm competition. In a work of great originality and richness, he described and analyzed a market situation in which the leader firm moves first and the follower firms then move sequentially. This game-theoretic model, now widely known as Stackelberg competition, has had tremendous impact on the theory of the firm and economic analysis in general, and has been applied to study decision-making in various fields of business. As the first translation of von Stackelberg’s book into English, this volume makes his classic work available in its original form to an English-speaking audience for the very first time.

Features

In his book „Marktform und Gleichgewicht“, published initially in 1934, Heinrich von Stackelberg presented his groundbreaking leadership model of firm competition. In a work of great originality and richness, he described and analyzed a market situation in which the leader firm moves first and the follower firms then move sequentially. This game-theoretic model, now widely known as Stackelberg competition, has [...]

Contents


Fields of interest

Game Theory / Mathematical Methods; Game Theory, Economics, Social and Behavioral Sciences

Target groups

Research

Type of publication

Monograph

Available

2011. XIV, 134 p. Hardcover

89,95 €

ISBN 978-3-642-12585-0
National Intellectual Capital
A Comparison of 40 Countries

Over the past decade, knowledge assets and intellectual capital have been attracting an increasing amount of attention, not only from academics and CEOs, but also from national policy makers. To date, most studies of intellectual capital have focused at the organizational level, with an emphasis on explaining the role of “intangible assets” as a differentiator between accounting value and market value as a possible source of corporate competitive advantage. More recently, pioneers in the field, including the authors of this book, have begun to apply these methodologies to a broader scope, with the objective of comparing the intellectual capital indices at the national or regional level. As a result, an increasing number of world organizations and researchers are commissioned to investigate this future-oriented crucial national issue. Yet, the linkage between the value of intangible assets and how to quantify or explain the role of “intangible assets” as a differentiator between accounting value and market value from the emergence of a business idea and organization of a start-up team through the birth of an operational business. The U.S. projects (the first and second Panel Studies of Entrepreneurial Dynamics, known as PSD1 and PSD2) have counterparts in a number of other countries: Australia, Canada, China, Latvia, Netherlands (two projects), Norway, and Sweden. These eleven projects in nine countries, implemented over the past decade, are at different stages of development and have been utilized for a wide range of assessments of entrepreneurial and business creation phenomena. This volume presents the state of the art of these international research projects, providing the first in-depth comparison of the firm creation data across a wide range of national...[ ]

Features
Over the past decade, knowledge assets and intellectual capital have been attracting an increasing amount of attention, not only from academics and CEOs, but also from national policy makers. To date, most studies of intellectual capital have focused at the organizational level, with an emphasis on explaining the role of “intangible assets” as a differentiator between accounting value and market value as a [...]
Planning Production and Inventories in the Extended Enterprise

A State of the Art Handbook, Volume 1

In two volumes, Planning Production and Inventories in the Extended Enterprise: A State of the Art Handbook examines production planning across the extended enterprise against a backdrop of important gaps between theory and practice. The early chapters describe the multifaceted nature of production planning problems and reveal many of the core complexities. The middle chapters describe recent research on theoretical techniques to manage these complexities. Accounts of production planning system currently in use in various industries are included in the later chapters. Throughout the two volumes there are suggestions on promising directions for future work focused on closing the gaps.

Features
In two volumes, Planning Production and Inventories in the Extended Enterprise: A State of the Art Handbook examines production planning across the extended enterprise against a backdrop of important gaps between theory and practice. The early chapters describe the multifaceted nature of production planning problems and reveal many of the core complexities. The middle chapters describe recent research on [...]
The research underlying this volume was designed to test the theory of Total Factor Productivity (TFP) in contemporary context. Developed by Nobel Prizewinning economist, Robert Solow, in the 1950s, TFP has been applied by many economists to investigate the relationships among capital, labor, and economic performance. In this analysis, John Wetter presents the hypothesis that technological investment drives growth and performance of the U.S. economy. The study addresses four key questions: 1. Is there a relationship between Total Factor Productivity and Gross National Product? 2. Is there a relationship between Total Factor Productivity and Research & Development expenditures? 3. Is there a relationship between Research & Development expenditures and Gross Domestic Product? 4. Can the relationship in research question #1 be explained by other factors? Is there any potential non-spuriousness (mediation) implication to the relationship? Synthesizing the literature from related fields, including [...] Features

The research underlying this volume was designed to test the theory of Total Factor Productivity (TFP) in contemporary context. Developed by Nobel Prizewinning economist, Robert Solow, in the 1950s, TFP has been applied by many economists to investigate the relationships among capital, labor, and economic performance. In this analysis, John Wetter presents the hypothesis that technological investment drives [...] Fields of interest

R & D / Technology Policy; Economic Policy; Economic Growth

Target groups

Research

Type of publication

Monograph

Available


89,95 €
ISBN 978-1-4419-7529-4

The Impacts of Research and Development Expenditures

The Relationship Between Total Factor Productivity and U.S. Gross Domestic Product Performance

Transforming Water Management in South Africa

Designing and Implementing a New Policy Framework

One of the early set of reforms that South Africa embarked on after emerging from apartheid was in the water sector, following a remarkable, consultative process. The policy and legal reforms were comprehensive and covered almost all aspects of water management including revolutionary changes in defining and allocating rights to water, radical reforms in water management and supply institutions, the introduction of the protection of environmental flows, and major shifts in charging for water use and in the provision of free basic water. Over ten years of implementation of these policy and legislative changes mean that valuable lessons have already been learned and useful experiences gained in the challenge of effective water resources management and water services provision in a middle income country.

Features

One of the early set of reforms that South Africa embarked on after emerging from apartheid was in the water sector, following a remarkable, consultative process. The policy and legal reforms were comprehensive and covered almost all aspects of water management including revolutionary changes in defining and [...] Contents


Environmental Economics; Agricultural Economics; Environmental Law / Policy / Ecojustice; Sustainable Development; Development Economics; Environmental Management

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available

2011. XXVII, 378 p. 30 illus., 17 in color. (Global Issues in Water Policy, Vol. 2) Hardcover

129,95 €
ISBN 978-90-481-9366-0

Risk and Uncertainty in Financial Markets

Volatility

Risk and Uncertainty in Financial Markets

Volatility is very much with us in today’s equity markets. Day-to-day price swings are often large and intra-day volatility elevated, especially at market openings and closings. What explains this? What does this say about the quality of our markets? Can short-period volatility be controlled by better market design and a more effective use of electronic technology? Featuring insights from an international array of prominent academics, financial markets experts, policymakers and journalists, the book addresses these and other questions concerning this timely topic. In so doing, we seek deeper knowledge of the dynamic process of price formation, and of the market structure and regulatory environment within which our markets function. The Zachlin School of Business Financial Markets Series presents the insights emerging from a sequence of conferences hosted by the Zachlin School at Baruch College for industry professionals, regulators, and scholars. Much more than historical documents, the transcripts[...] Features

Volatility is very much with us in today’s equity markets. Day-to-day price swings are often large and intra-day volatility elevated, especially at market openings and closings. What explains this? What does this say about the quality of our markets? Can short-period volatility be controlled by better market design and a more effective use of electronic technology? Featuring insights from [...] Contents


Fields of interest

Finance / Banking; Financial Economics

Target groups

Research

Type of publication

Proceedings

Available

2011. XVI, 200 p. 10 illus. (Zicklin School of Business Financial Markets Series, Proceeding 0) Hardcover

89,95 €

Risk and Uncertainty in Financial Markets

Volatility
Voting Paradoxes and Group Coherence

The Condorcet Efficiency of Voting Rules

The likelihood of observing Condorcet’s Paradox is known to be very low for elections with a small number of candidates if voters’ preferences on candidates reflect any significant degree of a number of different measures of mutual coherence. This reinforces the intuitive notion that strange election outcomes should become less likely as voters’ preferences become more mutually coherent. Similar analysis is used here to indicate that this notion is valid for most, but not all, other voting paradoxes. This study also focuses on the Condorcet Criterion, which states that the pairwise majority rule winner should be chosen as the election winner, if one exists. Representations for the Condorcet Efficiency of the most common voting rules are obtained here as a function of various measures of the degree of mutual coherence of voters’ preferences. An analysis of the Condorcet Efficiency representations that are obtained yields strong support for using Borda Rule.

Features
The likelihood of observing Condorcet’s Paradox is known to be very low for elections with a small number of candidates if voters’ preferences on candidates reflect any significant degree of a number of different measures of mutual coherence. This reinforces the intuitive notion that strange election outcomes should become less likely as voters’ preferences become more mutually coherent. Similar analysis is used here to indicate that this notion is valid for most, but not all, other voting paradoxes. This study also focuses on the Condorcet Criterion, which states that the pairwise majority rule winner should be chosen as the election winner, if one exists. Representations for the Condorcet Efficiency of the most common voting rules are obtained here as a function of various measures of the degree of mutual coherence of voters’ preferences. An analysis of the Condorcet Efficiency representations that are obtained yields strong support for using Borda Rule.

Contents
Voting Paradoxes and Their Probabilities.- Condorcet’s Paradox and Group Coherence.- Other Incompatibility Paradoxes.- Other Voting Paradoxes.- Condorcet Efficiency and Social Homogeneity.- Coherence and the Efficiency Hypothesis.- Other Characteristics of Voting Rules.- The Significance of Voting Rule Selection.- Complete PMR Ranking Efficiencies.

Fields of interest
Economic Theory; Game Theory / Mathematical Methods; Public Finance & Economics; Political Science; Game Theory, Economics, Social and Behavioral Sciences

Target groups
Research

Type of publication
Monograph

Available
139.95 €
ISBN 978-3-642-03106-9
Adhesion of Cells, Viruses and Nanoparticles

"Adhesion of Cells, Viruses and Nanoparticles" describes the adhesion of cells, viruses and nanoparticles starting from the basic principles of adhesion science, familiar to postgraduates, and leading on to recent research results. The underlying theory is that of van der Waals forces acting between cells and substrates, embodied in the molecules lying at the surfaces, together with the geometry and elasticity of the materials involved. The first part describes the fundamental background to adhesion principles, including the phenomenology, the important equations and the modeling ideas. Then the mechanisms of adhesion are explored in the second part, including the elastic deformations of spheres and the importance of the energy of adhesion as measured in various tests. It is demonstrated that adhesion of cells is statistical and depends on Brownian movement and on the complex multiple contacts that can form as cells move around. Then, detailed chapters on cell adhesion, contact of viruses and [...] Features

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Physical Chemistry

Target groups

Research

Type of publication

Monograph

Available

2011. XV, 282 p. Hardcover

139,95 €


Biophotonics: Spectroscopy, Imaging, Sensing, and Manipulation

This volume describes an impressive array of the current photonic-related technologies being used in the investigation of biological systems. The topics include various types of microscopy (fluorescence correlation microscopy, two-photon microscopy), sensitive detection of biological molecules, nano-surgery techniques, fluorescence resonance energy transfer, nano-plasmonics, terahertz spectroscopy, and photosynthetic energy conversion. The emphasis is on the physical principles behind each technique, and on examining the advantages and limitations of each. The book begins with an overview by Paras Prasad, a leader in the field of biophotonics, of several important optical techniques currently used for studying biological systems. In the subsequent chapters these techniques are discussed in depth, providing the reader with a detailed understanding of the basic physical principles at work. An excellent treatment of terahertz spectroscopy demonstrates how photonics is being extended beyond the visible [...] Features

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Biotechnology; Biophysics and Biological Physics; Biomaterials; Spectroscopy and Microscopy; Atomic, Molecular, Optical and Plasma Physics

Target groups

Research

Type of publication

Proceedings

Available


169,95 €

Biophotonics: Spectroscopy, Imaging, Sensing, and Manipulation

This volume describes an impressive array of the current photonic-related technologies being used in the investigation of biological systems. The topics include various types of microscopy (fluorescence correlation microscopy, two-photon microscopy), sensitive detection of biological molecules, nano-surgery techniques, fluorescence resonance energy transfer, nano-plasmonics, terahertz spectroscopy, and photosynthetic energy conversion. The emphasis is on the physical principles behind each technique, and on examining the advantages and limitations of each. The book begins with an overview by Paras Prasad, a leader in the field of biophotonics, of several important optical techniques currently used for studying biological systems. In the subsequent chapters these techniques are discussed in depth, providing the reader with a detailed understanding of the basic physical principles at work. An excellent treatment of terahertz spectroscopy demonstrates how photonics is being extended beyond the visible.[…]

Features

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Contents


Fields of interest

Biotechnology; Biophysics and Biological Physics; Biomaterials; Spectroscopy and Microscopy; Atomic, Molecular, Optical and Plasma Physics

Target groups

Research

Type of publication

Proceedings

Available


89,95 €

ISBN 978-94-007-0028-4

Computational Chemistry

Introduction to the Theory and Applications of Molecular and Quantum Mechanics

This corrected second edition contains new material which includes solvent effects, the treatment of singlet diradicals, and the fundamentals of computational chemistry. "Computational Chemistry: Introduction to the Theory and Applications of Molecular and Quantum Mechanics" is an invaluable tool for teaching and researchers alike. The book provides an overview of the field, explains the basic underlying theory at a meaningful level that is not beyond beginners, and it gives numerous comparisons of different methods with one another and with experiment. The following concepts are illustrated and their possibilities and limitations are given: - potential energy surfaces; - simple and extended Huëckel methods; - ab initio, AM1 and related semiempirical methods; - density functional theory (DFT). Topics are placed in a historical context, adding interest to them and removing much of their apparently arbitrary aspect. The large number of references, to all significant topics mentioned, should make this[…]

Features

The second edition of this popular textbook has been revised to improve explanations and to add topics which were not featured in the first edition. It also contains extended, updated examples and references. The questions (the hallmark of a genuine textbook) at the end of each chapter fall into two classes: to test and reinforce the reader’s understanding, and to encourage deeper thought. As in the[…]

Contents


Fields of interest

Theoretical and Computational Chemistry; Computer Applications in Chemistry; Organic Chemistry

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. XVI, 664 p. Hardcover

159,95 €


Detection of Biological Agents for the Prevention of Bioterrorism

The threat of biological and chemical terrorism has driven the demand for timely techniques that can quickly detect the agent or agents used in an attack. The detection and/or prevention of these potential security threats provide significant scientific and technical challenges due to the combination of possible agents and modes of delivery available. This book will present a thorough look at the importance and technological challenges of mass spectrometry (MS) for the detection & identification of biological and chemical threats. This new contribution’s general aims are to draw the attention of recognized practitioners, experts and graduate students trying to grasp the latest MS developments in the cutting-edge fields of MS-biodefense technologies for the rapid/early-specific sensitive threat detection of pathogens, viruses, explosives, mycotoxins, chemical agents, and biological markers of xenobiological chemicals.

Features

The threat of biological and chemical terrorism has driven the demand for timely techniques that can quickly detect the agent or agents used in an attack. The detection and/or prevention of these potential security threats provide significant scientific and technical challenges due to the combination of possible agents and modes of delivery available. This book will present a thorough look at the importance[…]

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Preface.- Broadband analysis of biogas by mass spectrometry.- Hollow-fiber flow field-flow fractionation for mass spectrometry: from proteins to whole bacteria.- Mass spectrometry and tandem mass spectrometry for protein biomarker discovery and bacterial speciation.- Intact cell/spore mass spectrometry of Fusarium macro conidia for fast isolate and species differentiation.- Bacteriophage amplification-coupled detection and identification of bacterial pathogens.- Matrix assisted laser desorption ionization mass spectrometric analysis of bacillus anthracis: from fingerprint analysis of[…]

Fields of interest

Mass Spectrometry; Security Science and Technology; Monitoring / Environmental Analysis; Biotechnology

Target groups

Graduate

Type of publication

Proceedings

Available


169,95 €

Detection of Biological Agents for the Prevention of Bioterrorism

The threat of biological and chemical terrorism has driven the demand for timely techniques that can quickly detect the agent or agents used in an attack. The detection and/or prevention of these potential security threats provide significant scientific and technical challenges due to the combination of possible agents and modes of delivery available. This book will present a thorough look at the importance and technological challenges of mass spectrometry (MS) for the detection & identification of biological and chemical threats. This new contribution’s general aims are to draw the attention of recognized practitioners, experts and graduate students trying to grasp the latest MS developments in the cutting-edge fields of MS-biodefense technologies for the rapid/early/specific sensitive threat detection of pathogens, viruses, explosives, mycotoxins, chemical agents, and biological markers of xenobiotic chemicals.

Features
The threat of biological and chemical terrorism has driven the demand for timely techniques that can quickly detect the agent or agents used in an attack. The detection and/or prevention of these potential security threats provide significant scientific and technical challenges due to the combination of possible agents and modes of delivery available. This book will present a thorough look at the importance [...]
High-Performance Thin-Layer Chromatography (HPTLC)

The present edited book is the presentation of 18 in-depth national and international contributions from eminent professors, scientists and instrumental chemists from educational institutes, research organizations and industries providing their views on their experience, handling, observation and research outputs on HPTLC, a multi-dimensional instrumentation. The book describes the recent advancements made on TLC which have revolutionized and transformed it into a modern instrumental technique HPTLC. The book addresses different chapters on HPTLC fundamentals: principle, theory, understanding; instrumentation: implementation, optimization, validation, automation and qualitative and quantitative analysis; applications: phytochemical analysis, biomedical analysis, herbal drug quantification, analytical analysis, finger print analysis and potential for hyphenation: HPTLC future to combinatorial approach, HPTLC-MS, HPTLC-FTIR and HPTLC-Scanning Diode Laser. The chapters in the book have been designed [..]

Features
The book is organized in four chapters comprising of 18 contributions from experts of international repute. The book highlights HPTLC system as a versatile modern analytical technique with reference to its excellent automation, optimization, multidimensional applications. It deals with fundamentals, principle, theory of HPTLC based separation, experimental details, handling understanding and implementation. It [..]

Contents

Fields of interest
Analytical Chemistry; Medical Biochemistry; Environmental Engineering / Biotechnology; Organic Chemistry

Target groups
Research

Type of publication
Monograph

Neurodegenerative Diseases

This volume develops multiscale and multiphysics simulation methods to understand nano- and bio-systems by overcoming the limitations of time- and length-scales. Here the key issue is to extend current computational simulation methods to be useful for providing microscopic understanding of complex experimental systems. This thesis discusses the multiscale simulation approaches in nanoscale metal-insulator-metal junction, molecular memory, ionic transport in zeolite systems, dynamics of biomolecules such as lipids, and model lung system. Based on the cases discussed here, the author suggests various systematic strategies to overcome the limitations in time- and length-scales of the traditional monoscale approaches.

Features
This volume develops multiscale and multiphysics simulation methods to understand nano- and bio-systems by overcoming the limitations of time- and length-scales. Here the key issue is to extend current computational simulation methods to be useful for providing microscopic understanding of complex experimental systems. This volume discusses the multiscale simulation approaches in nanoscale [..]

Contents

Fields of interest
Theoretical and Computational Chemistry; Nanotechnology; Biochemistry

Type of publication
Monograph

Available
2010. XV, 191 p. (Topics in Medicinal Chemistry, Vol. 6) Hardcover
189.95 €
ISBN 978-3-642-16757-7
Ruthenium Oxidation Complexes
Their Uses as Homogenous Organic Catalysts

Ruthenium Oxidation Complexes explores ruthenium complexes, particularly those in higher oxidation states, which function as useful and selective organic oxidation catalysts. Particular emphasis is placed on those systems which are of industrial significance. The preparation, properties and applications of the ruthenium complexes are described, followed by a presentation of their oxidative properties and summary of the different mechanisms involved in the organic oxidations (e.g., oxidations of alcohols, alkenes, arenes and alkenes, alkanes, amines, ethers, phosphines and miscellaneous substrates). Moreover, future trends and developments in the area are discussed. This monograph is aimed at inorganic, organic, industrial and catalysis chemists, especially those who wish to carry out specific organic oxidations using catalytic methods.

Features
Ruthenium Oxidation Complexes explores ruthenium complexes, particularly those in higher oxidation states, which function as useful and selective organic oxidation catalysts. Particular emphasis is placed on those systems which are of industrial significance. The preparation, properties and applications of the ruthenium complexes are described, followed by a presentation of their oxidative properties and summary of the different mechanisms involved in the organic oxidations (e.g., oxidations of alcohols, alkenes, arenes and alkenes, alkanes, amines, ethers, phosphines and miscellaneous substrates). Moreover, future trends and developments in the area are discussed. This monograph is aimed at inorganic, organic, industrial and catalysis chemists, especially those who wish to carry out specific organic oxidations using catalytic methods.

Contents

Fields of interest
Organic Chemistry; Catalysis; Inorganic Chemistry; Industrial Chemistry / Chemical Engineering

Target groups
Research

Type of publication
Monograph

Available
2011. XV, 330 p. (Catalysis by Metal Complexes, Vol. 34) Hardcover
129,95 €
ISBN 978-1-4020-9376-0

STM Investigation of Molecular Architectures of Porphyrinoids on a Ag(111) Surface

Supramolecular Ordering, Electronic Properties and Reactivity

The self-assembly of large organic molecules has become a vividly explored and interdisciplinary field in science. One major goal is the tailored fabrication of highly ordered, molecular networks, which are stabilized on a metal surface. Metalloporphyrins receive particular attention, because their distinct intrinsic functionalities make them promising candidates for applications in chemical sensors, solar cells, and for tailored catalytic processes. Based on scanning tunneling microscopy investigations, several novel and fundamental contributions are presented, which has led to a new level of understanding. Highlights are the results with respect to intramolecular conformation and supramolecular ordering, electronic interactions with the substrate, surface confined synthesis such as in-situ metalation reactions, and ligand effects. The number of publications this work has led to emphasises its quality and significance.

Features
The self-assembly of large organic molecules has become a vividly explored and interdisciplinary field in science. One major goal is the tailored fabrication of highly ordered, molecular networks, which are stabilized on a metal surface. Metalloporphyrins receive particular attention, because their distinct intrinsic functionalities make them promising candidates for applications in chemical sensors, solar [...]

Contents

Fields of interest
Physical Chemistry; Analytical Chemistry; Surface and Interface Science, Thin Films; Energy Technology

Target groups
Research

Type of publication
Monograph

Available
2010. XXVII, 164 p. 76 illus., 21 in color. (Springer Theses) Hardcover
99,95 €
ISBN 978-3-642-14739-5

Testing Molecular Wires
A Photophysical and Quantum Chemical Assay

The field of molecular electronics and organic photovoltaics is steadily growing. One of the major themes in molecular electronics is the construction, measurement, and understanding of the current-voltage response of an electronic circuit, in which molecules may act as conducting elements. The investigated molecular structures in this thesis have been shown to be suitable for distance-independent charge transport. More precisely, the systems investigated were of particular interest due to their ability to provide efficient electronic coupling between electroactive units, and display wire-like behavior in terms of transferring charges from donors to acceptors. Besides impacting on the field of molecular electronics, the results of this research also have applications in the design and development of light harvesting, phototransformation and catalytic modules. This work is a great asset to the field of charge transport through organic pi-conjugated molecules.

Features
The field of molecular electronics and organic photovoltaics is steadily growing. One of the major themes in molecular electronics is the construction, measurement, and understanding of the current-voltage response of an electronic circuit, in which molecules may act as conducting elements. The investigated molecular structures in this thesis have been shown to be suitable for distance-independent charge [...]

Contents

Fields of interest
Physical Chemistry; Applied and Technical Physics; Energy Technology

Target groups
Research

Type of publication
Monograph

Available
2010. XIII, 182 p. 109 illus., 30 in color. (Springer Theses) Hardcover
99,95 €
ISBN 978-3-642-14739-5
Theory and Experiment in Electrocatalysis

This review volume highlights advances in both theoretical and experimental techniques and points out both the progress made and the challenges to overcome in the near future. The topics cover a broad spectrum going from surface characterization, investigation of thermodynamics and kinetics mechanistic pathways, electrochemical experiments and theory, multi-scale modeling applied to synthesis and growth processes such as electrodeposition, and corrosion reactions arising from the nanosize of electrocatalysts that affect their lifetime and activity.

Features

- Topics in Number 50 include:• Investigation of alloy cathode Electrocatalysts• A model Hamiltonian that incorporates the solvent effect to gas-phase density functional theory (DFT) calculations• DFT-based theoretical analysis of ORR mechanisms• Structure of the polymer electrolyte membranes (PEM)• [...] 

Contents


Fields of interest

Electrochemistry; Catalysis; Nanotechnology; Surfaces and Interfaces, Thin Films

Target groups

Research

Type of publication

Monograph

Available

2010. XXV, 578 p. 200 illus., 40 in color. (Modern Aspects of Electrochemistry, Vol. 50) Hardcover

189,95 €


Ultrasound Technologies for Food and Bioprocessing

Traditional food and bioprocessing technologies are facing challenges due to high expectation from the consumers and producers for better quality and safety, higher process efficiency, and products with novel properties or functionalities. For this reason, in the last few years new forms of physical energies have been explored to propose alternatives to traditional processing technologies. Acoustic energy has the potential to replace or partially substitute conventional processes, and at the same time offer unique opportunities in the characterization of foods and biomaterials. This book is a resource for experts and newcomers in the field of power ultrasound, gives insights into the physical principles of this technology, details the latest advancements, and links them to current and potential applications in the food and bioprocessing related industries.

Features

- Traditional food and bioprocessing technologies are facing challenges due to high expectations from consumers and producers in their demand for better quality and safety, higher process efficiencies, and products with novel properties or functionalities. For these reasons, in the last few years new forms of physical energy have been explored as alternatives to traditional processing technologies. Acoustic [...] 

Contents

Physical and chemical effects of ultrasound. - Acoustic cavitation. - Ultrasound applications in food processing. - The thermodynamic and kinetic aspects of power ultrasound processes. - Wideband multifrequency, multimode, and modulated (MWM) ultrasonic technology. - Application of hydrodynamic cavitation for food and bioprocessing. - Contamination-free sonoreactor for the food industry. - Controlled cavitation for scale free heating, gum hydration and emulsification in food and consumer products. - Ultrasonic cutting of foods. - Engineering food ingredients with high-intensity ultrasound. [...] 

Fields of interest

Chemistry (general); Food Science; Biocatalysis; Microbiology

Target groups

Research

Type of publication

Contributed volume

Available

2011. XII, 666 p. 204 illus., 79 in color. (Food Engineering Series) Hardcover

169,95 €

ISBN 978-1-4419-7471-6

WOLEDs and Organic Photovoltaics

Recent Advances and Applications

The search for renewable energy sources and the efficient utilization of energy have been the most important research areas in modern science and technology. The design and development of materials that can contribute to light harvesting, solar energy conversion and photovoltaics are important areas of research. Also of great importance is the exploration of WOLEDs for solid state lighting that could lead to a more efficient utilization of energy. This monograph consists of a collection of contributions from prominent leading scientists in the area, initiated by the organization of the SRT Workshop on WOLEDs and Organic Photovoltaics at The University of Hong Kong in January 2009. This represents a unique and irresistibly attractive account and reference for researchers in the field of WOLEDs and organic photovoltaics both from academia and industry.

Features

- The search for renewable energy sources and the efficient utilization of energy have been the most important research areas in modern science and technology. The design and development of materials that can contribute to light harvesting, solar energy conversion and photovoltaics are important areas of research. Also of great importance is the exploration of WOLEDs for solid state lighting that could lead to a [...] 

Contents


Fields of interest

Organic Chemistry; Renewable and Green Energy; Laser Technology and Physics; Photonics; Optical and Electronic Materials; Physical Chemistry

Target groups

Research

Type of publication

Monograph

Available

2010. VII, 240 p. 80 illus., 15 in color. (Green Energy and Technology) Hardcover

99,95 €

ISBN 978-3-642-14934-4
This book constitutes the refereed proceedings of the 23rd Australasian Joint Conference on Artificial Intelligence, AI 2010, held in Adelaide, Australia, in December 2010. The 52 revised full papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in topical sections on knowledge representation and reasoning; data mining and knowledge discovery; machine learning; statistical learning; evolutionary computation; particle swarm optimization; intelligent agent; search and planning; natural language processing; and AI applications.

Features
This book constitutes the refereed proceedings of the 23rd Australasian Joint Conference on Artificial Intelligence, AI 2010, held in Adelaide, Australia, in December 2010. The 52 revised full papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in topical sections on knowledge representation and reasoning; data mining and knowledge discovery; machine learning; statistical learning; evolutionary computation; particle swarm optimization; intelligent agent; search and planning; natural language processing; and AI applications.

Fields of interest
Artificial Intelligence (incl. Robotics); Information Systems Applications (incl. Internet); Information Storage and Retrieval; Database Management; Data Mining and Knowledge Discovery; Computation by Abstract Devices

Target groups
Research

Type of publication
Proceedings

Available
2011. XVII, 528 p. (Lecture Notes in Artificial Intelligence, Vol. 6464) Softcover
70,00 €
ISBN 978-3-642-17431-5

L. Cao, University of Technology Sydney, NSW, Australia; Y. Feng, Chongqing University, China; J. Zhong, Chongqing University, China (Ed.)

Advanced Data Mining and Applications

This book constitutes the refereed proceedings of the 6th International Conference on Advanced Data Mining and Applications, ADMA 2010, held in Chongqing, China, in November 2010. 63 carefully reviewed regular papers and 55 revised short papers were presented. The papers are organized in topical sections on data mining foundations; data mining in specific areas; data mining methodologies and processes; and data mining applications and systems.

Features
This book constitutes the refereed proceedings of the 6th International Conference on Advanced Data Mining and Applications, ADMA 2010, held in Chongqing, China, in November 2010. 63 carefully reviewed regular papers and 55 revised short papers were presented. The papers are organized in topical sections on data mining foundations; data mining in specific areas; data mining methodologies and processes; and data mining applications and systems.

Fields of interest
Artificial Intelligence (incl. Robotics); Information Systems Applications (incl. Internet); Information Storage and Retrieval; Database Management; Data Mining and Knowledge Discovery; Computer Communication Networks

Target groups
Research

Type of publication
Proceedings

Available
2010. XIII, 628 p. (Lecture Notes in Artificial Intelligence, Vol. 6440) Softcover
79,00 €
ISBN 978-3-642-17315-8

L. Cao, University of Technology Sydney, NSW, Australia; Y. Feng, Chongqing University, China; J. Zhong, Chongqing University, China (Ed.)

Advanced Data Mining and Applications
6th International Conference, ADMA 2010, Chongqing, China, November 19–21, 2010, Proceedings, Part II

This book constitutes the refereed proceedings of the 6th International Conference on Advanced Data Mining and Applications, ADMA 2010, held in Chongqing, China, in November 2010. 63 carefully reviewed regular papers and 55 revised short papers were presented. The papers are organized in topical sections on data mining foundations; data mining in specific areas; data mining methodologies and processes; and data mining applications and systems.

Features
This book constitutes the refereed proceedings of the 6th International Conference on Advanced Data Mining and Applications, ADMA 2010, held in Chongqing, China, in November 2010. 63 carefully reviewed regular papers and 55 revised short papers were presented. The papers are organized in topical sections on data mining foundations; data mining in specific areas; data mining methodologies and processes; and data mining applications and systems.

Fields of interest
Artificial Intelligence (incl. Robotics); Information Systems Applications (incl. Internet); Information Storage and Retrieval; Database Management; Data Mining and Knowledge Discovery; Computer Communication Networks

Target groups
Research

Type of publication
Proceedings

Available
70,00 €
ISBN 978-3-642-17312-7
Advances in Cryptology - ASIACRYPT 2010

This book constitutes the refereed proceedings of the 16th International Conference on the Theory and Application of Cryptology and Information Security, ASIACRYPT 2010, held in Singapore, in December 2010. The 35 revised full papers presented were carefully reviewed and selected from 216 submissions. The papers are organized in topical sections on hash attacks, symmetric-key cryptosystems, block and stream ciphers, protocols, key exchange, foundation, zero-knowledge, lattice-based cryptography, secure communication and computation, models, notions, and assumptions, and public-key encryption.

Features
This book constitutes the refereed proceedings of the 16th International Conference on the Theory and Application of Cryptology and Information Security, ASIACRYPT 2010, held in Singapore, in December 2010. The 35 revised full papers presented were carefully reviewed and selected from 216 submissions. The papers are organized in topical sections on hash attacks, symmetric-key cryptosystems, block and stream...[...]

Fields of interest
Data Encryption; Algorithm Analysis and Problem Complexity; Management of Computing and Information Systems; Discrete Mathematics in Computer Science; Systems and Data Security; Applications of Mathematics

Target groups
Research

Type of publication
Proceedings

Available
2010. XIV, 634 p. (Security and Cryptology, Vol. 6477) Softcover
79.00 €
ISBN 978-3-642-17372-1

Advances in Software Engineering

This book constitutes the refereed proceedings of the International Conference on Advanced Software Engineering and Its Applications, ASEA 2010, held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 40 full papers presented were carefully reviewed and selected from 175 submissions. The papers deal with ideas, problems and solutions relating to the multifaceted aspects of software engineering, including its links to computational sciences, mathematics and information technology.

Features
This book constitutes the refereed proceedings of the International Conference on Advanced Software Engineering and Its Applications, ASEA 2010, held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 40 full papers presented were carefully reviewed and selected from 175 submissions. The papers deal with ideas, problems and solutions relating to the multifaceted aspects of software engineering, including its links to computational sciences, mathematics and information technology...

Fields of interest
Software Engineering; Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet); Computer Communication Networks; Programming Techniques; Software Engineering / Programming and Operating Systems

Target groups
Research

Type of publication
Proceedings

Available
64.00 €
ISBN 978-3-642-17577-0

Advances in Visual Computing

The three volume set LNCS 6453, LNCS 6454, and LNCS 6455 constitutes the refereed proceedings of the 6th International Symposium on Visual Computing, ISVC 2010, held in Las Vegas, NV, USA, in November/December 2010. The 93 revised full papers and 73 poster papers presented together with 44 full and 6 poster papers of 7 special tracks were carefully reviewed and selected from more than 300 submissions. The papers of part I (LNCS 6453) are organized in computational bioimaging, computer graphics, behavior detection and modeling, unconstrained biometrics: advances and trends, 3D mapping, modeling and surface reconstruction, and virtual reality. Part II (LNCS 6454) comprises topics such as calibration, pose estimation, and reconstruction, segmentation, stereo, registration, medical imaging, low cost virtual reality: expanding horizons, best practices in teaching visual computing, applications, and...[...]

Features
The three volume set LNCS 6453, LNCS 6454, and LNCS 6455 constitutes the refereed proceedings of the 6th International Symposium on Visual Computing, ISVC 2010, held in Las Vegas, NV, USA, in November/December 2010. The 93 revised full papers and 73 poster papers presented together with 44 full and 6 poster papers of 7 special tracks were carefully reviewed and selected from more than 300 submissions. The...[...]

Fields of interest
Pattern Recognition; Computational Biology / Bioinformatics; Computer Graphics; Computer Imaging, Vision, Pattern Recognition and Graphics; Image Processing and Computer Vision; User Interfaces and Human Computer Interaction

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
79.00 €
ISBN 978-3-642-17276-2
Advances in Visual Computing

The three volume set LNCS 6453, LNCS 6454, and LNCS 6455 constitutes the refereed proceedings of the 6th International Symposium on Visual Computing, ISVC 2010, held in Las Vegas, NV, USA, in November/December 2010. The 93 revised full papers and 73 poster papers presented together with 44 full and 6 poster papers of 7 special tracks were carefully reviewed and selected from more than 300 submissions. The papers of part I (LNCS 6453) are organized in computational bioimaging, computer graphics, behavior detection and modeling, unconstrained biometrics: advances and trends, 3D mapping, modeling and surface reconstruction, and virtual reality. Part II (LNCS 6454) comprises topics such as calibration, pose estimation, and reconstruction, segmentation, stereo, registration, medical imaging, low cost virtual reality: expanding horizons, best practices in teaching visual computing, applications, and [...] Features

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Fields of interest
Pattern Recognition; Computational Biology / Bioinformatics; Computer Graphics; Computer Imaging, Vision, Pattern Recognition and Graphics; Image Processing and Computer Vision; User Interfaces and Human Computer Interaction

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
87.00 € ISBN 978-3-642-17288-5

Advances in Web-Based Learning - ICWL 2010
9th International Conference, Shanghai, China, December 8-10, 2010, Proceedings

This book constitutes the refereed proceedings of the 9th International Conference on Web-Based Learning, ICWL 2010, held in Shanghai, China, in December 2010. The 36 revised full papers and 8 short papers presented were carefully reviewed and selected from 192 submissions. They deal with topics such as e-learning platforms and tools, technology enhanced learning, web-based learning for oriental languages, mobile/situated e-learning, learning resource deployment, organization and management, design, model and framework of e-learning systems, e-learning metadata and standards, collaborative learning and game-based learning, as well as practice and experience sharing and pedagogical Issues.

Features

Fields of interest
Computers and Education; Artificial Intelligence (incl. Robotics); User Interfaces and Human Computer Interaction; Computers and Society; Multimedia Information Systems; Personal Computing

Target groups
Research

Type of publication
Proceedings

Available
62.00 € ISBN 978-3-642-17406-3
This book constitutes the thoroughly refereed post-conference proceedings of the 6th International Workshop on Algorithms for Sensor Systems, Wireless Ad-Hoc Networks, and Autonomous Mobile Entities, ALGOSENSORS 2010, held in Bordeaux, France, in July 2010. The 15 full papers and two brief announcements were carefully reviewed and selected from 31 submissions. The workshop aimed at bringing together research contributions related to diverse algorithmic and complexity-theoretic aspects of wireless sensor networks. In 2010 the focus was extended to comprise also contributions about related types of networks such as ad hoc wireless networks, mobile networks, radio networks and distributed systems of robots.

Features
This book constitutes the thoroughly refereed post-conference proceedings of the 6th International Workshop on Algorithms for Sensor Systems, Wireless Ad-Hoc Networks, and Autonomous Mobile Entities, ALGOSENSORS 2010, held in Bordeaux, France, in July 2010. The 15 full papers and two brief announcements were carefully reviewed and selected from 31 submissions. The workshop aimed at bringing together research contributions about related types of networks such as ad hoc wireless networks, mobile networks, radio networks and distributed systems of robots.

Fields of interest
Algorithm Analysis and Problem Complexity; System Performance and Evaluation; Computation by Abstract Devices; Software Engineering; Computer Communication Networks; Special Purpose and Application-Based Systems

Target groups
Research

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-16987-8

Architecting Dependable Systems

As software systems become increasingly ubiquitous, issues of dependability become ever more crucial. Given that solutions to these issues must be considered from the very beginning of the design process, it is clear that dependability and security have to be addressed at the architectural level. This book, as well as its six predecessors, was born of an effort to bring together the research communities of software architectures, dependability, and security. This state-of-the-art survey contains expanded, peer-reviewed papers based on selected contributions from the Workshop on Architecting Dependable Systems (WADS 2009), held at the International Conference on Dependable Systems and Networks (DSN 2009), as well as a number of invited papers written by renowned experts in the area. The 13 papers are organized in topical sections on: mobile and ubiquitous systems, architecting systems, fault management, and experience and vision.

Features
As software systems become increasingly ubiquitous, issues of dependability become ever more crucial. Given that solutions to these issues must be considered from the very beginning of the design process, it is clear that dependability and security have to be addressed at the architectural level. This book, as well as its six predecessors, was born of an effort to bring together the research communities of [...]
Bioinspired Computation in Combinatorial Optimization

Algorithms and Their Computational Complexity

Bioinspired computation methods such as evolutionary algorithms and ant colony optimization are being applied successfully to complex engineering problems and to problems from combinatorial optimization, and with this comes the requirement to more fully understand the computational complexity of these search heuristics. This is the first textbook covering the most important results achieved in this area. The authors study the computational complexity of bioinspired computation and show how runtime behavior can be analyzed in a rigorous way using some of the best-known combinatorial optimization problems -- minimum spanning trees, shortest paths, maximum matching, covering and scheduling problems. A feature of the book is the separate treatment of single- and multiobjective problems, the latter a domain where the development of the underlying theory seems to be lagging practical successes. This book will be very valuable for teaching courses on bioinspired computation and combinatorial optimization. [...]
Computational Vision and Medical Image Processing

Recent Trends

This book contains extended versions of papers presented at the international Conference VIPIMAGE 2009 – ECCOMAS Thematic Conference on Computational Vision and Medical Image, that was held at Faculdade de Engenharia da Universidade do Porto, Portugal, from 14th to 16th of October 2009. This conference was the second ECCOMAS thematic conference on computational vision and medical image processing. It covered topics related to image processing and analysis, medical imaging and computational modeling and simulation, considering their multidisciplinary nature. The book collects the state-of-the-art research, methods and new trends on the subject of computational vision and medical image processing contributing to the development of these knowledge areas.

Features
This book contains extended versions of papers presented at the international Conference VIPIMAGE 2009 – ECCOMAS Thematic Conference on Computational Vision and Medical Image, that was held at Faculdade de Engenharia da Universidade do Porto, Portugal, from 14th to 16th of October 2009. This conference was the second ECCOMAS thematic conference on computational vision and medical image processing. It covered [...] 

Contents
Preface - Automatic Segmentation of the Optic Radiation Using DTI in Healthy Subjects and Patients with Glaucoma, by Ahmed El-Rafei, Tobias Engelhorn, Simone Waertges, Arnd Doerfler, Joachim Hornegger, Georg Michelson. - Real Time Colour Based Player Tracking in Indoor Sports, by Catarina B. Santiago, Armando Sousa, Luis Paulo Reis, Maria Luísa Estriga - Visualization of the Dynamics of the Female Pelvic Floor Reflex and Steady State Function, by Christos E. Constantiniou, Qiyu Peng, Sadao Omata - Population exposure and impact assessment - Benefits of modeling urban land use in very high [...] 

Fields of interest
Computer Imaging, Vision, Pattern Recognition and Graphics; Imaging / Radiology; Appl. Mathematics / Computational Methods of Engineering; Signal, Image and Speech Processing; Biomedical Engineering

Target groups
Research

Type of publication
Contributed volume

Available

189,95 €

Cryptology and Network Security

9th International Conference, CANS 2010, Kuala Lumpur, Malaysia, December 12-14, 2010, Proceedings

This book constitutes the refereed proceedings of the 9th International Conference on Cryptology and Network Security, CANS 2010, held in Kuala Lumpur, Malaysia, in December 2010. The 21 revised full papers, presented together with abstracts of 2 invited talks, were carefully reviewed and selected from 64 submissions. The papers are organized in topical sections on block ciphers, wireless network security, hash functions, public key cryptography, secure mechanisms, cryptographic protocols, and anonymous credentials.

Features
This book constitutes the refereed proceedings of the 9th International Conference on Cryptology and Network Security, CANS 2010, held in Kuala Lumpur, Malaysia, in December 2010. The 21 revised full papers, presented together with abstracts of 2 invited talks, were carefully reviewed and selected from 64 submissions. The papers are organized in topical sections on block ciphers, wireless network security, [...] 

Fields of interest
Data Encryption; Computer Communication Networks; Discrete Mathematics in Computer Science; Coding and Information Theory; Data Structures, Cryptology and Information Theory; Symbolic and Algebraic Manipulation

Target groups
Research

Type of publication
Proceedings

Available

54,00 €
ISBN 978-3-642-17618-0

Culture and Computing

Computing and Communication for Crosscultural Interaction

In the light of upcoming global issues, concerning population, energy, the environment, and food, information and communication technologies are required to overcome difficulties in communication among cultures. In this context, the First International Conference on Culture and Computing, which was held in Kyoto, Japan, in February 2010, was conceived as a collection of symposia, panels, workshops, exhibitions, and guided tours intended to share issues, activities, and research results regarding culture and computing. This volume includes 17 invited and selected papers dealing with state-of-the-art topics in culturally situated agents, intercultural collaboration and support systems, culture and computing for art and heritage, as well as culture and computing within regional communities.

Features
In the light of upcoming global issues, concerning population, energy, the environment, and food, information and communication technologies are required to overcome difficulties in communication among cultures. In this context, the First International Conference on Culture and Computing, which was held in Kyoto, Japan, in February 2010, was conceived as a collection of symposia, panels, workshops, [...] 

Contents

Fields of interest
Information Systems Applications (incl.Internet); Information Storage and Retrieval; User Interfaces and Human Computer Interaction; Multimedia Information Systems; Language Translation and Linguistics; Computer Appl. in Arts and Humanities

Target groups
Research

Type of publication
Contributed volume

Available

46,00 €
ISBN 978-3-642-17183-3
Current Trends in Web Engineering, ICWE 2010 Workshops

This book constitutes the thoroughly refereed post-conference proceedings of the workshops held at the 10th International Conference on Web Engineering, ICWE 2010, in Vienna, Austria, in July 2010. The 60 revised full papers presented were carefully reviewed and selected from over 100 submissions made to 9 international workshops and held in cooperation with the ICWE 2010 main conference. Those 9 workshops were selected from 16 proposals and encompassed: MDWE 2010, the 6th model-driven Web engineering workshop; QWE 2010, the first international workshop on quality in Web engineering; SWIM 2010, the second international workshop on semantic Web information management; SWEng 2010, the first international workshop on service Web engineering; ESW 2010, the first workshop on engineering osa and the Web; ComposableWeb 2010, the second international workshop on lightweight composition on the Web; EC Web 2010, the first international workshop on enterprise crowdsourcing; TouchTheWeb 2010, the first [...] Features

This book constitutes the thoroughly refereed post-conference proceedings of the workshops held at the 10th International Conference on Web Engineering, ICWE 2010, in Vienna, Austria, in July 2010. The 60 revised full papers presented were carefully reviewed and selected from over 100 submissions made to 9 international workshops and held in cooperation with the ICWE 2010 main conference. Those 9 workshops [...] Features

Fields of interest

Information Systems Applications (incl.Internet); Information Storage and Retrieval; Computer Communication Networks; Information Systems and Communication Service; Software Engineering; Management of Computing and Information Systems

Target groups

Professional/practitioner

Type of publication

Proceedings

Available


79,00 €

ISBN 978-3-642-16984-7

Database Theory and Application, Bio-Science and Bio-Technology


This book constitutes the refereed proceedings of the International Conference on Database Theory and Application, DTA 2010, and the International Conference on Bio-Science and Bio-Technology, BSBT 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 40 full papers presented were carefully reviewed and selected from 175 submissions. The papers are focused on the various aspects of advances in Bio-Science and Bio-Technology with Computational Sciences, Mathematics and Information Technology. Features

This book constitutes the refereed proceedings of the International Conference on Database Theory and Application, DTA 2010, and the International Conference on Bio-Science and Bio-Technology, BSBT 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 40 full papers presented were carefully reviewed and selected from 175 [...] Fields of interest

Simulation and Modeling; Database Management; Artificial Intelligence (incl. Robotics); Computation by Abstract Devices; Algorithm Analysis and Problem Complexity; Mathematics of Computing

Target groups

Research

Type of publication

Proceedings

Available


64,00 €

ISBN 978-3-642-17621-0

Decision and Game Theory for Security

First International Conference, GameSec 2010, Berlin, Germany, November 22-23, 2010. Proceedings

This book constitutes the refereed proceedings of the First International Conference on Decision and Game Theory for Security, GameSec 2010, held in Berlin, Germany, in November 2010. The 12 revised full papers and 6 revised short papers presented were carefully reviewed and selected from numerous submissions and focus on analytical models based on game, information, communication, optimization, decision, and control theories that are applied to diverse security topics. The papers are organized in topical sections on security investments and planning, privacy and anonymity, adversarial and robust control, network security and botnets, authorization and authentication, as well as theory and algorithms for security. Features

This book constitutes the refereed proceedings of the First International Conference on Decision and Game Theory for Security, GameSec 2010, held in Berlin, Germany, in November 2010. The 12 revised full papers and 6 revised short papers presented were carefully reviewed and selected from numerous submissions and focus on analytical models based on game, information, communication, optimization, decision, and [...] Fields of interest

Data Encryption; Computer Communication Networks; Systems and Data Security; Algorithm Analysis and Problem Complexity; Management of Computing and Information Systems; Game Theory, Economics, Social and Behav. Sciences

Target groups

Research

Type of publication

Proceedings

Available


46,00 €

ISBN 978-3-642-17196-3
Efficient Secure Two-Party Protocols

The authors present a comprehensive study of efficient protocols and techniques for secure two-party computation – both general constructions that can be used to securely compute any functionality, and protocols for specific problems of interest. The book focuses on techniques for constructing efficient protocols and proving them secure. In addition, the authors study different definitional paradigms and compare the efficiency of protocols achieved under these different definitions. The book opens with a general introduction to secure computation and then presents definitions of security for a number of different adversary models and definitional paradigms. In the second part, the book shows how any functionality can be securely computed in an efficient way in the presence of semi-honest, malicious and covert adversaries. These general constructions provide a basis for understanding the feasibility of secure computation, and they are a good introduction to design paradigms and proof techniques for [...]
Encyclopedia of Machine Learning

Features
This comprehensive encyclopedia, in A-Z format, provides easy access to relevant information for those seeking entry into any aspect within the broad field of Machine Learning. Most of the several hundred entries in this pre-eminent work include useful literature references, providing the reader with a portal to more detailed information on any given topic. Topics for the "Encyclopedia of [...]"

Contents

Fields of interest
Artificial Intelligence (incl. Robotics); Computing Methodologies; Data Mining and Knowledge Discovery; Pattern Recognition; Statistics for Engineering; Physics, Computer Science, Chemistry and Earth Sciences

Target groups
Research

Type of publication
Encyclopedia

Available
2010. XXVI, 1032 p. 95 illus. in color. Hardcover

Experimental Methods for the Analysis of Optimization Algorithms

In operations research and computer science it is common practice to evaluate the performance of optimization algorithms on the basis of computational results, and the experimental approach should follow accepted principles that guarantee the reliability and reproducibility of results. However, computational experiments differ from those in other sciences, and the last decade has seen considerable methodological research devoted to understanding the particular features of such experiments and assessing the related statistical methods. This book consists of methodological contributions on different scenarios of experimental analysis. The first part overviews the main issues in the experimental analysis of algorithms, and discusses the experimental cycle of algorithm development; the second part treats the characterization by means of statistical distributions of algorithm performance in terms of solution quality, runtime and other measures; and the third part collects advanced methods from[...]

Features
In operations research and computer science it is common practice to evaluate the performance of optimization algorithms on the basis of computational results, and the experimental approach should follow accepted principles that guarantee the reliability and reproducibility of results. However, computational experiments differ from those in other sciences, and the last decade has seen[...]

Contents

Fields of interest
Probability and Statistics in Computer Science; Operations Research, Mathematical Programming; Algorithms; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences; Complexity

Target groups
Research

Type of publication
Monograph

Available
2010. XXII, 457 p. Hardcover
Data management has evolved over the years from being strictly associated with database systems, through active databases, to become a topic that has grown beyond the scope of a single field encompassing a large range of subjects, such as distributed systems, event-driven systems, and peer-to-peer and streaming systems. The present collection of works, which sheds light on various facets of data management, is dedicated to Prof. Alejandro Buchmann on the occasion of his 60th birthday. His scientific path looks back on more than thirty years of successful academic life and high-impact research. With this book we celebrate Prof. Buchmann’s vision and achievements.

Features
Data management has evolved over the years from being strictly associated with database systems, through active databases, to become a topic that has grown beyond the scope of a single field encompassing a large range of subjects, such as distributed systems, event-driven systems, and peer-to-peer and streaming systems. The present collection of works, which sheds light on various facets of data management, is [...]
Grid and Distributed Computing, Control and Automation

This book constitutes the refereed proceedings of the International Conference on Grid and Distributed Computing, GDC 2010, and the International Conference on Control and Automation, CA 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 40 full papers presented were carefully reviewed and selected from 198 submissions. The papers are focused on the various aspects of advances in both Grid and Distributed Computing as well as Control and Automation.

Features

This book constitutes the refereed proceedings of the International Conference on Grid and Distributed Computing, GDC 2010, and the International Conference on Control and Automation, CA 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 40 full papers presented were carefully reviewed and selected from 198 submissions. [...]
Inductive Databases and Constraint-Based Data Mining

This book presents inductive databases and constraint-based data mining, emerging research topics lying at the intersection of data mining and database research. The book provides an overview of the state-of-the-art in this novel research area. Of special interest are the recent methods for constraint-based mining of global models for prediction and clustering, the unification of pattern mining approaches through constraint programming, the clarification of the relationship between mining local patterns and global models, and the proposed integrative frameworks and approaches for inductive databases. On the application side, applications to practically relevant problems from bioinformatics are presented to attract additional attention from a wider audience. The primary audience consists of scientists and graduate students in computer science and bioinformatics. Potential readers are likely to attend conferences on databases, data mining/machine learning, and bioinformatics.

Features

None

Contents

Part 1 Introduction & Framework

- Twelve Years After: A Historical Perspective on Inductive Databases.
- A Data Mining Framework and Ontology
- Data Mining Query Languages, Mining Views, and Algebras
- The Assessment of Data Mining Results through Randomization
- Part 2 Constraint-based Mining Techniques
- Generalizing Item set Mining in a Constraint Programming Setting from Local Patterns to Classification Models
- Constrained Induction of Predictive Clustering Trees
- Constrained Clustering: An Overview
- Probabilistic Inductive Querying Using ProbLog
- Part 3 Inductive Databases

Fields of interest

Database Management; Data Mining and Knowledge Discovery; Artificial Intelligence (incl. Robotics); Computational Biology / Bioinformatics

Target groups

Research

Type of publication

Contribution volume

Available

2010. XVIII, 458 p. Hardcover

99.95 €

Information Retrieval Technology


This book constitutes the refereed proceedings of the 6th Asia Information Retrieval Symposium, AIRS 2010, held in Taipei, Taiwan, in December 2010. The 26 revised full papers and 31 revised poster papers presented were carefully reviewed and selected from 120 submissions. All current aspects of information retrieval - in theory and practice - are addressed; the papers are organized in topical sections on information retrieval models, machine learning for information retrieval, user studies and evaluation, natural language processing for information retrieval, Web and question answering, and multimedia.

Features

This book constitutes the refereed proceedings of the 6th Asia Information Retrieval Symposium, AIRS 2010, held in Taipei, Taiwan, in December 2010. The 26 revised full papers and 31 revised poster papers presented were carefully reviewed and selected from 120 submissions. All current aspects of information retrieval - in theory and practice - are addressed; the papers are organized in topical sections.

Fields of interest

Information Storage and Retrieval; Information Systems Applications (incl.Internet); Algorithm Analysis and Problem Complexity; Data Structures; Data Storage Representation; Probability and Statistics in Computer Science

Target groups

Research

Type of publication

Proceedings

Available


79.00 €
ISBN 978-3-642-17186-4

Information Security and Cryptology

5th International Conference, Inscrypt 2009, Beijing, China, December 12-15, 2009. Revised Selected Papers

This book constitutes the thoroughly refereed postconference proceedings of the 4th International Conference on Information Security and Cryptology, Inscrypt 2009, held in Beijing, China, in December 2009. The 22 revised full papers and 10 short papers presented were carefully reviewed and selected from 147 submissions. The papers are organized in topical sections on cryptanalysis; signature and signature; key exchange; private computations; cipher design and analysis; public key cryptography; network and system security; hardware security; and web security.

Features

This book constitutes the thoroughly refereed postconference proceedings of the 4th International Conference on Information Security and Cryptology, Inscrypt 2009, held in Beijing, China, in December 2009. The 22 revised full papers and 10 short papers presented were carefully reviewed and selected from 147 submissions. The papers are organized in topical sections.

Fields of interest

Computer Communication Networks; Data Encryption; Management of Computing and Information Systems; Algorithm Analysis and Problem Complexity; Systems and Data Security; Computers and Society

Target groups

Research

Type of publication

Proceedings

Available


62.00 €
ISBN 978-3-642-16341-8
Information Systems Development

Asian Experiences

Information Systems Development (ISD) progresses rapidly, continually creating new challenges for the professionals involved. New concepts, approaches and techniques of systems development emerge constantly in this field. Progress in ISD comes from research as well as from practice. This conference will discuss issues pertaining to information systems development (ISD) in the inter-networked digital economy. Participants will include researchers, both experienced and novice, from industry and academia, as well as students and practitioners. Themes will include methods and approaches for ISD; ISD education; philosophical, ethical, and sociological aspects of ISD; as well as specialized tracks such as: distributed software development, ISD and knowledge management, ISD and electronic business/electronic government, ISD in public sector organizations, IOS.

Features

Information Systems Development: Asian Experiences, is the collected proceedings of the 18th International Conference on Information Systems Development: Asian Experiences–2009 Conference, held in Nanchang, China. It follows in the tradition of previous conferences in the series in exploring the connections between industry, research and education. These proceedings represent ongoing reflections within the [...] Contents


Database Management; Information Storage and Retrieval; Business Information Systems; Software Engineering / Programming and Operating Systems

Target groups

Research

Type of publication

Proceedings

Available

2011. 378 p. 106 illus, 68 in color. Hardcover

169.95 €


D. Wood, J Round Stones LLC, Fredericksburg, VA, USA (Ed.)

Linking Enterprise Data

Enterprise data is growing at a much faster rate than traditional technologies allow. New enterprise architectures combining existing technologies are desperately needed. This book suggests a way forward by applying new techniques of the World Wide Web to enterprise information systems. Linking Enterprise Data is an edited volume contributed by worldwide leaders in Semantic Web and Linked Data research, standards development and adoption. Linking enterprise data is the application of World Wide Web architecture principles to real-world information management issues faced by commercial, not-for profit and government enterprises. This book is divided into four sections: Benefits of applying Linked Data principles in enterprise settings, enterprise approval and support of Linked Data projects, specific Linked Data techniques and a number of real-world success stories from early enterprise adopters. Linking Enterprise Data targets professionals working as CTOs, CIOs, enterprise architects, project[...]

Features

Enterprise data is growing at a much faster rate than traditional technologies allow. New enterprise architectures combining existing technologies are desperately needed. This book suggests a way forward by applying new techniques of the World Wide Web to enterprise information systems. Linking Enterprise Data is an edited volume contributed by worldwide leaders in Semantic Web and Linked Data [...] Contents


Fields of interest

Information Systems Applications (incl.Internet); Business Information Systems; Information Storage and Retrieval; Management of Computing and Information Systems; Information Systems and Communication Service; User Interfaces and Human Computer Interaction

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available


99.95 €


S. Yekhanin, Microsoft Research, Mountain View, CA, USA

Locally Decodable Codes and Private Information Retrieval Schemes

Locally decodable codes (LDCs) are codes that simultaneously provide efficient random access retrieval and high noise resilience by allowing reliable reconstruction of an arbitrary bit of a message by looking at only a small number of randomly chosen codeword bits. Local decodability comes with a certain loss in terms of efficiency – specifically, locally decodable codes require longer codeword lengths than their classical counterparts. Private information retrieval (PIR) schemes are cryptographic protocols designed to safeguard the privacy of database users. They allow clients to retrieve records from public databases while completely hiding the identity of the retrieved records from database owners. In this book the author provides a fresh algebraic look at the theory of locally decodable codes and private information retrieval schemes, obtaining new families of each which have much better parameters than those of previously known constructions, and he also proves limitations of two server PIRs[...]

Features

Locally decodable codes (LDCs) are codes that simultaneously provide efficient random access retrieval and high noise resilience by allowing reliable reconstruction of an arbitrary bit of a message by looking at only a small number of randomly chosen codeword bits. Local decodability comes with a certain loss in terms of efficiency – specifically, locally decodable codes require longer codeword lengths than [...] Contents

Introduction. - Locally Decodable Codes via the the Point Removal Method. - Limitations of the Point Removal Method. - Private Information Retrieval-References. - Index

Fields of interest

Data Structures, Cryptology and Information Theory

Target groups

Research

Type of publication

Monograph

Available


79.95 €

ISBN 978-3-642-14357-1
Machine Learning for Vision-Based Motion Analysis

Theory and Techniques

Techniques of vision-based motion analysis aim to detect, track, identify, and generally understand the behavior of objects in image sequences. With the growth of video data in a wide range of applications from visual surveillance to human machine interfaces, the ability to automatically analyze and understand object motions from video footage is of increasing importance. Among the latest developments in this field is the application of statistical machine learning algorithms for object tracking, activity modeling, and recognition. Developed from expert contributions to the first and second International Workshop on Machine Learning for Vision-Based Motion Analysis, this important text/reference highlights the latest algorithms and systems for robust and effective vision-based motion understanding from a machine learning perspective. Highlighting the benefits of collaboration between the communities of object motion understanding and machine learning, the book discusses the most active frontiers of [...] Features

Techniques of vision-based motion analysis aim to detect, track, identify, and generally understand the behavior of objects in image sequences. With the growth of video data in a wide range of applications from visual surveillance to human machine interfaces, the ability to automatically analyze and understand object motions from video footage is of increasing importance. Among the latest developments [...] Contents


Image Processing and Computer Vision; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Proceedings

Available

81,00 € ISBN 978-3-642-16954-0

Middleware 2010. ACM/IFIP/USENIX

11th International Middleware Conference, Bangalore, India, November 29 - December 3, 2010. Proceedings

This book constitutes the proceedings of the 11th International Conference on Middleware, held in Bangalore, India, during November 29 - December 3, 2010. The 19 papers presented have been carefully reviewed and selected from 116 submissions. The papers are organized in topical sections on cloud computing; data management; publish-subscribe and multicast systems; social and location-aware middleware; reliability and legacy; trust and security; and transactional memory. Features

This book constitutes the proceedings of the 11th International Conference on Middleware, held in Bangalore, India, during November 29 - December 3, 2010. The 19 papers presented have been carefully reviewed and selected from 116 submissions. The papers are organized in topical sections on cloud computing; data management; publish-subscribe and multicast systems; social and location-aware middleware; reliability and legacy; trust and security; and transactional memory. Features

Fields of interest

Computer Communication Networks; Information Systems Applications (incl.Internet); Software Engineering; Information Storage and Retrieval; Management of Computing and Information Systems; Computers and Society

Target groups

Research

Type of publication

Proceedings

Available

81,00 € ISBN 978-3-642-16954-0

Motion in Games


This book constitutes the proceedings of the Second International Workshop on Motion in Games, held in Utrecht, The Netherlands, in November 2010. The 30 revised full papers presented together with 9 revised poster papers in this volume were carefully reviewed and selected. The papers are organized in topical sections on body simulation, learning movements, body control, motion planning, physically-based character control, crowds and formation, geometry, autonomous characters, navigation, motion synthesis, perception, real-time graphics, and posters.

Features

This book constitutes the proceedings of the Second International Workshop on Motion in Games, held in Utrecht, The Netherlands, in November 2010. The 30 revised full papers presented together with 9 revised poster papers in this volume were carefully reviewed and selected. The papers are organized in topical sections on body simulation, learning movements, body control, motion planning, physically-based [...] Features

Fields of interest

Computer Imaging, Vision, Pattern Recognition and Graphics; Information Systems Applications (incl.Internet); Artificial Intelligence (incl. Robotics); User Interfaces and Human Computer Interaction; Simulation and Modeling; Algorithm Analysis and Problem Complexity

Target groups

Research

Type of publication

Proceedings

Available

62,00 € ISBN 978-3-642-16957-1
Moving Objects Management
Models, Techniques and Applications

The continued advances in wireless communication and positioning technologies such as GPS have made new data management applications possible, such as location-based services (LBS) that store and manage the continuously changing positions of moving objects. "Moving Objects Management - Models, Techniques and Applications" focuses on moving objects management, from the location management perspective to the exploration of how the continuously changing locations affect the traditional database and data mining technology. Specifically, the book describes the topics of moving objects modeling and location updating, indexing and querying, clustering, location uncertainty and privacy issues, as well as their application to intelligent transportation systems. This book is intended for developers of database management systems and mobile applications, research scientists and advanced-level students in computer science and geography. Dr. Xiaofeng Meng is a professor at the School of Information, Renmin University of China.

Features
The continued advances in wireless communication and positioning technologies such as GPS have made new data management applications possible, such as location-based services (LBS) that store and manage the continuously changing positions of moving objects. "Moving Objects Management - Models, Techniques and Applications" focuses on moving objects management, from the location management perspective to the...

Contents

Fields of interest
Database Management; Data Mining and Knowledge Discovery; Information Systems and Communication Service; Geographical Information Systems / Cartography

Target groups
Research

Type of publication
Monograph

Available
2010. 300 p. 50 illus. Hardcover

139.95 €
ISBN 978-3-642-13198-1

On the Move to Meaningful Internet Systems, OTM 2010

The two-volume set of LNCS 6426/6427 constitutes the refereed proceedings of 3 conferated international conferences on CoopIS (Cooperative Information Systems), DOA (Distributed Objects and Applications) and ODBASE (Ontologies, Databases and Applications of Semantics). These conferences were held in October 2009 in Greece, in Hersonissos on the island of Crete. CoopIS is covering the applications of technologies in an enterprise context as workflow systems and knowledge management. DOA is covering the relevant infrastructure-enabling technologies and finally, ODBase is covering WEB semantics, XML databases and ontologies. The 83 revised full papers presented together with 3 keynote talks were carefully reviewed and selected from a total of 223 submissions. Corresponding to the OTM main conferences the papers are organized in topical sections on process models and management, modeling of cooperation, services computing, information processing and management, human-based cooperative systems, etc.

Features
The two-volume set of LNCS 6426/6427 constitutes the refereed proceedings of 3 conferated international conferences on CoopIS (Cooperative Information Systems), DOA (Distributed Objects and Applications) and ODBASE (Ontologies, Databases and Applications of Semantics). These conferences were held in October 2009 in Greece, in Hersonissos on the island of...

Fields of interest
Computer Communication Networks; Software Engineering; Information Systems Applications (incl.Internet); Artificial Intelligence (incl. Robotics); Algorithm Analysis and Problem Complexity; Management of Computing and Information Systems

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

87.00 €
ISBN 978-3-642-16933-5

Pairing-Based Cryptography - Pairing 2010
4th International Conference, Yamanaka Hot Spring, Japan, December 13-15, 2010, Proceedings

This book constitutes the refereed proceedings of the 4th International Conference on Pairing-Based Cryptography, Pairing 2010, held in Yamanaka Hot Spring, Japan, in December 2010. The 25 full papers presented were carefully reviewed and selected from 64 submissions. The contributions are organized in topical sections on: efficient software implementation; digital signatures; cryptographic protocols; key agreement; applications - code generation, time-released encryption, and cloud computing; point encoding and pairing-friendly curves; ID-based encryption schemes; and efficient hardware, FPGAs, and algorithms.

Features
This book constitutes the refereed proceedings of the 4th International Conference on Pairing-Based Cryptography, Pairing 2010, held in Yamanaka Hot Spring, Japan, in December 2010. The 25 full papers presented were carefully reviewed and selected from 64 submissions. The contributions are organized in topical sections on: efficient software implementation; digital signatures; cryptographic protocols; key agreement; applications - code generation, time-released encryption, and cloud computing; point encoding and pairing-friendly curves; ID-based encryption schemes; and efficient hardware, FPGAs, and algorithms.

Fields of interest
Data Encryption; Discrete Mathematics in Computer Science; Coding and Information Theory; Computer Communication Networks; Algorithm Analysis and Problem Complexity; Systems and Data Security

Target groups
Research

Type of publication
Proceedings

Available

62.00 €
ISBN 978-3-642-17454-4
Parameterized and Exact Computation

This book constitutes the refereed best selected papers of the 5th International Symposium on Parameterized and Exact Computation, IPEC 2010, held in Chennai, India, in December 2010. The 19 revised full papers presented were carefully reviewed and selected from 32 submissions. The topics addressed cover research in all aspects of parameterized and exact computation and complexity, including but not limited to new techniques for the design and analysis of parameterized and exact algorithms; parameterized complexity theory; relationship between parameterized complexity and traditional complexity classifications; applications of parameterized and exact computation; implementation issues of parameterized and exact algorithms; fixed-parameter approximation; fast approximation in exponential time; kernelization lower and upper bounds.

Features
This book constitutes the refereed best selected papers of the 5th International Symposium on Parameterized and Exact Computation, IPEC 2010, held in Chennai, India, in December 2010. The 19 revised full papers presented were carefully reviewed and selected from 32 submissions. The topics addressed cover research in all aspects of parameterized and exact computation and complexity, including but not limited to […]

Fields of interest
Algorithm Analysis and Problem Complexity; Algorithms; Discrete Mathematics in Computer Science; Theory of Computation; Symbolic and Algebraic Manipulation; Computation by Abstract Devices

Target groups
Research

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-17492-6

Performance Analysis and Optimization of Multi-Traffic on Communication Networks

Promptly growing demand for telecommunication services and information interchange has led to the fact that communication became one of the most dynamical branches of an infrastructure of a modern society. The book introduces to the bases of classical MDP theory; problems of a finding optimal ### in models are investigated and various problems of improvement of characteristics of traditional and multimedia wireless communication networks are considered together with both classical and new methods of theory MDP which allow defining optimal strategy of access in teletraffic systems. The book will be useful to specialists in the field of telecommunication systems and also to students and post-graduate students of corresponding specialties.

Features
Promptly growing demand for telecommunication services and information interchange has led to the fact that communication became one of the most dynamical branches of an infrastructure of a modern society. The book introduces to the bases of classical MDP theory; problems of a finding optimal ### in models are investigated and various problems of improvement of characteristics of traditional and multimedia […]

Contents

Fields of interest
System Performance and Evaluation; Electrical Engineering; Probability Theory and Stochastic Processes; Operation Research / Decision Theory; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences

Target groups
Graduate

Type of publication
Monograph

Available
2010. XIV, 250 p. 70 illus. Hardcover
79,95 €
ISBN 978-3-642-15457-7

Policies and Research in Identity Management

This book constitutes the refereed proceedings of the Second IFIP WG 11.6 Working Conference on Policies and Research in Identity Management, IDMAN 2010, held in Oslo, Norway, in November 2010. The 10 thoroughly refereed papers presented were selected from numerous submissions. They focus on identity management in general and surveillance and monitoring in particular.

Features
This book constitutes the refereed proceedings of the Second IFIP WG 11.6 Working Conference on Policies and Research in Identity Management, IDMAN 2010, held in Oslo, Norway, in November 2010. The 10 thoroughly refereed papers presented were selected from numerous submissions. They focus on identity management in general and surveillance and monitoring in particular.

Fields of interest
Data Structures, Cryptology and Information Theory; Biometrics; Management of Computing and Information Systems

Target groups
Research

Type of publication
Proceedings

Available
2010. X, 149 p. ([IFIP Advances in Information and Communication Technology, Vol. 343]) Hardcover
78,00 €
ISBN 978-3-642-17302-8
Practical Signcryption

In today’s world, data must be sent around the world cheaply and securely, and that requires origin authentication, integrity protection, and confidentiality – the recipient of a message should be able to ascertain who sent the message, be sure that the message has not been changed en route, and be sure that the data arrives without having been read by anyone else. The second editor invented signcryption, an area of cryptography that studies systems that simultaneously provide origin authentication, integrity protection and confidentiality for data. Signcryption schemes combine the features of digital signature schemes with those of public-key encryption schemes and aim to provide security guarantees in a way that is provably correct and significantly less computationally expensive than the “encrypt-then-sign” method most commonly adopted in public-key cryptography. This is the first comprehensive book on signcryption, and brings together leading authors from the field of cryptography in a[...]

Contents


Fields of interest

Data Structures, Cryptology and Information Theory; Information Systems and Communication Service

Target groups

Research

Type of publication

Monograph

Available


79,95 €
ISBN 978-3-540-89409-4

Practical Studies in E-Government

Best Practices from Around the World

Information and communication technology (ICT) is permeating all aspects of service management; in the public sector, ICT is improving the capability of government agencies to provide a wide array of innovative services that benefit citizens. E-Government is emerging as a multidisciplinary field of research based initially on empirical insights from practice. Efforts to theoretically anchor the field have opened perspectives from multiple research domains, as demonstrated in Practical Studies in E-Government. In this volume, the editors and contributors consider the evolution of the e-government field from both practical and research perspectives. Featuring in-depth case studies of initiatives in eight countries, the book deals with such technology-oriented issues as interoperability, prototyping, data quality, and advanced interfaces, and management-oriented issues as e-procurement, e-identification, election results verification, and information privacy. The book features best practices, tools for[...]

Features

Information and communication technology (ICT) is permeating all aspects of service management; in the public sector, ICT is improving the capability of government agencies to provide a wide array of innovative services that benefit citizens. E-Government is emerging as a multidisciplinary field of research based initially on empirical insights from practice. Efforts to theoretically anchor the field have opened perspectives from multiple research domains, as demonstrated in Practical Studies in E-Government. In this volume, the editors and contributors consider the evolution of the e-government field from both practical and research perspectives. Featuring in-depth case studies of initiatives in eight countries, the book deals with such technology-oriented issues as interoperability, prototyping, data quality, and advanced interfaces, and management-oriented issues as e-procurement, e-identification, election results verification, and information privacy. The book features best practices, tools for[...]

Fields of interest

Programming Languages, Compilers, Interpreters; Software Engineering; Logics and Meanings of Programs; Systems and Data Security; Programming Techniques; Mathematical Logic and Formal Languages

Target groups

Professional/practitioner

Type of publication

Proceedings

Available


62,00 €
ISBN 978-3-642-17163-5
Progress in Cryptology - INDOCRYPT 2010
11th International Conference on Cryptology in India, Hyderabad, India, December 12-15, 2010, Proceedings

This book constitutes the refereed proceedings of the 11th International Conference on Cryptology in India, INDOCRYPT 2010, held in Hyderabad, India, in December 2010. The 22 revised full papers were carefully reviewed and selected from 72 submissions. The papers are organized in topical sections on security of RSA and multivariate schemes; security analysis, pseudorandom permutations and applications; hash functions; attacks on block ciphers and stream ciphers; fast cryptographic computation; cryptanalysis of AES; and efficient implementation.

Features
This book constitutes the refereed proceedings of the 11th International Conference on Cryptology in India, INDOCRYPT 2010, held in Hyderabad, India, in December 2010. The 22 revised full papers were carefully reviewed and selected from 72 submissions. The papers are organized in topical sections on security of RSA and multivariate schemes; security analysis, pseudorandom permutations and applications; hash [...] Features

Fields of interest
Data Encryption; Computer Communication Networks; Algorithm Analysis and Problem Complexity; Management of Computing and Information Systems; Systems and Data Security; Discrete Mathematics in Computer Science

Target groups
Research

Type of publication
Proceedings

Qualitative Spatial Abstraction in Reinforcement Learning

Reinforcement learning has developed as a successful learning approach for domains that are not fully understood and that are too complex to be described in closed form. However, reinforcement learning does not scale well to large and continuous problems. Furthermore, acquired knowledge specific to the learned task, and transfer of knowledge to new tasks is crucial. In this book the author investigates whether deficiencies of reinforcement learning can be overcome by suitable abstraction methods. He discusses various forms of spatial abstraction, in particular qualitative abstraction, a form of representing knowledge that has been thoroughly investigated and successfully applied in spatial cognition research. With his approach, he exploits spatial structures and structural similarity to support the learning process by abstracting from less important features and stressing the essential ones. The author demonstrates his learning approach and the transferability of knowledge by having his system learn [...] Features

Contents

Fields of interest
Artificial Intelligence (incl. Robotics); Control, Robotics, Mechatronics

Target groups
Research

Type of publication
Monograph

Radio Frequency Identification: Security and Privacy Issues

6th International Workshop RFIDSec 2010, Istanbul, Turkey, June 8-9, 2010, Revised Selected Papers

This book constitutes the refereed proceedings of the 6th International Workshop Radio Frequency Identification: Security and Privacy Issues, RFIDSec 2010, held in Istanbul, Turkey, in June 2010. The 17 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 47 submissions. The papers focus on approaches to solve security and data protection issues in advanced contactless technologies like RFID. Topics addressed are new applications for secure RFID systems, data protection and privacy-enhancing techniques for RFID, cryptographic protocols for RFID, integration of secure RFID systems, resource-efficient implementation of cryptography, attacks on RFID systems, and RFID security hardware.

Features
This book constitutes the refereed proceedings of the 6th International Workshop Radio Frequency Identification: Security and Privacy Issues, RFIDSec 2010, held in Istanbul, Turkey, in June 2010. The 17 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 47 submissions. The papers focus on approaches to solve security and data protection issues in [...] Features

Fields of interest
Computer Communication Networks; Data Encryption; Systems and Data Security; Algorithm Analysis and Problem Complexity; Management of Computing and Information Systems; Special Purpose and Application-Based Systems

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

2010. XVI, 174 p. (Cognitive Technologies) Hardcover

79,95 €
ISBN 978-3-642-16589-4
Reliable and Autonomous Computational Science
International Conference, RACS 2010, Atlanta, GA, USA, Octo-
ber 27-30, 2010

Increasing size and complexity of software and hard-
ware systems makes it harder to ensure their reli-
ability. At the same time, the issues of autonomous
computing become more critical as we more and
more rely on software systems in our daily life.
Such complexity is getting even more critical with
the ubiquitous computing of embedded devices
and other pervasive systems. These trends ask for
features and tools for developing reliable and
autonomous software which can support software
engineers in their efforts. This book summarizes the
state of the art of research in the diverse fields con-
cerned, including novel designs, case studies and
experimental as well as theoretical results.

Features
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Contents
Part I Embedded & Computer Systems.- Part II Net-
work Computing & Security.- Part III Applications.-
Part IV Multimedia.

Fields of interest
Software Engineering

Target groups
Research

Type of publication
Proceedings

Available

89,95 €
ISBN 978-3-0348-0030-3

Research and Development in Intelligent Systems XVII
Incorporating Applications and Innovations in Intelligent Sys-
tems XVII Proceedings of AI-2010, The Thirtieth SGAI Interna-
tional Conference on Innovative Techniques and Applications
of Artificial Intelligence

The papers in this volume are the refereed papers
presented at AI-2010, the Thirtieth SGAI Interna-
tional Conference on Innovative Techniques and
Applications of Artificial Intelligence, held in Cam-
pbridge in December 2010 in both the technical and
the application streams. They present new and inno-
active developments and applications, divided into
technical stream sections on Intelligent Agents;
Knowledge Discovery and Data Mining; Evolution-
ary Algorithms, Bayesian Networks and Model-
Based Diagnosis; Machine Learning, Planning and
Scheduling, followed by application stream sections
on Applications of Machine Learning I and II; AI
for Scheduling and AI in Action. The volume also
includes the text of short papers presented as posters
at the conference. This is the twenty-seventh volume
in the Research and Development in Intelligent Sys-
tems series, which also incorporates the eighteenth
volume in the Applications and Innovations in Intel-
ligent Systems series. These series are essential read-
ing for [...] 

Features
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Knowledge [...] 

Contents
Research and Development in Intelligent Systems
XXVII Best Technical Paper.- Intelligent Agents.-
Knowledge Discovery and Data Mining.- Planning
and Scheduling.- Machine Learning.- Evolutionary
Algorithms, Bayesian Networks and Model-Based
Diagnosis.- Short Papers. Application and Innova-
tions in Intelligent Systems XVIII Best Application
Paper.- Applications of Machine Learning I.- Ap-
llications of Machine Learning II.- AI for Scheduling-
AI in Action.- Short Papers.

Fields of interest
Artificial Intelligence (incl. Robotics); Data Mining
and Knowledge Discovery

Target groups
Research

Type of publication
Proceedings

Available

2011. XV, 494 p. 146 illus. Softcover
149,95 €

Run-time Models for Self-managing Systems and Applications

This edited volume focuses on the adoption of run-
time models for the design and management of auto-
nomic systems. Traditionally, performance models
have a central role in the design of computer sys-
tems. Models are used at design-time to support
the capacity planning of the physical infrastructure
and to analyze the effects and trade-offs of differ-
ent architectural choices. Models may also be used
at run-time to assess the compliance of the running
system with respect to design-time models, to mea-
sure the real system performance parameters to fill
the gap between design and run-time. Models at
run-time can also assess the compliance of service
level agreements and trigger autonomic systems re-
configuration. Run-time models are receiving great
interest, since, e.g., power management of CPUs and
resource management in virtualized systems can be
actuated at very fine grain time scales. In such situa-
tions, traditional performance techniques evaluating
the systems steady state may provide only a rough[...] 

Features
The papers in this volume are the refereed papers
presented at AI-2010, the Thirtieth SGAI Interna-
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ing for [...] 

Contents
1 Stochastic Analysis and Optimization of Multi-
server Systems.- 2 On the selection of models for
runtime prediction of system resources.- 3 Estimat-
ing Model Parameters of Adaptive Software Systems
in Real-Time.- 4 A Control-Theoretic Approach for
the Combined Management of Quality-of-Service
and Energy in Service Centers.- 5 The emergence of
load balancing in distributed systems: the SelfLet
approach.- 6 Run time models in adaptive service
infrastructures.- 7 On the Modeling and Manage-
ment of Cloud Data Analytics

Fields of interest
Management of Computing and Information Sys-
tems; Models and Principles; Simulation and Model-
ing

Target groups
Research

Type of publication
Collection of essays

Available

2010. IX, 185 p. (Autonomic Systems) Softcover
49,95 €
ISBN 978-3-0346-0432-1
Safeguards in a World of Ambient Intelligence

Copy the following link for free access to the first chapter of this title: http://www.springerlink.com/content/j23468h304310755/fulltext.pdf This book is a warning. It aims to warn policy-makers, industry, academia, civil society organisations, the media and the public about the threats and vulnerabilities facing our privacy, identity, trust, security and inclusion in the rapidly approaching world of ambient intelligence (AmI). In the near future, every manufactured product – our clothes, money, appliances, the paint on our walls, the carpets on our floors, our cars, everything – will be embedded with intelligence, networks of tiny sensors and actuators, which some have termed “smart dust”. The AmI world is not far off. We already have surveillance systems, biometrics, personal communicators, machine learning and more. AmI will provide personalised services – and know more about us – on a scale dwarfing anything hitherto available. In the AmI vision, ubiquitous computing, communications and…

Features
Copy the following link for free access to the first chapter of this title: http://www.springerlink.com/content/j23468h304310755/fulltext.pdf This book is a warning. It aims to warn policy-makers, industry, academia, civil society organisations, the media and the public about the threats and vulnerabilities facing our privacy, identity, trust, security and…

Contents

Fields of interest
Information Systems Applications (incl.Internet); Computers and Society; Legal Aspects of Computing; R & D / Technology Policy; Personal Computing

Target groups
Research

Type of publication
Proceedings

Available
2010. XII, 259 p. (Lecture Notes in Artificial Intelligence, Vol. 6466) Softcover
46,00 €
ISBN 978-3-642-17527-5

Sanskrit Computational Linguistics

This volume constitutes the refereed proceedings of the 4th International Symposium on Sanskrit Computational Linguistics, held in New Delhi, India, in December 2010. The 18 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers can be categorized under following broad areas such as phonology and speech technology; morphology and shallow parsing; syntax, semantics and parsing; lexical resources, annotation and search; machine translation and ambiguity resolution.

Features
This volume constitutes the refereed proceedings of the 4th International Symposium on Sanskrit Computational Linguistics, held in New Delhi, India, in December 2010. The 18 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers can be categorized under following broad areas such as phonology and speech technology; morphology and shallow parsing; syntax, semantics and parsing; lexical resources, annotation and search; machine translation and ambiguity resolution.

Fields of interest
Language Translation and Linguistics; Mathematical Logic and Formal Languages; Artificial Intelligence (incl. Robotics); Discrete Mathematics in Computer Science; Algorithm Analysis and Problem Complexity; Special Purpose and Application-Based Systems

Target groups
Research

Type of publication
Proceedings

Available
2010. XII, 259 p. (Lecture Notes in Artificial Intelligence, Vol. 6466) Softcover
46,00 €
ISBN 978-3-642-17527-5

Security Technology, Disaster Recovery and Business Continuity

This book constitutes the refereed proceedings of the International Conference on Security Technology, SecTech 2010, and the International Conference on Disaster Recovery and Business Continuity, DRBC 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 57 full papers presented were carefully reviewed and selected from 250 submissions. The papers are focused on the various aspects of advances in both Security Technology as well as Disaster Recovery and Business Continuity.

Features
This book constitutes the refereed proceedings of the International Conference on Security Technology, SecTech 2010, and the International Conference on Disaster Recovery and Business Continuity, DRBC 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 57 full papers presented were carefully reviewed and selected from 250 submissions. The papers are focused on the various aspects of advances in both Security Technology as well as Disaster Recovery and Business Continuity.

Fields of interest
Computer Communication Networks; Algorithm Analysis and Problem Complexity; Management of Computing and Information Systems; Information Systems Applications (incl.Internet); Data Encryption; Computers and Society

Target groups
Research

Type of publication
Proceedings

Available
2010. XII, 300 p. (Communications in Computer and Information Science, Vol. 122) Softcover
64,00 €
ISBN 978-3-642-17609-8
This book constitutes the refereed proceedings of the 8th International Conference, ICSOC 2010, held in San Francisco, CA, USA, in December 2010. The 33 revised full papers and three full industry papers, presented together with 18 short papers, three PhD symposium posters and four regular posters, were carefully reviewed and selected from 238 submissions. The papers are organized in topical sections on Service and Business Process Modeling; Service Management; Quality of Service; Service Science and Design; Service Development and Run-time Management; High-level Description Languages; Service Level Agreements; Service Engineering Methodologies; Service Security, Privacy, and Trust; Business Service Modeling; Formal Methods; and Service Applications.

Features
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Fields of interest
Software Engineering; Computer Communication Networks; Information Systems Applications (incl.Internet); Information Storage and Retrieval; Management of Computing and Information Systems; Database Management

Target groups
Research

Type of publication
Proceedings

Available
87,00 € ISBN 978-3-642-17357-8

K. Deb, Indian Institute of Technology, Kanpur, India; A. Bhattacharya, Indian Institute of Technology, Kanpur, India; N. Chakraborty, Indian Institute of Technology, Kanpur, India; P. Chakraborty, Indian Institute of Technology, Kanpur, India; A. Das, Jadavpur University, India; J. Dutta, Indian Institute of Technology, Kanpur, India; S.K. Gupta, Indian Institute of Technology, Kanpur, India; B. Aggarwal, Avispandings, Haryana, India; J. Brinke, The University of Warwick, UK; S.J. Louis, The University of Nevada, Reno, NV, USA; K.C. Tan, National University of Singapore, Singapore (Eds.)

Signal Processing and Multimedia

This book constitutes the refereed proceedings of the International Conference on Signal Processing, Image Processing and Pattern Recognition, SIP 2010, and the International Conference on Multimedia, Computer Graphics and Broadcasting, MulGraB 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 53 full papers presented were carefully reviewed and selected from 225 submissions. The papers are focused on the various aspects of advances in both Signal Processing, Image Processing and Pattern Recognition as well as in Multimedia, Computer Graphics and Broadcasting.

Features
This book constitutes the refereed proceedings of the International Conference on Signal Processing, Image Processing and Pattern Recognition, SIP 2010, and the International Conference on Multimedia, Computer Graphics and Broadcasting, MulGraB 2010, both held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 53 full papers presented were carefully reviewed and selected from 225 submissions. The papers are focused on the various aspects of advances in both Signal Processing, Image Processing and Pattern Recognition as well as in Multimedia, Computer Graphics and Broadcasting.

Fields of interest
Image Processing and Computer Vision; Computer Communication Networks; Artificial Intelligence (incl. Robotics); Algorithm Analysis and Problem Complexity; Information Systems Applications (incl.Internet); Pattern Recognition

Target groups
Research

Type of publication
Proceedings

Available
2010. XIV, 328 p. (Communications in Computer and Information Science, Vol. 123) Softcover
64,00 € ISBN 978-3-642-17640-1
Simulation, Modeling, and Programming for Autonomous Robots

Second International Conference, SIMPAR 2010, Darmstadt, Germany, November 15-18, 2010, Proceedings

This book constitutes the refereed proceedings of the Second International Conference on Simulation, Modeling, and Programming for Autonomous Robots, SIMPAR 2010, held in Darmstadt, Germany, in November 2010. The 28 revised full papers presented were carefully reviewed and selected from 74 submissions. 13 papers address methodologies and environments of robot simulation, 14 refer to methodologies of autonomous robot programming and middleware, 18 describe applications and case studies. The papers are organized in topical sections on simulation, programming, and applications.

Fields of interest
Artificial Intelligence (incl. Robotics); Simulation and Modeling; User Interfaces and Human Computer Interaction; Computation by Abstract Devices; Computer Communication Networks; Software Engineering

Target groups
Research

Type of publication
Proceedings

Available
2010, XV, 412 p. (Lecture Notes in Artificial Intelligence, Vol. 6414) Softcover
62.00 € ISBN 978-3-642-17247-2

Social Robotics


This book constitutes the refereed proceedings of the Second International Conference on Social Robotics, ICSR 2010, held in Singapore, in November 2010. The 42 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in design philosophies and software architectures for robotics; social acceptance for human-robot interaction; learning, adaptation and evolution of robot intelligence; mechatronics and intelligent control; HRI in assistive technologies for people with special needs; affective and cognitive sciences for interactive robots; and interaction and collaboration.

Features
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Fields of interest
Artificial Intelligence (incl. Robotics); User Interfaces and Human Computer Interaction; Computers and Society; Computer Appl. in Social and Behavioral Sciences; Computer Imaging, Vision, Pattern Recognition and Graphics; Special Purpose and Application-Based Systems

Target groups
Research

Type of publication
Proceedings

Available
2010, XV, 558 p. (Lecture Notes in Artificial Intelligence, Vol. 6472) Softcover
70.00 € ISBN 978-3-642-17318-9

Sports Data Mining

Data mining is the process of extracting hidden patterns from data, and it’s commonly used in business, bioinformatics, counter-terrorism, and, increasingly, in professional sports. First popularized in Michael Lewis’ best-selling Moneyball: The Art of Winning An Unfair Game, it has become an intrinsic part of all professional sports the world over, from baseball to cricket to soccer. While an industry has developed based on statistical analysis services for any given sport, or even for betting behavior analysis on these sports, no research-level book has considered the subject in any detail until now. Sports Data Mining brings together in one place the state of the art as it concerns an international array of sports: baseball, football, basketball, soccer, greyhound racing are all covered, and the authors (including Hischun Chen, one of the most esteemed and well-known experts in data mining in the world) present the latest research, developments, software available, and applications for each.[…]

Features
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Contents

Fields of interest
Data Mining and Knowledge Discovery; Business Information Systems; Operation Research / Decision Theory; Statistics for Business, Economics, Mathematical Finance, Insurance

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2010, XVIII, 156 p. 29 illus., 22 in color. (Integrated Series in Information Systems, Vol. 26) Hardcover
89.95 € ISBN 978-1-4419-6729-9
Three-Dimensional Model Analysis and Processing

"Three-Dimensional Model Analysis and Processing" focuses on five hot research directions in 3D model analysis and processing in computer science, i.e., on compression, feature extraction, content-based retrieval, irreversible watermarking and reversible watermarking. The book is based on a wide range of new content, systematic and theoretical, and fully reflects the state-of-the-art in 3D model analysis and processing technologies. This book is intended for researchers, engineers and graduate students working in 3D model analysis and processing. Faxin Yu is an Associate Professor at the School of Aeronautics and Astronautics, Zhejiang University, China; both Zheming Lu and Pinghui Wang are also Professors there; Hao Luo is a Lecturer there.

Features
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Contents

Fields of interest
Computer Graphics; Information Storage and Retrieval; Mathematical Modeling and Industrial Mathematics; Coding and Information Theory; Visualization; Image Processing and Computer Vision

Target groups
Researchers

Type of publication
Monograph

Available
2010. 500 p. 160 illus., 40 in color. (Advanced Topics in Science and Technology in China) Hardcover

119.95 €
ISBN 978-3-642-12650-5
Towards Hardware-Intrinsic Security

Foundations and Practice

Hardware-intrinsic security is a young field dealing with secure secret key storage. By generating the secret keys from the intrinsic properties of the silicon, e.g., from intrinsic Physical Unclonable Functions (PUFs), no permanent secret key storage is required anymore, and the key is only present in the device for a minimal amount of time. The field is extending to hardware-based security primitives and protocols such as block ciphers and stream ciphers entangled with the hardware, thus improving IC security. While at the application level there is a growing interest in hardware security for RFID systems and the necessary accompanying system architectures. This book brings together contributions from researchers and practitioners in academia and industry, an interdisciplinary group with backgrounds in physics, mathematics, cryptography, coding theory and processor theory. It will serve as important background material for students and practitioners, and will stimulate much further research and [...]
Transforming Enterprise Cloud Services

Transforming Enterprise Cloud Services addresses the fundamental ideology of Cloud Services and how enterprises in commercial, federal, and defense industries can transform their current information technology and management models to adopt this new method. It goes beyond the mere description of service frameworks in relation to cloud technologies and operations and provides practical path-forward solutions for identified challenges. For instance, as organizations transform their data and service models to compete in a new environment where data and services coexist with others in a public-held eco-system, enterprises have to face the challenge of data synthesis from a massive number of sources. One answer to this issue relies on a cross-organizational policy and technology coordination that can ensure that data will not be reproduced or manipulated by unauthorized entities. Transforming Enterprise Cloud Services explains how organizations can justify their current practices to take advantage of...

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Contents

Fields of interest
Management of Computing and Information Systems; Technology Management; Communications Engineering, Networks; Computer Communication Networks

Target groups
Professional/practitioner

Type of publication
Monograph

Available


U- and E-Service, Science and Technology


This book constitutes the refereed proceedings of the International Conference on u- and e- Service, Science and Technology, UNESST 2010, held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 50 full papers presented were carefully reviewed and selected from 223 submissions. The papers are focused on the multifaceted aspects of u- and e- Service, Science and Technology.

Features
This book constitutes the refereed proceedings of the International Conference on u- and e- Service, Science and Technology, UNESST 2010, held as part of the Future Generation Information Technology Conference, FGIT 2010, in Jeju Island, Korea, in December 2010. The 50 full papers presented were carefully reviewed and selected from 223 submissions. The papers are focused on the multifaceted aspects of u- and e- Service, Science and Technology.

Fields of interest
Information Systems Applications (incl.Internet); Artificial Intelligence (incl. Robotics); Computer Communication Networks; Software Engineering; Information Storage and Retrieval; User Interfaces and Human Computer Interaction

Target groups
Research

Type of publication
Proceedings

Available


Verification and Validation in Systems Engineering

Assessing UML/SysML Design Models

Verification and validation represents an important process used for the quality assessment of engineered systems and their compliance with the requirements established at the beginning of or during the development cycle. Debbabi and his coauthors investigate methodologies and techniques that can be employed for the automatic verification and validation of systems engineering design models expressed in standardized modeling languages. Their presentation includes a bird’s eye view of the most prominent modeling languages for software and systems engineering, namely the Unified Modeling Language (UML) and the more recent Systems Modeling Language (SysML). Moreover, it elaborates on a number of quantitative and qualitative techniques that synergistically combine automatic verification techniques, program analysis, and software engineering quantitative methods applicable to design models described in these modeling languages. Each of these techniques is additionally explained using a case study...

Features
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Fields of interest
Software Engineering; System Performance and Evaluation; Management of Computing and Information Systems

Target groups
Research

Type of publication
Monograph

Available

Verification, Induction, Termination Analysis
Festschrift for Christoph Walther on the Occasion of His 60th Birthday

This Festschrift volume, published in honor of Christoph Walther, contains contributions written by some of his colleagues, former students, and friends. In celebration of the 60th birthdays of Alejandro P. Buchmann, Sorin A. Huss and Christoph Walther, a colloquium was held on November 19th, 2010 in Darmstadt, Germany. The articles collected herein cover some of the main topics of Christoph Walther’s research interests, such as formal modeling, theorem proving, induction, and termination analysis. Together they give a good overall perspective on the formal verification of the correctness of software systems.

Features
This Festschrift volume, published in honor of Christoph Walther, contains contributions written by some of his colleagues, former students, and friends. In celebration of the 60th birthdays of Alejandro P. Buchmann, Sorin A. Huss and Christoph Walther, a colloquium was held on November 19th, 2010 in Darmstadt, Germany. <p [...]>

Fields of interest
Software Engineering; Computer Communication Networks; Logics and Meanings of Programs; Artificial Intelligence (incl. Robotics); Mathematical Logic and Formal Languages; Information Systems Applications (incl. Internet)

Target groups
Research

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-17171-0

Web Information Systems Engineering - WISE 2010
11th International Conference, Hong Kong, China, December 12-14, 2010, Proceedings

This book constitutes the proceedings of the 11th International Conference on Web Information Systems Engineering, WISE 2010, held in Hong Kong, China, in December 2010. The 32 revised full papers and 19 revised short papers presented together with 4 keynote talks were carefully reviewed and selected from 170 submissions. The papers are organized in topical sections on web service, social networks, web data mining, keyword search, web data modeling, recommender systems, RDF and web data processing, XML and query languages, web information systems, and information retrieval and extraction.

Features
This book constitutes the proceedings of the 11th International Conference on Web Information Systems Engineering, WISE 2010, held in Hong Kong, China, in December 2010. The 32 revised full papers and 19 revised short papers presented together with 4 keynote talks were carefully reviewed and selected from 170 submissions. The papers are organized in topical sections on web service, social networks, web data [...]
Coral reefs are the largest landforms built by plants and animals. Their study therefore incorporates a wide range of disciplines. This encyclopedia approaches coral reefs from an earth science perspective, concentrating especially on modern reefs. Currently coral reefs are under high stress, most prominently from climate change with changes to water temperature, sea level and ocean acidification particularly damaging. Modern reefs have evolved through the massive environmental changes of the Quaternary with long periods of exposure during glacially lowered sea level periods and short periods of interglacial growth. The entries in this encyclopedia condense the large amount of work carried out since Charles Darwin first attempted to understand reef evolution. Leading authorities from many countries have contributed to the entries covering areas of geology, geography and ecology, providing comprehensive access to the most up-to-date research on the structure, form and processes operating on [...]

Contents

Fields of interest
Biogeosciences; Physical Geography; Freshwater & Marine Ecology; Climate Change

Target groups
Research

Type of publication
Encyclop(a)edia

Available
2011. XXX, 1236 p. illus., 412 in color. (Encyclopedia of Earth Sciences Series) Hardcover

399,00 €
Extreme Environmental Events is an authoritative single source for understanding and applying the basic tenets of complexity and systems theory, as well as the tools and measures for analyzing complex systems, to the prediction, monitoring, and evaluation of major natural phenomena affecting life on earth. These phenomena are often highly destructive, and include earthquakes, tsunamis, volcanoes, climate change, and weather. Early warning, damage, and the immediate response of human populations to these phenomena are also covered from the point of view of complexity and nonlinear systems. In 61 authoritative, state-of-the-art articles, world experts in each field apply such tools and concepts as fractals, cellular automata, solitons game theory, network theory, and statistical physics to an understanding of these complex geophysical phenomena.

**Features**

Extreme Environmental Events is an authoritative single source for understanding and applying the basic tenets of complexity and systems theory, as well as the tools and measures for analyzing complex systems, to the prediction, monitoring, and evaluation of major natural phenomena affecting life on earth. These phenomena are often highly destructive, and include [...]
M8.0 Wenchuan Earthquake

The M8.0 Wenchuan Earthquake occurred in China on May 12, 2008, killing over 69,000 people and displacing millions from their homes. This was one of the most catastrophic natural disasters on record. This book includes 5 chapters describing the tectonic setting and historical earthquakes around the Chuan-Dian region, the nucleation of the Wenchuan earthquake, occurrence and aftershocks. The field observations of earthquake induced surface fractures and building damage, form a major and special part of this book and include a large number of digital photos with accompanying explanations.

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Contents
1. Tectonic setting around Chuan-Dian region.
2. Historical earthquakes around Wenchuan earthquake and aftershocks.
3. Earthquake nucleation and occurrence - a numerical simulation.
4. Geological observation: Earthquake induced surface fractures and the relevant geological explanation.
5. Field observation: seismic deconstruction and its relationship with the ruptured faults.

Fields of interest
Structural Geology; Models and Principles; Physical Geography; Monitoring / Environmental Analysis; Popular Science in Mathematics / Natural Science / Technology

Oceans and the Atmospheric Carbon Content

Oceans and the Atmospheric Carbon Content, presents an interdisciplinary overview of the role of the oceans as a carbon sink and its relation with pH increasing trends and climate change. This volume discusses topics such as: climate variability during the last deglaciation, based on a high-resolution pollen analysis; the potential impact of CO2 from large metropolitan areas over the adjacent coastal zones and the importance of having high resolution atmospheric CO2 data to estimate accurately air-sea CO2 exchanges; present-day CO2 fluxes in the coastal ocean and their potential feedbacks under global climate change; phytoplankton community responses to climate change with emphasis on decreasing pH trends in sea water and its ecological effects; pH decrease and its effects on sea-water chemistry from a ten year time-series; the effect of acidification on metal bioaccumulation; the effects of increasing temperatures and acidification on contaminant dynamics and availability to biota; the precipitation...[

Features
Oceans and the Atmospheric Carbon Content, presents an interdisciplinary overview of the role of the oceans as a carbon sink and its relation with pH increasing trends and climate change. This volume discusses topics such as: climate variability during the last deglaciation, based on a high-resolution pollen analysis; the potential impact of CO2 from large metropolitan areas over the adjacent coastal zones and [...]
Plate Tectonics
Continental Drift and Mountain Building

How are mountains formed? Why are there old and young mountains? Why do the shapes of South America and Africa fit so well together? Why is the Pacific surrounded by a ring of volcanoes and earthquake-prone areas while the edges of the Atlantic are relatively peaceful? Frisch and Meschede and Blakey answer all these questions and more through the presentation and explanation of the geo-dynamic processes upon which the theory of continental drift is based and which have lead to the concept of plate tectonics.

Features
How are mountains formed? Why are there old and young mountains? Why do the shapes of South America and Africa fit so well together? Why is the Pacific surrounded by a ring of volcanoes and earthquake-prone areas while the edges of the Atlantic are relatively peaceful? Frisch and Meschede and Blakey answer all these questions and more through the presentation and explanation of the geodynamic processes.

Contents
1. Contractional theory, continental drift and plate tectonics
2. Plate movements and their geometric relationships
3. Continental graben structures
4. Passive continental margins and abyssal plains
5. Mid-ocean ridges
6. Hot spots
7. Subduction zones, island arcs and active continental margins
8. Transform faults
9. Terranes
10. Early Precambrian plate tectonics
11. Plate tectonics and mountain building
12. Old orogens
13. Young orogens

Fields of interest
Geology; Structural Geology; Planetology

Target groups
Research

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XII, 180 p. 194 illus. in color. Hardcover

59.95 €

Pyrometamorphism

Pyrometamorphism occurs at very high temperatures (800 - 1000 °C) and low pressures (< 2 kb) and typically results in the formation of "burnt" and fused rocks termed buchites, paralavas, clinkers and fulgarites. It is typically associated with shallow basaltic intrusions (contact aureoles, xenoliths) combustion of carbonaceous matter, lightning strikes, and is also found in meteorites. During pyrometamorphism, the sequence of heating and cooling is greatly condensed favouring the preservation of a variety of stranded reaction microstructures that reflect disequilibrium reaction kinetics with metastable and mineral crystallisation. This second edition includes the latest developments in the study of pyrometamorphism derived from over 60 new references and accompanied with over 20 new illustrations.

Features
Pyrometamorphism occurs at very high temperatures (800 - 1000 °C) and low pressures (< 2 kb) and typically results in the formation of "burnt" and fused rocks termed buchites, paralavas, clinkers and fulgarites. It is typically associated with shallow basaltic intrusions (contact aureoles, xenoliths) combustion of carbonaceous matter, lightning strikes, and is also found in meteorites. During pyrometamorphism, the sequence of heating and cooling is greatly condensed favouring the preservation of a variety of stranded reaction microstructures that reflect disequilibrium reaction kinetics with metastable and mineral crystallisation.

Introduction
Thermal Regimes and Effects
Quartz-feldspathic Rocks
Calc-Silicates and Evaporites
Mafic Rocks
Anthropogenic and Biomass Pyrometamorphism
Mineral Breakdown Reactions

Fields of interest
Mineralogy; Mineral Resources; Geochemistry

Target groups
Research

Type of publication
Monograph

Available
129.95 €
ISBN 978-3-642-15587-1

Riverbank Filtration for Water Security in Desert Countries

Riverbank filtration is a low cost, yet efficient water treatment technology. It has most potential to provide safe drinking water to large cities located along rivers or lakes. In particular, it is ideal for large population centres in developing countries, where the cost of building extensive treatment facilities is prohibitive. Water filtration can be successfully implemented using naturally occurring sand and gravel along the river/lake banks. The cost of water produced by this means is much lower than that of water treated in conventional treatment plants. Authored by a multi-disciplinary team of experts, this volume addresses the scientific basis of the filtration process, and also numerous topics of importance for the planning, technical realization, and security of such plants. Their application for the removal of relevant chemical pollutants and a variety of pathogens is analysed in detail.

Features
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Contents
Preface
Riverbank Filtration Concepts and Applicability to Desert Environments
Water Pollution and Riverbank Filtration for Water Supply Along River Nile, Egypt
A Combined RBF and ASR System for Providing Drinking Water in Water Scarce Areas
Behavior of Dissolved Organic Carbon During Bank Filtration Under Extreme Climate Conditions
Risk Assessment for Chemical Spills in the River Rhine
Fluorescent Microspheres as Suprogates in Evaluating the Efficacy of Riverbank Filtration for Removing Cryptosporidium parvum Oocysts and Other Pathogens
Hydrogeochemical Processes

Fields of interest
Hydrogeology; Geomorphology; Geochemistry; Applied Earth Sciences

Target groups
Graduate

Type of publication
Proceedings

Available
139.95 €
ISBN 978-94-007-0025-3

M. Shamrukh, Minia University, Egypt (Ed.)
Riverbank Filtration for Water Security in Desert Countries

Riverbank filtration is a low cost, yet efficient water treatment technology. It has most potential to provide safe drinking water to large cities located along rivers or lakes. In particular, it is ideal for large population centres in developing countries, where the cost of building extensive treatment facilities is prohibitive. Water filtration can be successfully implemented using naturally occurring sand and gravel along the river/lake banks. The cost of water produced by this means is much lower than that of water treated in conventional treatment plants. Authored by a multi-disciplinary team of experts, this volume addresses the scientific basis of the filtration process, and also numerous topics of importance for the planning, technical realization, and security of such plants. Their application for the removal of relevant chemical pollutants and a variety of pathogens is analysed in detail.

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Multiple Perspectives on Difficulties in Learning Literacy and Numeracy

There are many approaches to researching the difficulties in learning that students experience in the key areas of literacy and numeracy. This book seeks to advance understanding of these difficulties and the interventions that have been used to improve outcomes. The book addresses the sometimes complementary and sometimes contradictory results, and generates new approaches to understanding and serving students with difficulties in literacy and numeracy. The book represents a departure from conventional wisdom as most scholars and graduate students draw upon ideas from only one of the three domains focal in the book and usually from one single or dominant theoretical frame. Typically, readers will affiliate with reading education, mathematics education, or learning disabilities and belong to one of the corresponding professional associations such as IRA, NCTM, or CLD. This book’s scope will open a scholarly forum for engaging readers with a familiarity with one of these domains while providing[...]

Contents

- List of Abbreviations
- List of Tables
- List of Figures
- 5. [...] Features

- This book advances understandings of the difficulties in learning that students experience in the key areas of literacy and numeracy and the interventions that have been used to improve outcomes. By including authors drawn from several countries and with expertise in a variety of research traditions, the book addresses the sometimes complementary and sometimes contradictory results, and generates new[...]

Fields of interest

International and Comparative Education

Target groups

Research

Type of publication

Contributed volume

Available


139,95 € ISBN 978-94-007-0445-9

Multiple Perspectives on Problem Solving and Learning in the Digital Age

This edited volume with selected expanded papers from CELDA (Cognition and Exploratory Learning in the Digital Age) 2009 (http://www.celda-conf.org/) addresses the main issues concerned with problem solving, evolving learning processes, innovative pedagogies, and technology-based educational applications in the digital age. There have been advances in both cognitive psychology and computing that have affected the educational arena. The convergence of these two disciplines is increasing at a fast pace and affecting academia and professional practice in many ways. Paradigms such as just-in-time learning, constructivism, student-centered learning and collaborative approaches have emerged and are being supported by technological advancements such as simulations, virtual reality and multi-agents systems. These developments have created both opportunities and areas of serious concerns. This volume aims to cover both technological as well as pedagogical issues related to these developments.

Features

- Multiple Perspectives on Problem-Solving and Learning in the Digital Age Dirk Ifenthaler, Kinshuk, Pedro Isaias, Demetrios G. Sampson, J. Michael Spector, editors Have computers made problem-solving easier? The answer is a resounding yes and no: while we can access more information and increasingly sophisticated search engines, problems themselves are more complicated, and often more vague. Accordingly, new[...]

Contents

- Investigating an online museum’s information system.
- A framework for matching aims, processes, learner expertise and technologies.
- Web-based learning objects in school education.
- A monitoring and experience sharing tool.
- Constructing a knowledge base according to a text comprehension model.
- First-person education and the nature of knowing, understanding, and affect.
- Socio-cognitive regulation strategies in cooperative learning tasks in virtual contexts.
- Collaborative cognitive tools for shared representations.
- Automating the measurement of critical thinking for individuals[...]

Fields of interest

Educational Technology; Educational Psychology; Learning and Instruction

Target groups

Research

Type of publication

Monograph

Available

2011. 250 p. Hardcover

89,95 € ISBN 978-1-4419-7611-6
Engineering

A. Sheibanyrad, TIMA Laboratory, Grenoble, France; F. Pétrot, TIMA Laboratory, Grenoble, France; A. Jantzch, Royal Institute of Technology, Kista, Sweden (Eds.)

3D Integration for NoC-based SoC Architectures

This book presents the research challenges that are due to the introduction of the 3rd dimension in chips for researchers and covers the whole architectural design approach for 3D-SoCs. Nowadays the 3D-Integration technologies, 3D-Design techniques, and 3D-Architectures are emerging as interesting, truly hot, broad topics. The present book gathers the recent advances in the whole domain by renowned experts in the field to build a comprehensive and consistent book around the hot topics of three-dimensional architectures and microarchitectures. This book includes contributions from high level international teams working in this field.

Features

Back Cover Copy
	SERIES: Integrated Circuits and Systems 3D-Integration for NoC-based SoC Architectures by: (Editors) Abbas Sheibanyrad Frédéric Pétrot Axel Janstch This book investigates on the 3D-Integration technologies, 3D-Design techniques, and 3D-Architectures as emerging as interesting, truly hot, broad topics. The present book gathers the recent advances in the whole domain by renowned experts in the field to build a comprehensive and consistent book around the hot topics of three-dimensional architectures and microarchitectures. This book includes contributions from high level international teams working in this field.

Contents


Fields of interest

Circuits and Systems; Software Engineering

Target groups

Professional/practitioner

Type of publication

Monograph

Available


99,95 €
ISBN 978-1-4419-7617-8

A Roadmap for Cognitive Development in Humanoid Robots

This book addresses the central role played by development in cognition. The focus is on applying our knowledge of development in natural cognitive systems, specifically human infants, to the problem of creating artificial cognitive systems in the guise of humanoid robots. The approach is founded on the three-fold premise that (a) cognition is the process by which an autonomous self-governing agent acts effectively in the world in which it is embedded, (b) the dual purpose of cognition is to increase the agent’s repertoire of effective actions and its power to anticipate the need for future actions and their outcomes, and (c) development plays an essential role in the realization of these cognitive capabilities. Our goal in this book is to identify the key design principles for cognitive development. We do this by bringing together insights from four areas: enactive cognitive science, developmental psychology, neuropsychology, and computational modelling. This results in roadmap comprising a set of[...]...

Contents


Fields of interest

Robotics and Automation; Computational Intelligence; Artificial Intelligence (incl. Robotics); Cognitive Psychology; Neurosciences

Target groups

Research

Type of publication

Monograph

Available


79,95 €
ISBN 978-3-642-16903-8

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Oxford, the Collegiate University

Conflict, Consensus and Continuity

Oxford is one of the world’s great universities but this has not meant that it is exempt from pressures for change. On various fronts it has been required to meet the challenges that universities almost worldwide have to face. Given the retrenchment of public funding, especially to support undergraduate teaching, it has been required to augment its financial base, while at the same time deciding how to respond to pressure from successive governments determined to use higher education to achieve their own policy goals. While still consistently ranked as a world-class university, it has to decide how it is to acquire the funding to continue in this league, or whether this goal is worth pursuing. Oxford is a collegiate university, which means its colleges share with the university responsibility for the delivery of its central goals. Is this balance of authority shifting over time? If so, how is this to be accounted for, and what are the likely outcomes for the collegiate university? This book[...]

Features

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Contents


Fields of interest

Higher Education; Educational Policy and Politics; International and Comparative Education; Administration, Organization and Leadership

Target groups

Research

Type of publication

Monograph

Available


99,95 €
ISBN 978-94-007-0046-8

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Three-Dimensional Integration of Integrated Circuits

A. Sheibanyrad, TIMA Laboratory, Grenoble, France; F. Pétrot, TIMA Laboratory, Grenoble, France; A. Jantzch, Royal Institute of Technology, Kista, Sweden (Eds.)

3D Integration for NoC-based SoC Architectures

This book presents the research challenges that are due to the introduction of the 3rd dimension in chips for researchers and covers the whole architectural design approach for 3D-SoCs. Nowadays the 3D-Integration technologies, 3D-Design techniques, and 3D-Architectures are emerging as interesting, truly hot, broad topics. The present book gathers the recent advances in the whole domain by renowned experts in the field to build a comprehensive and consistent book around the hot topics of three-dimensional architectures and microarchitectures. This book includes contributions from high level international teams working in this field.

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Contents


Fields of interest

Circuits and Systems; Software Engineering

Target groups

Professional/practitioner

Type of publication

Monograph

Available


99,95 €
ISBN 978-1-4419-7617-8
### Adaptive RF Front-Ends for Hand-Held Applications

The RF front-end – antenna combination is a vital part of a mobile phone because its performance is very relevant to the link quality between hand-set and cellular network base-stations. The RF front-end performance suffers from changes in operating environment, like hand-effects, that are often unpredictable. Adaptive RF Front-Ends for Hand-Held Applications presents an analysis on the impact of fluctuating environmental parameters. In order to overcome undesired behavior two different adaptive control methods are treated that make RF front-ends more resilient: adaptive impedance control, and adaptive power control. Several adaptive impedance control techniques are discussed, using a priori knowledge on matching network properties, in order to simplify robust 2-dimensional control. A generic protection concept is presented, based on adaptive power control, which improves the ruggedness of a power amplifier or preserves its linearity under extremes. It comprises over-voltage, over-temperature, and [...]  

**Features**  
The RF front-end – antenna combination is a vital part of a mobile phone because its performance is very relevant to the link quality between hand-set and cellular network base-stations. The RF front-end performance suffers from changes in operating environment, like hand-effects, that are often unpredictable. Adaptive RF Front-Ends for Hand-Held Applications presents an analysis on the [...]  

**Contents**  

**Fields of interest**  
Circuits and Systems; Solid State Physics; Input/Output and Data Communications; Microwaves, RF and Optical Engineering  

**Target groups**  
Research  

**Type of publication**  
Monograph  

**Available**  
99.95 €  

### Advances in Cognitive Informatics and Cognitive Computing

Cognitive Informatics (CI) is the science of cognitive information processing and its applications in cognitive computing. CI is a transdisciplinary enquiry of computer science, information science, cognitive science, and intelligence science that investigates into the internal information processing mechanisms and processes of the brain. Advances and engineering applications of CI have led to the emergence of cognitive computing and the development of Cognitive Computers (CCs) that reason and learn. As initiated by Yingxu Wang and his colleagues, CC has emerged and developed based on the transdisciplinary research in CI, abstract intelligence (AI), and denotational mathematics after the inauguration of the series of IEEE International Conference on Cognitive Informatics since 2002 at Univ. of Calgary, Stanford Univ., and Tsinghua Univ., etc. This volume in LNCS (subseries of Computational Intelligence), LNICI 323, edited by Y. Wang, D. Zhang, and W. Kinsner, presents the latest development in [...]  

**Features**  
Cognitive Informatics (CI) is the science of cognitive information processing and its applications in cognitive computing. CI is a transdisciplinary enquiry of computer science, information science, cognitive science, and intelligence science that investigates into the internal information processing mechanisms and [...]  

**Contents**  

**Fields of interest**  
Cognitive Informatics; Energy Technology; Nuclear Physics, Heavy Ions, Hadrons  

**Target groups**  
Research  

**Type of publication**  
Monograph  

**Available**  
2011. X, 190 p. Hardcover  
99.95 €  

### Advances in Light Water Reactor Technologies

Advances in Light Water Reactor Technologies focuses on the design and analysis of advanced nuclear power reactors. This volume provides readers with thorough descriptions of the general characteristics of various advanced light water reactors currently being developed worldwide. Safety, design, development and maintenance of these reactors is the main focus, with key technologies like full MOX core design, next-generation digital I&C systems and seismic design and evaluation described at length. This book is ideal for researchers and engineers working in nuclear power that are interested in learning the fundamentals of advanced light water plants.  

**Features**  
Advances in Light Water Reactor Technologies focuses on the design and analysis of advanced nuclear power reactors. This volume provides readers with thorough descriptions of the general characteristics of various advanced light water reactors currently being developed worldwide. Safety, design, development and maintenance of these reactors is the main focus, with key technologies like full MOX core [...]  

**Fields of interest**  
Nuclear Engineering; Energy Technology; Nuclear Physics, Heavy Ions, Hadrons  

**Target groups**  
Research  

**Type of publication**  
Contributed volume  

**Available**  
2011. X, 190 p. Hardcover  
99.95 €  
Modern network devices are becoming increasingly “intelligent” and programmable. Examples range from router scripting environments to fully programmable server blades. As a result, networked applications are no longer constrained just to servers that are interconnected via a network, but can migrate into and become embedded within the network itself. This promises to accelerate the current trend towards systems that are increasingly autonomous and to a certain degree self-managing. However, the next frontier lies in applications that go beyond traditional management and control functions and that are becoming increasingly decentralized, not constrained in scope to individual systems. Examples include decentralized monitoring, gossip-based configuration, network event correlation inside the network across multiple systems, overlay control protocols, and network-aware multi-media applications.

Features
The general trend of modern network devices towards greater intelligence and programmability is accelerating the development of systems that are increasingly autonomous and to a certain degree self-managing. Examples range from router scripting environments to fully programmable server blades. This has opened up a new field of computer science research, reflected in this new volume. This selection of [...]
Automotive Transmissions

Fundamentals, Selection, Design and Application

This book gives a full account of the development process for automotive transmissions. Main topics:
- Overview of the traffic – vehicle – transmission system
- Mediating the power flow in vehicles
- Selecting the ratios
- Vehicle transmission systems
- Basic design principles
- Typical designs of vehicle transmissions
- Layout and design of important components, e.g. gearshifting mechanisms, moving-off elements
- Pumps, retarders
- Transmission control units
- Product development process
- Manufacturing technology of vehicle transmissions
- Reliability and testing

The book covers manual, automated manual and automatic transmissions as well as continuously variable transmissions and hybrid drives for passenger cars and commercial vehicles. Furthermore, final drives, power take-offs and transfer gearboxes for 4WD vehicles are considered. Since the release of the first edition in 1999 there have been a lot of changes in the field of vehicles and transmissions. About 40% of the second edition’s content is of the second edition’s content.

Features

This book gives a full account of the development process for automotive transmissions. Main topics:
- Overview of the traffic – vehicle – transmission system
- Mediating the power flow in vehicles
- Selecting the ratios
- Vehicle transmission systems
- Basic design principles
- Typical designs of vehicle transmissions
- Layout and design of important components

Contents

Introduction
- Overview of the Traffic - Vehicle - Transmission System
- Mediating the Power Flow
- Vehicle Transmission Systems
- Basic Design Principles
- Design of Gearwheel Transmissions for Vehicles
- Specification and Design of Shafts
- Gearshifting Mechanisms
- Moving-Off Elements
- Design and Configuration of Further Design Elements
- Typical Designs of Vehicle Transmissions
- Electronic Transmission Control
- Computer-Aided Transmission Development
- The Automotive Transmission Development Process

Fields of interest

Automotive Engineering; Machinery and Machine Elements; Engineering Design

Target groups

Professional/practitioner

Type of publication

Professional book

Available

2011. XXIV, 718 p. 487 illus. Hardcover

169.95 €
ISBN 978-3-642-16213-8

Bio-Medical CMOS ICs

This book is based on a graduate course entitled, Ubiquitous Healthcare Circuits and Systems, that was given by one of the editors at his university. It includes an introduction and overview to the field of biomedical ICs and provides information on the current trends in research. The material focuses on the design of biomedical ICs rather than focusing on how to use prepared ICs.

Features

Bio-Medical CMOS ICs provides readers with the basic operation principles and architectures as well as the most recent research results of low power CMOS ICs especially for bio-medical applications.

The book covers three parts:

- Vital Signal Sensing and Processing from Neuronal Signal, Electrode and Readout IC
- ADC to Bio-Signal Processor
- Short Distance Bio-Medical Body Channel Communication and Wireless

Contents

Introduction to Biomedical CMOS IC.
- Basic Electrical Properties of the Human Body
- Bio-Electrodes
- CMOS Read-out Circuits
- Low Power ADCs for Bio-medical Applications
- Low Power Bio-Medical DSP
- Short Distance Wireless Communications
- Bio-Medical Application of WPAN
- Body Channel Communication for Energy-Efficient RAN
- Wearable Healthcare Systems
- Digital Hearing Aids and Cochlear Implant
- Cardiac Rhythm Management ICs
- Neurostimulation Design from an Energy and Information Transfer Perspective
- Artificial Retina IC

Fields of interest

Circuits and Systems; Biomedical Engineering; Electronics and Microelectronics; Instrumentation

Target groups

Research

Type of publication

Monograph

Available


129,95 €

CMOS Circuits for Passive Wireless Microsystems

This book provides a comprehensive treatment of CMOS circuits for passive wireless microsystems. Major topics include:
- An overview of passive wireless microsystems, design challenges of passive wireless microsystems, fundamental issues of ultra-low power wireless communications, radio-frequency power harvesting, ultra-low power modulators and demodulators, ultra-low power temperature-compensated current and voltage references, clock generation and remote calibration, and advanced design techniques for ultra-low-power analog signal processing.

Features

CMOS Circuits for Passive Wireless Microsystems provides a comprehensive treatment of the design principles and implementation of CMOS circuits and systems for passive wireless microsystems. Major subjects covered in the book include:
- passive wireless microsystems, radio-frequency power harvest, data encoding, modulators and demodulators, low-power precision voltage references, clock generation and

Contents

Introduction to Passive Wireless Microsystems
- Fundamental Issues of Passive Wireless Microsystems
- Radio-Frequency Power Harvesting
- Modulation and Demodulation
- Ultra-Low Power Temperature-Compensated Precision References
- Clock Generation and Remote Calibration
- Ultra-Low Power Analog-to-Digital Converters

Fields of interest

Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups

Research

Type of publication

Monograph

Available

2011. XVII, 279 p. 100 illus. Hardcover

99,95 €
ISBN 978-1-4419-7679-6
Cloud Connectivity and Embedded Sensory Systems

Sensor networks are meant to create awareness in space and time. They may be measuring the presence of an object or a condition, characterizing an object stream or a situational pattern, or even detect abnormalities that are to occur. This book provides new theory on the design of wireless sensor networks, based on concepts developed for large-scale, distributed computing environments known as "cloud computing." It provides a single-source entry into the world of intelligent sensory networks, with a step-by-step discussion of building case studies that capture the requirements, taking into account practical limitations of creating ambient intelligence.

The reader will not only achieve a better understanding of sensory clouds, swarms and flocks but is also guided by examples of how to design such networks taking the typical characteristics of diverse application areas into account.

Features

Cloud Connectivity and Embedded Sensory Systems by: Lambert Spaanenburg Hendrik Spaanenburg Sensory systems are meant to create awareness in space and time. They may be measuring the presence of an object or a condition, characterizing an object stream or a situational pattern, or even detect abnormalities that are to occur. This book provides new theory on the design of wireless sensor networks, based [...]”

Contents

Introduction: Ambient Intelligence Limitations; Topological Considerations; Software Infrastructure; Network Safety and Security; System Development; Applications: Android-in-the-Cloud; Wear-Free Transmission; Body-Area Networks; Patient Monitoring; Environmental Monitoring; Conclusion.

Fields of interest

Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups

Professional/practitioner

Type of publication

Monograph

Available

2011. XXII, 285 p. 100 illus. Hardcover

99,95 €

Computation of Viscous Incompressible Flows

This monograph is intended as a concise and self-contained guide to practitioners and graduate students for applying approaches in computational fluid dynamics (CFD) to real-world problems that require a quantification of viscous incompressible flows. In various projects related to NASA missions, the authors have gained CFD expertise over many years by developing and utilizing tools especially related to viscous incompressible flows. They are looking at CFD from an engineering perspective, which is especially useful when working on real-world applications. From that point of view, CFD requires two major elements, namely methods/algorithm and engineering/physical modeling. As for the methods, CFD research has been performed with great successes. In terms of modeling/simulation, mission applications require a deeper understanding of CFD and flow physics, which has only been debated in technical conferences and to a limited scope. This monograph fills the gap by offering in-depth examples for students [...]

Features

This monograph is intended as a concise and self-contained guide to practitioners and graduate students for applying approaches in computational fluid dynamics (CFD) to real-world problems that require a quantification of viscous incompressible flows. In various projects related to NASA missions, the authors have gained CFD expertise over many years by developing and utilizing tools especially related to [...]

Contents

1.- Introduction: Flow Physics; Computational Approach; What is Covered in The Monograph.- 2.- Methods for Solving Viscous Incompressible Flow Problems: Overview; Mathematical Model; Formulation for General Geometry; Overview of Solution Approaches.- 3.- Pressure Projection Method in Generalized Coordinates: Overview; Formulation in Integral Form; Discretization; Solution Procedure; Validation of the Solution Procedure.- 4.- Artificial Compressibility Method: Formulation and Its Physical Characteristics; Steady-State Formulation; Steady-state Algorithm; Time-Accurate Procedure.-

Fields of interest

Engineering Fluid Dynamics; Numerical and Computational Physics; Fluid- and Aerodynamics

Target groups

Research

Type of publication

Monograph

Available

2011. 319 p. (Scientific Computation) Hardcover

89,95 €

Computational Methods for Microstructure-Property Relationships

Computational Methods for Microstructure-Property Relationships introduces state-of-the-art advances in computational modeling approaches for materials structure-property relations. Written with an approach that recognizes the necessity of the engineering computational mechanics framework, this volume provides balanced treatment of heterogeneous materials structures within the microstructural and component scales. Encompassing both computational mechanics and computational materials science disciplines, this volume offers an analysis of the current techniques and selected topics important to industry researchers, such as deformation, creep and fatigue of primarily metallic materials. Researchers, engineers and professionals involved with predicting performance and failure of materials will find Computational Methods for Microstructure-Property Relationships a valuable reference.

Features

Computational Methods for Microstructure-Property Relationships introduces state-of-the-art advances in computational modeling approaches for materials structure-property relations. Written with an approach that recognizes the necessity of the engineering computational mechanics framework, this volume provides balanced treatment of heterogeneous materials structures within the microstructural and component [...]

Contents

Introduction.- Methods for Generating 3D Image Data for Material Microstructures.- 3D Microstructure Simulation.- Microstructure-Based Domain Partitioning, RVE Definition and RVE Evolution for Intrinsic Property Computations.- Coupling Microstructure Evolution with Microstructure Characterization.- Materials Response Representations & Limitations in Present-day Design Codes.- Local Continuum Approaches to Constitutive Modeling.- Strain Gradient Plasticity; Dislocation Coarse-Grain Challenges; Representing Length-Scale Dependence.- Constitutive Laws for Time Dependent [...]"
Computational Methods in Stochastic Dynamics

At the dawn of the 21st century, computational stochastic dynamics is an emerging research frontier. This book focuses on advanced computational methods and software tools which can highly assist in tackling complex problems in stochastic dynamic/seismic analysis and design of structures. The book is primarily intended for researchers and post-graduate students in the fields of computational mechanics and stochastic structural dynamics. Nevertheless, practicing engineers as well could benefit from it as most code provisions tend to incorporate probabilistic concepts in the analysis and design of structures. The book addresses mathematical and numerical issues in stochastic structural dynamics and connects them to real-world applications. It consists of 16 chapters dealing with recent advances in a wide range of related topics (dynamical response variability and reliability of stochastic systems, risk assessment, stochastic simulation of earthquake ground motions, efficient solvers for the analysis of...)

Features

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Contents

Preface.- Model Reduction and Uncertainties in Structural Dynamics, by G.J. Schueller (in Cooperation with B. Goller and H.J. Pradlwarter).- Resonant Damping of Flexible Structures under Random Excitation, by Steen Krenk and Jan Høgsberg.- Importance sampling of nonlinear structures using adapted importance sampling of nonlinear structures using adapted. In particular, the book treats the following topics: How to tune a PID controller and assess its performance; How to design a two-degree-of-freedom control scheme in order to deal with both the set-point following and load disturbance rejection tasks; How to modify the basic Smith predictor control scheme in order to cope with the presence of an integrator in the process; and how to address the presence of large process dead times. The methods are presented sequentially, highlighting the evolution of their rationale and implementation and thus clearly characterising them from both academic and industrial perspectives.

Features

Integral processes with dead time are frequently encountered in the process industry; typical examples include supply chains, level control and batch distillation columns. Special attention must be paid to their control because they lack asymptotic stability (they are not self-regulating) and because of their delays. As a result, many techniques have been devised to cope with these hurdles both in the...]

Contents


Fields of interest

Control, Robotics, Mechatronics; Industrial Chemistry / Chemical Engineering; Industrial and Production Engineering

Target groups

Research

Type of publication

Monograph

Available

2011. XXVI, 268 p. 168 illus., 10 in color. (Advances in Industrial Control) Hardcover

99.95 €
ISBN 978-0-85729-069-4
Dependability in Electronic Systems

Mitigation of Hardware Failures, Soft Errors, and Electro-Magnetic Disturbances

This book covers the practical application of dependable electronic systems in real industry, such as space, train control and automotive control systems, and network servers/routers. The impact from intermittent errors caused by environmental radiation (neutrons and alpha particles) and EMI (Electro-Magnetic Interference) are introduced together with their most advanced countermeasures. Power Integrity is included as one of the most important bases of dependability in electronic systems. Fundamental technical background is provided, along with practical design examples. Readers will obtain an overall picture of dependability from failure causes to countermeasures for their relevant systems or products, and therefore, will be able to select the best choice for maximum dependability.

Features
Dependability in Electronic Systems: Mitigation of Hardware Failures, Soft Errors, and Electro-Magnetic Disturbances by: Nobuyasu Kanekawa Eishi H. Ibe Takashi Suga Yutaka Uematsu The importance of "dependability" in electronic systems is obvious, especially in safety-critical or mission-critical applications. Dependability hinges on matters such as failure causes and countermeasures for soft/hard […]

Contents
Introduction. - Terrestrial Neutron-Induced Failures in Semiconductor Devices and Relevant Systems.- Electromagnetic Compatibility; Power Integrity.- Deppendable System Technology. Fields of interest Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups
Research

Type of publication
Monograph

Available
2011. X, 240 p. 100 illus. Hardcover
99,95 €

Design Methodologies for Secure Embedded Systems
Festschrift in Honor of Prof. Dr. Ing. Sorin A. Huss

Embedded systems have been almost invisibly pervading our daily lives for several decades. They facilitate smooth operations in avionics, automotive electronics, or telecommunication. New problems arise by the increasing employment, interconnection, and communication of embedded systems in heterogeneous environments: How secure are these embedded systems against attacks or breakdowns? Therefore, how can embedded systems be designed to be more secure? How can embedded systems autonomically react to threats? Facing these questions, Sorin A. Huss is significantly involved in the exploration of design methodologies for secure embedded systems. This Festschrift is dedicated to him and his research on the occasion of his 60th birthday.

Features
Embedded systems have been almost invisibly pervading our daily lives for several decades. They facilitate smooth operations in avionics, automotive electronics, or telecommunication. New problems arise by the increasing employment, interconnection, and communication of embedded systems in heterogeneous environments: How secure are these embedded systems against attacks or breakdowns? Therefore, how can […]

Contents

Fields of interest
Circuits and Systems; Control, Robotics, Mechatronics; Electrical Engineering; Special Purpose and Application-Based Systems

Target groups
Research

Type of publication
Proceedings

Available
2011. 204 p. (Lecture Notes in Electrical Engineering, Vol. 78) Hardcover
99,95 €
ISBN 978-3-642-16766-9

Drives and Control for Industrial Automation

Drives and Control for Industrial Automation presents the material necessary for an understanding of servo control in automation. Beginning with a macroscopic view of its subject, treating drives and control as parts of a single system, the book then pursues a detailed discussion of the major components of servo control: sensors, controllers and actuators. Throughout, the mechatronic approach – a synergistic integration of the components – is maintained, in keeping with current practice. The authors’ holistic approach does not preclude the reader from learning in a step-by-step fashion – each chapter contains material that can be studied separately without compromising understanding. Drives are described in several chapters according to the way they are usually classified in industry, each comprised of its actuators and sensors. The controller is discussed alongside. Topics of recent and current interest – piezoelectricity, digital communications and future trends – are detailed in their own chapters.

Features
Drives and Control for Industrial Automation presents the material necessary for an understanding of servo control in automation. Beginning with a macroscopic view of its subject, treating drives and control as parts of a single system, the book then pursues a detailed discussion of the major components of servo control: sensors, controllers and actuators. Throughout, the mechatronic approach – […]

Contents

Fields of interest
Control, Robotics, Mechatronics; Industrial and Production Engineering; Energy Technology

Target groups
Research

Type of publication
Monograph

Available
2011. XIII, 183 p. 122 illus. (Advances in Industrial Control) Hardcover
99,95 €
ISBN 978-1-84882-424-9
Until the late 1980s, information processing was associated with large mainframe computers and huge tape drives. During the 1990s, this trend shifted toward information processing with personal computers, or PCs. The trend toward miniaturization continues in the future the majority of information processing systems will be small mobile computers, many of which will be embedded into larger products and interfaced to the physical environment. Hence, these kinds of systems are called embedded systems. Embedded systems together with their physical environment are called cyber-physical systems. Examples include systems such as transportation and fabrication equipment. It is expected that the total market volume of embedded systems will be significantly larger than that of traditional information processing systems such as PCs and mainframes. Embedded systems share a number of common characteristics. For example, they must be dependable, efficient, meet real-time constraints and require customization.[…]

Features
Until the late 1980s, information processing was associated with large mainframe computers and huge tape drives. During the 1990s, this trend shifted toward information processing with personal computers, or PCs. The trend toward miniaturization continues and in the future the majority of information processing systems will be small mobile computers, many of which will be embedded into larger […]

Contents

Fields of interest
Circuits and Systems; Software Engineering / Programming and Operating Systems

Target groups
Research

Type of publication
Monograph

Available
59,95 €
ISBN 978-94-007-0256-1

Emotional Engineering

In an age of increasing complexity, diversification and change, customers expect services that cater to their needs and to their tastes. Emotional Engineering describes how their expectations can be satisfied and managed throughout the product life cycle, if producers focus their attention more on emotion. Emotion plays a crucial role in value recognition, but it is also important for team work, which extends beyond human-human to human-machine-environment to enable people to cope with frequently and extensively changing situations. Emotional Engineering proposes the development of services beyond product realization and the creation of value on a lifetime, not just a one-off, basis. As emotion is very much multidisciplinary, chapters cover a wide range of topics that can be applied to product development, including: • emotional design in the virtual environment; • shape design and modeling; • emotional robot competence; and • affective driving. Emotional Engineering is intended to […]

Features
In an age of increasing complexity, diversification and change, customers expect services that cater to their needs and to their tastes. Emotional Engineering describes how their expectations can be satisfied and managed throughout the product life cycle, if producers focus their attention more on emotion. Emotion plays a crucial role in value recognition, but it is also important for team work […]

Contents

Fields of interest
Engineering Economics, Organization, Logistics, Marketing; Production / Logistics; Computers and Society; Engineering Design

Target groups
Research

Type of publication
Monograph

Available
2011. XI, 163 p. 100 illus. Hardcover
99,95 €

Energy Harvesting Systems

Kinetic energy harvesting converts movement or vibrations into electrical energy, enables battery free operation of wireless sensors and autonomous devices and facilitates their placement in locations where replacing a battery is not feasible or attractive. This book provides an introduction to operating principles and design methods of modern kinetic energy harvesting systems and explains the implications of harvested power on autonomous electronic systems design. It describes power conditioning circuits that maximize available energy and electronic systems design strategies that minimize power consumption and enable operation. The principles discussed in the book will be supported by real case studies such as battery-less monitoring sensors at water waste processing plants, embedded battery-less sensors in automotive electronics and sensor-networks built with ultra-low power wireless nodes suitable for battery-less applications.

Features
Energy Harvesting Systems: Principles, Modelling and Applications Edited by: Tom Kazmierski Steve Beeby Kinetic energy harvesting converts movement or vibrations into electrical energy, enables battery free operation of wireless sensors and autonomous devices and facilitates their placement in locations where replacing a battery is not feasible or attractive. This book provides an introduction to […]

Contents

Fields of interest
Circuits and Systems; Computer-Aided Engineering (CAE, CAD) and Design

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 163 p. 100 illus. Hardcover
99,95 €
Fusion Methods for Unsupervised Learning Ensembles

The application of a "committee of experts" or ensemble learning to artificial neural networks that apply unsupervised learning techniques is widely considered to enhance the effectiveness of such networks greatly. This book examines the potential of the ensemble meta-algorithm by describing and testing a technique based on the combination of ensembles and statistical PCA that is able to determine the presence of outliers in high-dimensional data sets and to minimize outlier effects in the final results. Its central contribution concerns an algorithm for the ensemble fusion of topology-preserving maps, referred to as Weighted Voting Superposition (WtVS), which has been devised to improve data exploration by 2-D visualization over multi-dimensional data sets. This generic algorithm is applied in combination with several other models taken from the family of topology preserving maps, such as the SOM, ViSOM, SIM and Max-SIM. A range of quality measures for topology preserving maps that are proposed in [...] Features

The application of a "committee of experts" or ensemble learning to artificial neural networks that apply unsupervised learning techniques is widely considered to enhance the effectiveness of such networks greatly. This book examines the potential of the ensemble meta-algorithm by describing and testing a technique based on the combination of ensembles and statistical PCA that is able to determine the presence [...] Contents


Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Monograph

Available

2011. 166 p. (Studies in Computational Intelligence, Vol. 322) Hardcover

99,95 €
ISBN 978-3-642-16204-6

Globalization of Mobile and Wireless Communications

Today and in 2020

Globalization of Mobile and Wireless Communications is a collection of cutting-edge research in mobile and wireless communications with impact on developments as far forward as 2020 and beyond. The book draws upon the insights and performed research work of leading experts in the field. Topics of discussion are related but not limited to spectrum-efficient radio interface technologies, enabling technologies for reconfigurability, wireless sensor networks, cognitive networks, coherent wireless transmission, algorithmic design, middleware for novel services and applications. The material has been edited to provide a vision for the future of mobile and wireless, towards a dynamic communication system that breaks down the barriers between communications means; and evolves and integrates business models and culture to match the technological evolution. In addition, strategies on how to overcome the technological challenges for achieving that vision are also outlined.

Features

Globalization of Mobile and Wireless Communications is a collection of cutting-edge research in mobile and wireless communications with impact on developments as far forward as 2020 and beyond. The book draws upon the insights and performed research work of leading experts in the field. Topics of discussion are related but not limited to spectrum-efficient radio interface technologies, enabling [...] Contents


Communications Engineering, Networks; Computer Systems Organization and Communication Networks

Target groups

Research

Type of publication

Monograph

Available

2011. XXII, 300 p. (Signals and Communication Technology) Hardcover

99,95 €
ISBN 978-94-007-0106-9

Handbook of Nuclear Engineering


The Handbook of Nuclear Engineering is an authoritative compilation of information regarding methods and data used in all phases of nuclear engineering. Addressing nuclear engineers and scientists at all academic levels, this five volume set provides the latest findings in nuclear data and experimental techniques, reactor physics, kinetics, dynamics and control. Readers will also find a detailed description of data assimilation, model validation and calibration, sensitivity and uncertainty analysis, fuel management and cycles, nuclear reactor types and radiation shielding. A discussion of radioactive waste disposal, safeguards and non-proliferation, and fuel processing with partitioning and transmutation is also included. As nuclear technology becomes an important resource of non-polluting sustainable energy in the future, The Handbook of Nuclear Engineering is an excellent reference for practicing engineers, researchers and professionals.

Features

The Handbook of Nuclear Engineering is an authoritative compilation of information regarding methods and data used in all phases of nuclear engineering. Addressing nuclear engineers and scientists at all academic levels, this five volume set provides the latest findings in nuclear data and experimental techniques, reactor physics, kinetics, dynamics and control. Readers will also find a detailed description of data assimilation, model validation and calibration, sensitivity and uncertainty analysis, fuel management and cycles, nuclear reactor types and radiation shielding. A discussion of radioactive waste disposal, safeguards and non-proliferation, and fuel processing with partitioning and transmutation is also included. As nuclear technology becomes an important resource of non-polluting sustainable energy in the future, The Handbook of Nuclear Engineering is an excellent reference for practicing engineers, researchers and professionals.

Fields of interest

Nuclear Engineering; Nuclear Chemistry; Energy Technology; Nuclear Physics, Heavy Ions, Hadrons; Nuclear Energy

Target groups

Research

Type of publication

Handbook

Available

2010. 3600 p. 400 illus. Print + eReference

2.125,00 €
Rotor dynamics is an important branch of dynamics that deals with behavior of rotating machines ranging from very large systems like power plant rotors, for example, a turbogenerator, to very small systems like a tiny dentist’s drill, with a variety of rotors such as pumps, compressors, steam/gas turbines, motors, turbopumps etc. as used for example in process industry, falling in between. The speeds of these rotors vary in a large range, from a few hundred RPM to more than a hundred thousand RPM. Complex systems of rotating shafts depending upon their specific requirements, are supported on different types of bearings. There are rolling element bearings, various kinds of fluid film bearings, foil and gas bearings, magnetic bearings, to name but a few. The present day rotors are much lighter, handle a large amount of energy and fluid mass, operate at much higher speeds, and therefore are most susceptible to vibration and instability problems. This has given rise to several interesting physical problems.

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Image-Based Computational Modeling of the Human Circulatory and Pulmonary Systems

Methods and Applications

Image-Based Computational Modeling of the Human Circulatory and Pulmonary Systems provides an overview of the current modeling methods and applications enhancing interventional treatments and computer-aided surgery. A detailed description of the techniques behind image acquisition, processing and three-dimensional reconstruction is included. Techniques for the computational simulation of solid and fluid mechanics and structure interaction are also discussed, in addition to various cardiovascular and pulmonary applications. Engineers and researchers involved with image processing and computational modeling of human organ systems will find this a valuable reference.

Features
Image-Based Computational Modeling of the Human Circulatory and Pulmonary Systems provides an overview of the current modeling methods and applications enhancing interventional treatments and computer-aided surgery. A detailed description of the techniques behind image acquisition, processing and three-dimensional reconstruction are included. Techniques for the computational simulation of solid and fluid...[-]

Contents

Fields of interest
Biomedical Engineering; Imaging / Radiology; Simulation and Modeling; Classical Continuum Physics; Signal, Image and Speech Processing

Target groups
Research

Type of publication
Monograph

Available
2011. XX, 465 p. 125 illus. Hardcover

169,95 €
ISBN 978-1-4419-7349-8

Intelligent Networking, Collaborative Systems and Applications

Current companies and communities of practice are involved in intensive networking and collaborative systems by a great variety of electronic relations and collaborative interactions. This has resulted in entangled systems that need to be managed efficiently and in an autonomous way, thus facing many issues and challenges. The extensive research produced in this book will help virtual organizations to exploit latest and powerful technologies based on Grid and Wireless infrastructures as well as Cloud computing in order to alleviate complex issues and challenges arisen in networking and collaborative systems, in terms of collaborative applications, resource management, mobility, and security and system resilience. The ultimate aim of the book is to stimulate research that leads to the creation of responsive environments for networking and, at longer-term, the development of adaptive, secure, mobile, and intuitive intelligent systems for collaborative work and learning. Academic researchers...[-]

Features
Current companies and communities of practice are involved in intensive networking and collaborative systems by a great variety of electronic relations and collaborative interactions. This has resulted in entangled systems that need to be managed efficiently and in an autonomous way, thus facing many issues and challenges. The extensive...[-]

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics); Statistical Physics, Dynamical Systems and Complexity

Target groups
Research

Type of publication
Monograph

Available
2011. 310 p. (Studies in Computational Intelligence, Vol. 329) Hardcover

129,95 €
ISBN 978-3-642-16792-8


**Intermediate Mechanics of Materials**

This book covers the essential topics for a second-level course in strength of materials or mechanics of materials, with an emphasis on techniques that are useful for mechanical design. Design typically involves an initial conceptual stage during which many options are considered. At this stage, quick approximate analytical methods are crucial in determining which of the initial proposals are feasible. The ideal would be to get within 30% with a few lines of calculation. The designer also needs to develop experience as to the kinds of features in the geometry or the loading that are most likely to lead to critical conditions. With this in mind, the author tries wherever possible to give a physical and even an intuitive interpretation to the problems under investigation. For example, students are encouraged to estimate the location of weak and strong bending axes and the resulting neutral axis of bending before performing calculations, and the author discusses ways of getting good accuracy with a...

**Features**

This book covers the essential topics for a second-level course in strength of materials or mechanics of materials, with an emphasis on techniques that are useful for mechanical design. Design typically involves an initial conceptual stage during which many options are considered. At this stage, quick approximate...[

**Contents**

Introduction. - 1.1 The Engineering design process. - 1.2 Design optimization. - 1.2.1 Predicting the behaviour of the component. - 1.2.2 Approximate solutions. - 1.3 Relative magnitude of different effects. - 1.4 Formulating and solving problems. - 1.4.1 Use of procedures. - 1.4.2 Inverse problems. - 1.4.3 Physical uniqueness and existence arguments. - 1.5 Review of elementary mechanics of materials. - 1.5.1 Definition of stress components. - 1.5.2 Transformation of stress components. - 1.5.3 Displacement and strain. - 1.5.4 Hooke's law. - 1.5.5 Bending of beams. - 1.5.6 Torsion of circular bars. - 1.6...[

**Fields of interest**

Continuum Mechanics and Mechanics of Materials; Characterization and Evaluation of Materials; Mechanical Engineering; Civil Engineering

**Target groups**

Graduate

**Type of publication**

Graduate/advanced undergraduate textbook

**Location, Localization, and Localizability**

Location-awareness Technology for Wireless Networks

This book reflects up-to-date research, fundamental theories, and key techniques of wireless localization technology and error-controlling techniques. It also presents and discusses the issue of localizability, as well as privacy issues associated with LBS. This book encompasses the significant and quickly growing area of wireless localization technology. It presents comprehensive and up-to-date research in both fundamental theories and key techniques of network localization. In addition to localization approaches, it also is the first book to address the issue of localizability. The privacy issue of LBS technology is also discussed.

**Features**

Title: Location, Localization, Localizability Authors: Yunhao Liu Zheng Yang With the popularity of wireless networks, location-based service has become increasingly prevalent in our lives, and its applications range far and wide. For instance, E-911 in the United States, or corresponding E-112 in Europe, offers timely and accurate assistance to the emergency callers by locating them through mobile...[

**Contents**


**Fields of interest**

Signal, Image and Speech Processing; Communications Engineering, Networks; Information Systems and Communication Service

**Target groups**

Research

**Type of publication**

Monograph

**Available**

2011. XIV, 150 p. 100 illus. Hardcover

99,95 €


**Low-Power High-Resolution Analog to Digital Converters**

Design, Test and Calibration

With the fast advancement of CMOS fabrication technology, more and more signal-processing functions are implemented in the digital domain for a lower cost, lower power consumption, higher yield, and higher re-configurability. This has recently generated a great demand for low-power, low-voltage A/D converters that can be realized in a mainstream deep-submicron CMOS technology. However, the discrepancies between lithography wavelengths and circuit feature sizes are increasing. Lower power supply voltages significantly reduce noise margins and increase variations in process, device and design parameters. Consequently, it is steadily more difficult to control the fabrication process precisely enough to maintain uniformity. The inherent randomness of materials used in fabrication at nanoscopic scales means that performance will be increasingly variable, not only from die-to-die but also within each individual die. Parametric variabil...[

**Contents**


**Fields of interest**

Electronics and Microelectronics, Instrumentation; Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

**Target groups**

Research

**Type of publication**

Graduate/advanced undergraduate textbook

**Available**

2011. XX, 250 p. 100 illus. in color. (Analog Circuits and Signal Processing) Hardcover

99,95 €

Low-Power Variation-Tolerant Design in Nanometer Silicon

Design considerations for low-power operations and robustness with respect to variations typically impose contradictory requirements. Low-power design techniques such as voltage scaling, dual-threshold assignment and gate sizing can have large negative impact on parametric yield under process variations. This book focuses on circuit/architectural design techniques for achieving low power operation under parameter variations. We consider both logic and memory design aspects to cover modeling and analysis, as well as design methodology to achieve simultaneously low power and variation tolerance, while minimizing design overhead. This book will discuss current industrial practices and emerging challenges at future technology nodes.

Features
Low-Power Variation-Tolerant Design in Nanometer Silicon Edited by: Swarup Bhunia Saibal Mukhopadhyay Design considerations for low-power operations and robustness with respect to variations typically impose contradictory requirements. Low-power design techniques such as voltage scaling, dual-threshold assignment and gate sizing can have large negative impact on parametric yield under process ...

Contents

Fields of interest
Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups
Research

Type of publication
Monograph

Available
2011. X, 240 p. 100 illus. Hardcover

99.95 €
ISBN 978-1-4419-7417-4

MEMS Reliability

The successful launch of viable MEMS product hinges on MEMS reliability, the reliability and qualification for MEMS based products is not widely understood. Companies that have a deep understanding of MEMS reliability view the information as a competitive advantage and are reluctant to share it. MEMS Reliability, focuses on the reliability and manufacturability of MEMS at a fundamental level by addressing process development and characterization, material property characterization, failure mechanisms and physics of failure (POF), design strategies for improving yield, design for reliability (DFR), packaging and testing.

Features
Successfully bringing MEMS-based products to market hinges on engineering the component to have sufficient reliability for the intended application, yet the reliability and qualification methodology for MEMS based products is not widely understood. Companies that have a deep understanding of MEMS reliability because of specific high volume manufacturing experience generally view the details of a reliability ...

Contents

Fields of interest
Electronics and Microelectronics, Instrumentation

Target groups
Research

Type of publication
Professional book

Available

99,95 €
ISBN 978-1-4419-6017-7

Machining with Abrasives

Abrasive machining is one of the most important processes used in manufacturing engineering to remove unwanted material and to obtain the desired geometry and surface quality. Abrasive machining processes are processes where material is removed from a work piece using a multitude of hard angular abrasive particles or grains which may or may not be bonded to form a tool. Abrasive Machining discusses the fundamentals and advances in the abrasive machining processes, and provides a complete overview of the newly developing areas in the field including but not limited to, high efficiency deep grinding and micro and nanogrinding.

Features
Abrasive machining is one of the most important processes used in manufacturing engineering. It is key to removing unwanted material, as well as to obtain the desired geometry and surface quality in manufacturing. "Machining with Abrasives" discusses the fundamentals and advances in the abrasive machining processes, and provides a complete overview of newly-developing areas in the field. Abrasive machining ...

Contents
Abrasive tools and bonding systems:.- Mechanics of grinding:.- Grinding wheel design:.- Dressing of grinding wheels:.- Surface integrity in grinding:.- Process control in grinding:.- Micro- and nanogrinding:.- Loose abrasive machining:.- Impact abrasive machining.

Fields of interest
Operating Procedures, Materials Treatment; Electronics and Microelectronics, Instrumentation; Mechanical Engineering

Target groups
Research

Type of publication
Monograph

Available
2011. XIV, 423 p. Hardcover

129,95 €
ISBN 978-1-4419-7301-6
Manufacturing Systems Modeling and Analysis

This text presents the practical application of queueing theory results for the design and analysis of manufacturing and production systems. This textbook makes accessible to undergraduates and beginning graduates many of the seemingly esoteric results of queueing theory. In an effort to apply queueing theory to practical problems, there has been considerable research over the previous few decades in developing reasonable approximations of queueing results. This text takes full advantage of these results and indicates how to apply queueing approximations for the analysis of manufacturing systems. Support is provided through the web site http://msma.tamu.edu. Students will have access to the answers of odd numbered problems and instructors will be provided with a full solutions manual, Excel files when needed for homework, and computer programs using Mathemtica that can be used to solve homework and develop additional problems or term projects. In this second edition a separate appendix dealing with [...] 

Features
This text presents the practical application of queueing theory results for the design and analysis of manufacturing and production systems. This textbook makes accessible to undergraduates and beginning graduates many of the seemingly esoteric results of queueing theory. In an effort to apply queueing theory to practical problems, there has been considerable research over the previous few decades in [...] 

Contents

Fields of interest
Engineering Economics, Organization, Logistics, Marketing, Production / Logistics, Simulation and Modeling; Statistical Physics, Dynamical Systems and Complexity 

Target groups
Upper undergraduate 

Type of publication
Graduate/advanced undergraduate textbook 

Mass Customization
Engineering and Managing Global Operations

Mass customization (MC) has been hailed as a successful operations strategy across manufacturing and service industries for the past three decades. However, the wider implications of using MC approaches in the broader industrial and economic environment are not yet clearly understood. Mass Customization: Engineering and Managing Global Operations presents emerging research on the role of MC and personalization in today’s international operations context. The chapters cover MC in the context of global industrial economics and operations. Moreover, the book discusses MC topics that are relevant to the manufacturing and service sectors, such as: • product platforms; • learning curve modeling; • additive manufacturing; and • service customization. Case studies in manufacturing (e.g., apparel and transportation) and services (e.g., banking and virtual worlds) are also included. Mass Customization: Engineering and Managing Global Operations is a valuable text for mass customization researchers and [...] 

Features
Mass customization (MC) has been hailed as a successful operations strategy across manufacturing and service industries for the past three decades. However, the wider implications of using MC approaches in the broader industrial and economic environment are not yet clearly understood. Mass Customization: Engineering and Managing Global Operations presents emerging research on the role of MC and personalization in today’s international operations context. The chapters cover MC in the context of global industrial economics and operations. Moreover, the book discusses MC topics that are relevant to the manufacturing and service sectors, such as: • product platforms; • learning curve modeling; • additive manufacturing; and • service customization. Case studies in manufacturing (e.g., apparel and transportation) and services (e.g., banking and virtual worlds) are also included. Mass Customization: Engineering and Managing Global Operations is a valuable text for mass customization researchers and [...] 

Contents

Fields of interest
Manufacturing, Machines, Tools; Operation Research / Decision Theory; Industrial Organization 

Target groups
Research 

Type of publication
Monograph 

Microsystems Dynamics
In recent years microelectromechanical systems (MEMS) have emerged as a new technology with enormous application potential. MEMS manufacturing techniques are essentially the same as those used in the semiconductor industry, therefore they can be produced in large quantities at low cost. The added benefits of lightweight, miniature size and low energy consumption make MEMS commercialization very attractive. Modeling and simulation is an indispensable tool in the process of studying these new dynamic phenomena, development of new microdevices and improvement of the existing designs. MEMS technology is inherently multidisciplinary since operation of microdevices involves interaction of several energy domains of different physical nature, for example, mechanical, fluidic and electric forces. Dynamic behavior of contact-type electrostatic microactuators, such as microswitches, is determined by nonlinear fluidic-structural, electrostatic-structural and vibro-impact interactions. The latter is [...] 

Features
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Contents

Fields of interest
Nanotechnology and Microengineering; Engineering Design; Structural Mechanics; Computational Intelligence; Continuum Mechanics and Mechanics of Materials 

Target groups
Research 

Type of publication
Monograph 

Available
2011, XVI, 338 p. 91 illus. Hardcover 

69,95 € 
ISBN 978-3-642-16617-4
M. Iguchi, Hokkaido University, Sapporo, Japan; O.J. Ilegbusi, University of Central Florida, Orlando, FL, USA

Modeling Multiphase Materials Processes

Gas-Liquid Systems

Modeling Multiphase Materials Processes: Gas-Liquid Systems describes the methodology and application of physical and mathematical modeling to multi-phase flow phenomena in materials processing. The book focuses on systems involving gas-liquid interaction, the most prevalent in current metallurgical processes. The performance characteristics of these processes are largely dependent on transport phenomena. This volume covers the inherent characteristics that complicate the modeling of transport phenomena in such systems, including complex multiphase structure, intense turbulence, opacity of fluid, high temperature, coupled heat and mass transfer, chemical reactions in some cases, and poor wettability of the reactor walls. Also discussed are: Solutions based on experimental and numerical modeling of bubbling jet systems - Recent advances in the modeling of nanoscale multi-phase phenomena - Multiphase flows in micro-scale and nano-scale channels and reactors - Modeling Multiphase Materials Processes:...

Features

Modeling Multiphase Materials Processes: Gas-Liquid Systems describes the methodology and application of physical and mathematical modeling to multi-phase flow phenomena in materials processing. The book focuses on systems involving gas-liquid interaction, the most prevalent in current metallurgical processes. The performance characteristics of these processes are largely dependent on transport phenomena.

Fields of interest
Appl. Mathematics / Computational Methods of Engineering; Surfaces and Interfaces, Thin Films; Engineering Thermodynamics, Heat and Mass Transfer

Target groups
Research

Type of publication
Monograph

Available
99.95 €

K. Arzewska, Warsaw University of Technology, Poland; W. Blajer, Technical University of Radom, Poland; J. Fraczek, Warsaw University of Technology, Poland; M. Wojtysa, Warsaw University of Technology, Poland (Eds.)

Multibody Dynamics

Computational Methods and Applications

The ECCOMAS Thematic Conference “Multibody Dynamics 2009” was held in Warsaw, representing the fourth edition of a series which began in Lisbon (2003), and was then continued in Madrid (2005) and Milan (2007), held under the auspices of the European Community on Computational Methods in Applied Sciences (ECCOMAS). The conference provided a forum for exchanging ideas and results of several topics related to computational methods and applications in multibody dynamics, through the participation of 219 scientists from 27 countries, mostly from Europe but also from America and Asia. This book contains the revised and extended versions of invited conference papers, reporting on the state-of-the-art in the advances of computational multibody models, from the theoretical developments to practical engineering applications. By providing a helpful overview of the most active areas and the recent efforts of many prominent research groups in the field of multibody dynamics, this book can be highly valuable.

Features

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Contents


Fields of interest
Vibration, Dynamical Systems, Control; Mechanical Engineering; Computational Intelligence

Target groups
Research

Type of publication
Monograph

Available
139.95 €

S. Carrara, Ecole Polytechnique Fédéral de Lausanne, Switzerland (Ed.)

Nano-Bio-Sensing

The application of circuits and systems and engineering principles to problems in the medicine has led to the emergence of biomedical circuits and systems as an exciting and rapidly growing area of research. Nanotechnology provides new nano-structured materials with amazing properties. The properties offered by nanomaterials can be applied to develop advanced instrumentation for biomedical diagnostics and personalized therapy, as well as biosensing in the environment. Biotechnology provides new biochemical materials with novel properties to be applied to develop new performances in sensing techniques. These advancements in Nano- and Bio-technologies will lead to new concepts and applications for nano-bio-sensing systems. This book offers an invaluable reference to the state-of-the-art applications of nano-bio-sensing. It brings together expertise of researchers from the fields of nano-electronics and bio-technology, providing multidisciplinary content from nano-structures fabrication to...

Features

Nano-Bio-Sensing edited by: Sandro Carrara With Foreword by Giovanni De Micheli The application of engineering principles to problems in medicine has led to the emergence of biomedical circuits and systems as an exciting and rapidly growing area of research. Nanotechnology provides new structured materials with amazing properties, which can be applied to develop advanced instrumentation for biomedical...

Contents


Fields of interest
Circuits and Systems; Nanotechnology and Micro-engineering; Biomaterials

Target groups
Research

Type of publication
Monograph

Available
2011. X, 248 p. 100 illus. Hardcover
99.95 €
ISBN 978-1-4419-6168-6
New Trends in Vibration Based Structural Health Monitoring

This book is a collection of articles covering the six lecture courses given at the CISM School on this topic in 2008. It features contributions by established international experts and offers a coherent and comprehensive overview of the state-of-the-art research in the field, thus addressing both postgraduate students and researchers in aerospace, mechanical and civil engineering.

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Fields of interest
Mechanical Engineering; Aerospace Technology and Astronautics; Civil Engineering; Vibration, Dynamical Systems, Control

Target groups
Graduate

Type of publication
Contributed volume

Available
2011. VIII, 302 p. 149 illus. (CISM International Centre for Mechanical Sciences, Vol. 520)
149,00 €
ISBN 978-3-7091-0398-2

New World Situation: New Directions in Concurrent Engineering

The proceedings contain papers accepted for the XVIIth ISPE International Conference on Concurrent Engineering, held in Cracow, Poland, September 6-10, 2010. No matter how diversified concurrent engineering (CE) may be, there is certainly a direction common to all the CE research and applications. The reader will find that, although each paper deals with different issues, the main thrust of most of the papers contained in New World Situation: New Directions in Concurrent Engineering is towards the human, i.e., viewing a designer as human, engineer as human, customer as human, and even a knowledge engineering as human. This trend is also reflected in session organization: design knowledge utilization and knowledge engineering, product design and development, lean product development, human centric product design and development, advanced manufacturing and mass customization, and advanced manufacturing.

Features
Over more than twenty years, numerous new concepts, methodologies and tools have been developed within the context of concurrent engineering (CE). During this period, the background for engineering/manufacturing has changed extensively. Now, industry has to work with global markets. This globalization has brought forth a new network of experts and companies across many different domains and fields in [...]
Nonlinear Continuum Mechanics and Large Inelastic Deformations

The book provides a rigorous axiomatic approach to continuum mechanics under large deformation. In addition to the classical nonlinear continuum mechanics – kinematics, fundamental laws, the theory of functions having jump discontinuities across singular surfaces, etc. - the book presents the theory of co-rotational derivatives, dynamic deformation compatibility equations, and the principles of material indifference and symmetry, all in systematized form. The focus of the book is a new approach to the formulation of the constitutive equations for elastic and inelastic continua under large deformation. This new approach is based on using energetic and quasi-energetic couples of stress and deformation tensors. This approach leads to a unified treatment of large, anisotropic elastic, viscoelastic, and plastic deformations. The author analyses classical problems, including some involving nonlinear wave propagation, using different models for continua under large deformation, and shows how.[...]

Contents

Fields of interest
Continuum Mechanics and Mechanics of Materials; Mechanical Engineering; Computational Intelligence; Classical Continuum Physics; Materials Science (general)

Target groups
Research

Nonlinear Mechanics of Crystals

This book describes behavior of crystalline solids primarily via methods of modern continuum mechanics. Emphasis is given to geometrically nonlinear descriptions, i.e., finite deformations. Primary topics include anisotropic elastic elasticity, plasticity, and methods for representing effects of defects in the solid on the material's mechanical response. Defects include crystal dislocations, point defects, twins, voids or pores, and micro-cracks. Thermoelectric, dielectric, and piezoelectric behaviors are addressed. Traditional and higher-order gradient theories of mechanical behavior of crystalline solids are discussed. Differential geometric representations of kinematics of finite deformations and lattice defect distributions are presented. Multi-scale modeling concepts are described in the context of elastic and plastic material behavior. Representative substances towards which modeling techniques may be applied are single- and poly- crystalline metals and alloys, ceramics, and minerals. This book.[...]

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Fields of interest
Continuum Mechanics and Mechanics of Materials; Characterization and Evaluation of Materials; Crystallography

Target groups
Research

Numerical Analysis; Applications of Mathematics

Complexity; Statistical Physics, Dynamical Systems

Fields of interest
Complexity; Statistical Physics, Dynamical Systems and Complexity; Computational Mathematics and Numerical Analysis; Applications of Mathematics

Nonlinear Science and Complexity

This book contains selected papers of NSC08, the 2nd Conference on Nonlinear Science and Complexity, held 28-31 July, 2008, Porto, Portugal. It focuses on fundamental theories and principles, analytical and symbolic approaches, computational techniques in nonlinear physics and mathematics. Topics treated include • Chaotic Dynamics and Transport in Classic and Quantum Systems • Complexity and Nonlinearity in Molecular Dynamics and Nano-Science • Complexity and Fractals in Nonlinear Biological Physics and Social Systems • Lie Group Analysis and Applications in Nonlinear Science • Nonlinear Hydrodynamics and Turbulence • Bifurcation and Stability in Nonlinear Dynamic Systems • Nonlinear Oscillations and Control with Applications • Celestial Physics and Deep Space Exploration • Nonlinear Mechanics and Nonlinear Structural Dynamics • Non-smooth Systems and Hybrid Systems • Fractional dynamical systems

Features
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Contents
Part I Nonlinear Dynamics of Continuous and Discontinuous Dynamical Systems; Part II Lie Group Analysis and Applications in Nonlinear Sciences; Part III Celestial Mechanics and Dynamical Astronomy: Methods and Applications; Part IV Mathematical Modeling of Nonlinear Structures in Bose-Einstein; Part V Mathematical Models in Engineering; Part VI Fractional Calculus Applications; Part VII Computational Techniques for Engineering Sciences; Part VIII Nonlinear Systems; Index

Fields of interest
Complexity; Statistical Physics, Dynamical Systems and Complexity; Computational Mathematics and Numerical Analysis; Applications of Mathematics

Target groups
Research
Operation of a Cryogenic Rocket Engine
An Outline with Down-to-Earth and Up-to-Space Remarks

This book presents the operational aspects of the rocket engine on a test facility. It will be useful to engineers and scientists who are in touch with the test facility. To aerospace students it shall provide an insight of the job on the test facility. And to interested readers it shall provide an impression of this thrilling area of aerospace.

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Contents

Fields of interest
Aerospace Technology and Astronautics; Engineering Thermodynamics; Heat and Mass Transfer

Target groups
Research

Type of publication
Monograph

Available
2011. XVI, 142 p. 80 illus., 5 in color (Springer Aerospace Technology) Hardcover
99,95 €
ISBN 978-3-642-10564-7

Progress in Wall Turbulence: Understanding and Modeling
Proceedings of the WALLTURB International Workshop held in Lille, France, April 21-23, 2009

This book will consist of a coherent collection of recent results on near wall turbulence including theory, new experiments, DNS, and modeling with RANS, LES and Low Order Dynamical Systems.

Features
This book brings together selected contributions from the WALLTURB workshop on “Understanding and modelling of wall turbulence” held in Lille, France, on April 21st to 23rd 2009. This workshop was organized by the WALLTURB consortium, in order to present to the relevant scientific community the main results of the project and to stimulate scientific discussions around the subject of wall turbulence. The [...]
Renewable Energies in Germany’s Electricity Market

A Biography of the Innovation Process

This cross-sectional, interdisciplinary study traces the “history of innovation” of renewable energies in Germany. It features five renewable energy sectors of electricity generation: biomass, photovoltaic, wind energy, geothermal energy and hydropower. The study tracks the development of the respective technologies as well as their contribution to electricity generation. It focuses on driving forces and constraints for renewable energies in the period between 1990 and today.

Features
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Contents

Fields of interest
Renewable and Green Energy; Political Science; Environment (general); Nature Conservation; Environmental Law / Policy / Ecojustice; Climate Change

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XX, 408 p. 44 illus., 37 in color. Hardcover

Robot and Multibody Dynamics

Analysis and Algorithms

Robot and Multibody Dynamics: Analysis and Algorithms provides a comprehensive and detailed exposition of a new mathematical approach, referred to as the Spatial Operator Algebra (SOA), for studying the dynamics of articulated multibody systems. The approach is useful in a wide range of applications including robotics, aerospace systems, articulated mechanisms, bio-mechanics and molecular dynamics simulation. The book also: - Treats algorithms for simulation, including an analysis of complexity of the algorithms - Describes one universal, robust, and analytically sound approach to formulating the equations that govern the motion of complex multi-body systems - Covers a range of more advanced topics including under-actuated systems, flexible systems, linearization, diagonalized dynamics and space manipulators. Robot and Multibody Dynamics: Analysis and Algorithms will be a valuable resource for researchers and engineers looking for new mathematical approaches to finding engineering solutions in[...]

Features
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Contents

Fields of interest
Theoretical and Applied Mechanics; Vibration, Dynamical Systems; Control; Statistical Physics, Dynamical Systems and Complexity

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XX, 512 p. Hardcover
169,95 € ISBN 978-1-4419-7266-8

Robotic Systems for Handling and Assembly

Although parallel robots are known to offer many advantages with respect to accuracy, dynamics, and stiffness, major breakthroughs in industrial applications have not yet taken place. This is due to a knowledge gap preventing fast and precise execution of industrial handling and assembly tasks. This book focuses on the design, modeling, and control of innovative parallel structures as well as the integration of novel machine elements. Special attention is paid to the integration of active components into lightweight links and passive joints. In addition, new control concepts are introduced to minimize structural vibrations. Although the optimization of robot systems itself allows a reduction of cycle times, these can be further decreased by improved path planning, robot programming, and automated assembly planning concepts described by 25 contributions within this book. The content of this volume is subdivided into four main parts dealing with Modeling and Design, System Implementation, Control and[...]

Features
Although parallel robots are known to offer many advantages with respect to accuracy, dynamics, and stiffness, major breakthroughs in industrial applications have not yet taken place. This is due to a knowledge gap preventing fast and precise execution of industrial handling and assembly tasks. This book focuses on the design, modeling, and control of innovative parallel structures.[...]

Contents

Fields of interest
Robotics and Automation; Artificial Intelligence (incl. Robotics)

Target groups
Research

Type of publication
Monograph

Available
119,95 € ISBN 978-3-642-16784-3
Robotics Research

The International Symposium of Robotics Research (ISRR) continues to be the premiere meeting of the International Foundation of Robotics Research (IFRR). The 13th International Symposium of Robotics Research took place Novemb3r 26-29, 2007, in Hiroshima, Japan, and was organized by the two editors of this book. This volume brings a collection of a broad range of topics in robotics. The content of these contributions provides a wide coverage of the current state of robotics research: the advances and challenges in its theoretical foundation and technology basis, and the developments in its traditional and novel areas of applications. Historically, the proceedings of the ISRR have featured ground-breaking work of the highest caliber, which influenced generations to come. The present volume promises to be no exception. The collection of scientific articles in this volume provides new insights to important problems in robotics, written by some of the leaders in the field.

Features

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Spoken Dialogue Systems Technology and Design

Spoken Dialogue Systems Technology and Design covers key topics in the field of spoken language dialogue interaction from a variety of leading researchers. It brings together several perspectives in the areas of corpus annotation and analysis, dialogue system construction, as well as theoretical perspectives on communicative intention, context-based generation, and modelling of discourse structure. These topics are all part of the general research and development within the area of discourse and dialogue with an emphasis on dialogue systems; corpora and corpus tools and semantic and pragmatic modelling of discourse and dialogue.

Features
Spoken Dialogue Systems Technology and Design covers all key topics in spoken language dialogue interaction, through perspectives from a variety of leading researchers. This volume brings together valuable information in the areas of spoken dialogue analysis, processing emotions in dialogue, multimodality, as well as resources and evaluation. The book also highlights comprehensive [...]

Contents
Thermo-Fluid Dynamics of Two-Phase Flow

Thermo-fluid Dynamics of Two-Phase Flow, Second Edition is focused on the fundamental physics of two-phase flow. The authors present the detailed theoretical foundation of multi-phase flow thermo-fluid dynamics as they apply to: Nuclear reactor transient and accident analysis, Energy systems, Power generation systems, Chemical reactors and process systems, Space propulsion, Transport processes. This edition features updates on two-phase flow formulation and constitutive equations and CFD simulation codes such as FLUENT and CFX, new coverage of the lift force model, which is of particular significance for those working in the field of computational fluid dynamics, new equations and coverage of 1 dimensional drift flux models and a new chapter on porous media formulation.

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Contents

Part II: Two-Phase Flow Equations Based on Time-Averaged Flows.
Part III: Three-Dimensional Model Based on Time-Averaged Flows.
Part IV: One-Dimensional Model Based on Time-Averaged Flows.

Fields of interest

Engineering Fluid Dynamics; Energy Technology; Thermodynamics; Biochemical Engineering; Energy; general

Target groups

Research

Type of publication

Monograph

Available

2011. XXII, 518 p. 100 illus. Hardcover
129,95 €
ISBN 978-1-4419-7984-1

Ultra-thin Chip Technology and Applications

Ultra-thin chips are the “smart skin” of a conventional silicon chip. This book shows how very thin and flexible chips can be fabricated and used in many new applications in microelectronics, Microsystems, biomedical and other fields. It provides a comprehensive reference to the fabrication technology, post-processing, characterization and the applications of ultra-thin chips.

Features

Ultra-thin Chip Technology and Applications edited by: Joachim N. Burghartz Ultra-thin chip technology has the potential to provide solutions for overcoming bottlenecks in silicon technology and for leading to new applications. This book shows how very thin and flexible chips can be fabricated and used in many new applications in microelectronics, Microsystems, biomedical and other fields. It provides [...] 

Contents

Fabrication technologies for ultra-thin chips, Post-processing techniques and issues, Properties of ultra-thin chips, Applications.

Fields of interest

Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups

Research

Type of publication

Monograph

Available

2011. XXII, 467 p. 252 illus., 157 in color. Hardcover
129,95 €
ISBN 978-1-4419-7275-0

Environmental Heavy Metal Pollution and Effects on Child Mental Development

Risk Assessment and Prevention Strategies

Heavy metals can be emitted into environment by both natural and anthropogenic sources, mainly mining and industrial activity. Human exposure occurs through all environmental media. Infants are more susceptible to the adverse effects of exposure. Increasing attention is now being paid to the mental development of children exposed to heavy metals. The purpose of this book is to evaluate the existing knowledge on intellectual impairment in children exposed to heavy metals and to identify the research needs in order to obtain a clearer picture of the situation in countries and regions at risk, in which the economy is closely related to metallurgy and heavy metals emission, and to recommend a strategy for human protection. In greater detail the main objectives could be formulated as follows: to review the principal sources of single, and complex mixtures of, heavy metal pollutants in the environment; to identify suitable methodology for chemical analyses in the environment; [...] 

Features

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Contents

Preface; Acknowledgements; List of contributors. Environmental Heavy Metals and Mental Disorders of Children in Developing Countries. Exposure Assessment to Heavy Metals in the Environment. Measures to Eliminate or Reduce the Exposure to Critical Receptors. Heavy Metals Activity Mechanisms at Cellular Level and Possible Action on Children Bodies. Evolving Understanding of the Relationship between Mercury Exposure and Autism. Hearing Changes in Children Exposed to Arsenic in Neurotoxicity Context. Lead Occurrence in Children’s Biological Fluids from Baa Mare Area, Romania. [...] 

Fields of interest

Environmental Chemistry; Environmental Health; Analytical Chemistry; Ecotoxicology; Industrial Pollution Prevention

Target groups

Graduate

Type of publication

Proceedings
Heavy metals can be emitted into the environment by both natural and anthropogenic sources, mainly mining and industrial activity. Human exposure occurs through all environmental media. Infants are more susceptible to the adverse effects of exposure. Increasing attention is now being paid to the mental development of children exposed to heavy metals. The purpose of this book is to evaluate the existing knowledge on intellectual impairment in children exposed to heavy metals in their living environment and to identify the research needs in order to obtain a clearer picture of the situation in countries and regions at risk, in which the economy is closely related to metallurgy and heavy metals emission, and to recommend a strategy for human protection. In greater detail the main objectives could be formulated as follows: to review the principal sources of single, and complex mixtures of, heavy metal pollutants in the environment; to identify suitable methodology for chemical analyses in the environment...
First Principles of Meteorology and Air Pollution

This book's main objective is to decipher for the reader the main processes in the atmosphere and the quantification of air pollution effects on humans and the environment, through first principles of meteorology and modelling/measurement approaches. The understanding of the complex sequence of events, starting from the emission of air pollutants into the atmosphere to the human health effects as the final event, is necessary for the prognosis of potential risk to humans from specific chemical compounds and mixtures of them. It fills a gap in the literature by providing a solid grounding in the first principles of meteorology and air pollution, making it particularly useful for undergraduate students. Its broad scope makes it a valuable text in many related disciplines, containing a comprehensive and integrated methodology to study the first principles of air pollution, meteorology, indoor air pollution, and human exposure. Problem-solving exercises help to reinforce concepts.

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- Problem-solving exercises help to reinforce concepts.

Contents
- Earth’s atmosphere
- First principles of meteorology
- Atmospheric circulation
- Atmospheric chemistry
- Atmospheric dispersion
- Gaussian models
- Atmospheric models
- Emissions of pollutants
- Indoor air pollution
- Human exposure and health risk from air pollutants
- Appendix
- Index

Fields of interest
- Atmospheric Protection / Air Quality Control / Air Pollution
- Meteorology / Climatology / Environmental Health

Target groups
- Lower undergraduate

Type of publication
- Monograph

Available
- 129,95 €
- ISBN 978-94-007-0161-8

Landscape Development and Climate Change in Southwest Bulgaria (Pirin Mountains)

Landscape Development and Climate Change in Southwest Bulgaria aims to address some of the current limitations in our understanding of past Balkan climate and environment. High mountains and their ecosystems offer an outstanding opportunity for studies on the impact of climate change. The Balkan Mountains in Southeast Europe, situated at the transition between temperate and Mediterranean climate, are considered as very sensitive to historical and current global changes. The georarchives lake sediment, peat and soil, long living trees and glaciers have been used to reconstruct the climatically-driven change of forest and treeline during the Holocene and the younger past. These processes are interrelated with complex ecological changes, as for example the seasonality of climate parameters. The landscape research approach with the analyses through multi-palaeo-geological proxies is new for the Balkans.

Features
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- The landscape research approach with the analyses through multi-palaeo-geological proxies is new for the Balkans.

Contents
- Preface
- 1 Geoarchives – why the view into the past?
- 2 The Pirin Mountains as a model region
- 3 Holocene climate and landscape chronology
- 4 Climatic data and geo-archives of the younger past
- 5 Specifics of the regional climate and landscape history
- 6 Conclusion and outlook
- Indices

Fields of interest
- Geocology / Natural Processes

Target groups
- Graduate

Type of publication
- Monograph

Available
- 2011. VIII, 161 p. Hardcover
- 99,95 €

Reviews of Environmental Contamination and Toxicology Volume 210

Reviews of Environmental Contamination and Toxicology attempts to provide concise, critical reviews of timely advances, philosophy and significant areas of accomplished or needed endeavor in the total field of xenobiotics, in any segment of the environment, as well as toxicological implications.

Features
- CONTENTS Foreword Preface Attenuation of Chromium Toxicity by Bioremediation Technology
- by Monalisa Mohanty and H. Kumar Patra
- The Effects of Radionuclides on Animal Behaviour by Beatrice Gagnaire, Christelle Adam-Guillermin, Alexandre Bouron, and Philippe Lestaevd
- Illicit Drugs: Contaminants in the Environment and Utility in Forensic Epidemiology by Christian Daughton

Contents
- Foreword
- Preface
- Attenuation of Chromium Toxicity by Bioremediation Technology
- The Effects of Radionuclides on Animal Behaviour
- Illicit Drugs: Contaminants in the Environment and Utility in Forensic Epidemiology

Target groups
- Research

Type of publication
- Contributed volume

Available
- 2011. 95 p. 8 illus. (Reviews of Environmental Contamination and Toxicology, Vol. 210) Hardcover
- 99,95 €
Sustainable Land Management
Learning from the Past for the Future

Soil quality is threatened by many human-induced activities, but can also be improved by good land management. In the relatively short history of mankind on earth, the landscape and soils of the world have been drastically modified from their ‘natural’ state. Landscapes altered by man’s activities are termed ‘Anthroscapes’, which are inextricably linked to culture and history. The challenges for today’s scientists are to devise and implement sustainable land management strategies in order to preserve the land for the benefit of future generations. This book is a valuable compendium of the research experiences so far gained in studies of the concept and future contributions of such research to sustainable development.

Features
Soil quality is threatened by many human-induced activities, but can also be improved by good land management. In the relatively short history of mankind on earth, the landscape and soils of the world have been drastically modified from their ‘natural’ state. Landscapes altered by man’s activities are termed ‘Anthroscapes’, which are inextricably linked to culture and history. The challenges for today’s [..]

Fields of interest
Soil Science & Conservation; Agriculture; Landscape Ecology; Biogeosciences; Geographical Information Systems / Cartography

Target groups
Research

Type of publication
Monograph

Available
2011. XX, 400 p. Hardcover
129.95 €
ISBN 978-3-642-14781-4

Urban Airborne Particulate Matter
Origin, Chemistry, Fate and Health Impacts

This book presents the most up-to-date research and information regarding the origin, chemistry, fate and health impacts of airborne particulate matter in urban areas, a topic which has received a great deal of attention in recent years due to documented relationships between exposure and health effects such as asthma. With internationally recognised researchers and academics presenting their work and key concepts and approaches from a variety of disciplines, including environmental and analytical chemistry, biology, toxicology, mineralogy and the geosciences, this book addresses the topic of urban airborne particulate matter in a comprehensive, multidisciplinary manner. Topics and research addressed in the book range from common methodological approaches used to sample and analyse the composition of airborne particulates to our knowledge regarding their potential to impact human health and the various policy approaches taken internationally to regulate particulate matter levels.

Features
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Contents

Fields of interest
Environmental Chemistry; Climate Change; Ecotoxicology

Target groups
Research

Type of publication
Monograph

Available
199.95 €
ISBN 978-3-642-12277-4

General Science

Change and Continuity in Early Modern Cosmology

Viewed as a flashpoint of the Scientific Revolution, early modern astronomy witnessed a virtual explosion of ideas about the nature and structure of the world. This study explores these theories in a variety of intellectual settings, challenging our view of modern science as a straightforward successor to Aristotelian natural philosophy. It shows how astronomers dealt with celestial novelties by deploying old ideas in new ways and identifying more subtle notions of cosmic rationality. Beginning with the celestial spheres of Peurbach and ending with the evolutionary implications of the new star Mira Ceti, it surveys a pivotal phase in our understanding of the universe as a place of constant change that confirmed deeper patterns of cosmic order and stability.

Features
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Contents

Fields of interest
History of Science; Astronomy, Astrophysics and Cosmology; History of Philosophy; History of Mathematics

Target groups
Research

Type of publication
Contributed volume

Available
99.95 €
ISBN 978-94-007-0036-9
Rural Electrification

Strategies for Distributed Generation

For those in developed nations, suddenly being without electricity is a disaster: power cuts have us fretting over the food stored in the freezer, and even a few hours without lights, televisions, or air conditioning is an ordeal. However, for an estimated 1.6 billion people worldwide, the absence of electricity is their daily experience. An untold number of others live with electricity that is erratic and of very poor quality. How can electric power be brought into their lives when the centralized utility models that have evolved in developed nations are not an economically viable option? Poor, rural communities in developing nations cannot simply be ‘plugged in’ to a grid. Small-scale Distributed Generation (DG), ranging from individual solar home systems to village level grids run off diesel generators, could provide the answer, and this book compares around 20 DG enterprises and projects in Brazil, Cambodia and China, each of which is considered to be a “business model” for distributed rural[...]

Features
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Contents

Fields of interest
Economic Geography

Type of publication
Monograph

Available
2011. XI. 250 p. Hardcover
99,95 €
ISBN 978-3-642-11902-6

The Role of the Regions in EU Governance

This publication compares for the first time how the regions in seven different countries (Austria, Belgium, France, Germany, Italy, Spain and the UK) are involved in EU governance. It is also the first book which tackles this matter from two different perspectives; that of EU law and that of comparative law. It includes contributions both from well-established scholars in the field of EU law and from younger scholars.

Features
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Contents
Regions in the EU: F. Eggermont: In The Name of Democracy: The External Representation of the Regions in the Council.- A. Thies: The Locus Standi of the Regions before EU Courts.- P. Van Nuffel: The Protection of Member States’ Regions through National Patterns: C. Panara: Germany – A Cooperative Solution to the Challenge of the[...]

Fields of interest
European Law / Public International Law; European Integration

Target groups
Research

Type of publication
Monograph

Available
2011. X. 250 p. Hardcover
99,95 €
ISBN 978-3-642-11902-6

Geography

L.P. Martin, University of Guelph, ON, Canada; W. Chesworth, University of Guelph, ON, Canada (Eds.)

Landscapes and Societies

This book contains case histories intended to show how societies and landscapes interact. The range of interest stretches from the small groups of the earliest Neolithic, through Bronze and Iron Age civilizations, to modern nation states. The coexistence is, of its very nature reciprocal, resulting in changes in both society and landscape. In some instances the adaptations may be judged successful in terms of human needs, but failure is common and even the successful cases are ephemeral when judged in the light of history. Comparisons and contrasts between the various cases can be made at various scales from global through inter-regional, to regional and smaller scales. At the global scale, all societies deal with major problems of climate change, sea-level rise, and with ubiquitous problems such as soil erosion and landscape degradation. Inter-regional differences bring out significant detail with one region suffering from drought when another suffers from widespread flooding. For example,[...]

Features
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Contents

Fields of interest
Physical Geography; Geology; Geocoeology / Natural Processes; Archaeology; Climate Change; Landscape Ecology

Target groups
Research

Type of publication
Monograph

Available
2011. XXII. 478 p. 200 illus. Hardcover
129,95 €
**Life Sciences**

J.W. Haycock, University of Sheffield, UK (Ed.)

### 3D Cell Culture

**Methods and Protocols**

Developed for a range of tissues where the culture environment takes into account the spatial organization of the cells therein, 3D cell culture models serve to bridge the gap between in vivo studies at one extreme with that of simple cell monolayers at the other. In 3D Cell Culture: Methods and Protocols, international experts describe a number of basic and applied methodologies taken from a breadth of scientific and engineering disciplines, many of which deal with direct applications of 3D culture models, most notably in the formation of tissues for clinical purpose. Beginning with an overview of the biological and materials scaffold requirements for successfully creating 3D models, the book delves into topics such as general scaffold design and fabrication techniques, models for bone, skin, cartilage, nerve, bladder, and hair follicles, and chapters on bioengineer design, imaging, and stem cells. Written in the highly successful Methods in Molecular Biology™ series format, chapters include brief...[

**Features**

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**Contents**


**Fields of interest**

Cell Biology; Cell Culture

**Target groups**

Professional/practitioner

**Type of publication**

Contributed volume

**Available**


109,95 €

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### Adipose-Derived Stem Cells

**Methods and Protocols**

During the past decade, a wide range of scientific disciplines have adopted the use of adipose-derived stem/stromal cells (ASCs) as an important tool for research and discovery. In Adipose-Derived Stem Cells: Methods and Protocols, experts from the field, including members of the esteemed International Federation of Adipose Therapeutics and Science (IFATS), provide defined and established protocols in order to further codify the utilization of these powerful and accessible cells. With chapters organized around approaches spanning the discovery, pre-clinical, and clinical processes, much of the emphasis is placed on human ASC, while additional techniques involving small and large animal species are included. As a volume in the highly successful Methods in Molecular Biology™ series, the detailed contributions include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes on troubleshooting and...[

**Features**

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**Contents**

Isolation and Culture of Rhesus Adipose-Derived Stem Cells.- Isolation of Human Adipose-Derived Stem Cells from Liposapirates.- Isolation of Murine Adipose-Derived Stem Cells.- In vitro Adult Rat Adipose Tissue-Derived Stromal Cell Isolation and Differentiation.- In vitro Adult Canine Adipose Tissue-Derived Stromal Cell Growth Characteristics.- Adipogenic Differentiation of Adult Equine Mesenchymal Stromal Cells.- Isolation and Culture of Porcine Adipose Tissue-Derived Stromal Cells.- Automated Isolation and Processing of Adipose-Derived Stem and Regenerative Cells.- Methods for the...[

**Fields of interest**

Cell Biology

**Target groups**

Professional/practitioner

**Type of publication**

Contributed volume

**Available**

2011. XVI, 474 p. 82 illus., 7 in color. (Methods in Molecular Biology, Vol. 702) Hardcover

109,95 €
ISBN 978-1-61737-959-8

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### Biofuels

**Global Impact on Renewable Energy, Production Agriculture, and Technological Advancements**

This comprehensive volume developed under the guidance of guest editors Prakash Lakshmanan and David Songstad features broad coverage of the topic of biofuels and its significance to the economy and to agriculture. These chapters were first published by In Vitro Cellular and Developmental Biology In Vitro Plant in 2009 and consists of 15 chapters from experts who are recognized both for their scientific accomplishments and global perspective in their assigned topics.

**Features**

The biofuels area is one the most discussed research areas in biotechnology. This volume summarizes the current state of the art in the context of economic, agricultural productivity and sustainability as well as global perspectives. This volume is an excellent resource of diverse biofuels knowledge organized in sections and specific topics in an easily accessible and readable format. The broad scope of

**Contents**

Chapter 1 : Historical Perspective of Biofuels: Learning from the Past to Re-Discover the Future.- Chapter 2 : The DOE BioEnergy Science Center - a U.S. Department of Energy Bioenergy Research Center.- Chapter 3 : Drivers Leading to Higher Food Prices: Biofuels Are Not the Main Factor.- Chapter 4 : The Economics of Current and Future Biofuels.- Chapter 5 : A multiple species approach to biomass production from native herbaceous perennial feedstocks.- Chapter 6 : Development and status of dedicated energy crops in the United States.- Chapter 7 : Genetic improvement of C4 grasses as...[

**Fields of interest**

Plant Sciences; Plant Genetics and Genomics; Plant Anatomy / Development; Plant Biochemistry

**Target groups**

Graduate

**Type of publication**

Contributed volume

**Available**

2011 VII, 357 p. 40 illus., 28 in color. Hardcover

139,95 €
Bioinformatics for Comparative Proteomics

With the rapid development of proteomic technologies in the life sciences and in clinical applications, many bioinformatics methodologies, databases, and software tools have been developed to support comparative proteomics study. In Bioinformatics for Comparative Proteomics, experts in the field highlight the current status, challenges, open problems, and future trends for developing bioinformatics tools and resources for comparative proteomics research in order to deliver a definitive reference providing both the breadth and depth needed on the subject. Structured in three major sections, this detailed volume covers basic bioinformatics frameworks relating to comparative proteomics, bioinformatics databases and tools for proteomics data analysis, and integrated bioinformatics systems and approaches for studying comparative proteomics in the systems biology context. Written for the highly successful Methods in Molecular Biology series, the contributions in this book provide the meticulous, [...]

Features
With the rapid development of proteomic technologies in the life sciences and in clinical applications, many bioinformatics methodologies, databases, and software tools have been developed to support comparative proteomics study. In Bioinformatics for Comparative Proteomics, experts in the field highlight the current status, challenges, open problems, and future trends for developing bioinformatics tools and [...]
Brassinosteroids: A Class of Plant Hormone

The entire range of the developmental processes in plants is regulated by a shift in the hormonal concentration, tissue sensitivity and their interaction with the factors operating around them. Out of the recognized hormones, attention has largely been focused on five - Auxins, Gibberellins, Cytokinin, Abscisic acid and Ethylene. However, the information about the most recent group of phytohormone (Brassinosteroids) has been incorporated in this book. This volume includes a selection of newly written, integrated, illustrated reviews describing our knowledge of Brassinosteroids and aims to describe them to the present time. Various chapters incorporate both theoretical and practical aspects and may serve as baseline information for future researches through which significant developments are possible. This book will be useful to the students, teachers and researchers, both in universities and research institutes, especially in relation to biological and agricultural sciences.

Features
Brassinosteroids (BRs) comprise a specific class of low-abundance plant steroids of ubiquitous occurrence in plants. This group of plant steroids includes more than 70 compounds that show structural similarities to insect, animal and human steroid hormones. Molecular genetic analysis of mutants defective in BRs biosynthesis or response revealed that BRs are essential for normal plant growth and development. [..]

Contents

Field of interest
Plant Physiology; Plant Breeding / Biotechnology; Biotechnology; Agriculture; Plant Biochemistry; Proteomics

Target groups
Graduate

Type of publication
Contributed volume

Available

2011. XX, 462 p. 150 illus. Hardcover
149,95 €

Cell-Based Microarrays: Methods and Protocols

As a high throughput method for analyzing gene function, cell-based microarrays have proven to be of vital importance, allowing high throughput analysis of over expression and knock down of proteins. In Cell-Based Microarrays: Methods and Protocols, experts in the field provide an up to date synopsis of cell-based microarrays and meticulous coverage of all aspects of the array, including emerging technol- ogy. Beginning with a detailed overview of the whole subject area, the volume continues with protocols for over-expression arrays and downstream func- tional assays, infectious disease research, increasing transfection efficiencies, as well as the development of cell-based array technology by use of microfluidic image cytometry for the analysis of small diagnos- tic samples with few cells. Written in the highly suc- cessful Methods in Molecular Biology® series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily[..]

Features
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Contents
Cell-Based Microarrays: Overview. - Cell-Based Co-Transfection Microarrays for Use with HEK293T Cells on a Poly D-Lysine Polyethylene Coated Microplate.- Large-Scale Cell-Based Microarrays and Their Use with HEK293T Cells and Downstream Apoptotic Assays.- A Novel Fluorescent Transcrip- tional Reporter for Cell-Based Microarray Assays.- High-Throughput Subcellular Protein Localization Using Transfected-Cell Arrays. - Cell Arrays for the Measurement of Organelle Dynamics in Liv- ing Cells.- High-Throughput Immunofluorescence Microscopy Using Yeast Spheroplast Cell-Based Microarrays.- Cell-Based[..]

Field of interest
Cell Biology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

94,95 €
ISBN 978-1-61737-969-7

Cell-Penetrating Peptides: Methods and Protocols

In recent years, a new understanding of cell-pene- trating peptides has emerged, helping researchers to expand beyond a number of long-held dogmas. In Cell-Penetrating Peptides: Methods and Proto- cols, expert researchers explore the latest informa- tion on cell-penetrating peptides (CPPs), providing insight into the most important and contemporary areas of CPP research. Chapters address the histori- cal background of CPP studies, provide an overview of the growing field of research, investigate meth- ods for testing CPP mechanisms, present a sum- mary of methods that attempt to use properties of CPPs to study biochemical intracellular mechanisms of interaction and signal transduction, and include new ideas for turning CPP-based strategies into drugs. Composed in the highly successful Methods in Molecular Biology® series format, each chapter contains a brief introduction, step-by-step meth- ods, a list of necessary materials, and a Notes section which shares tips on troubleshooting and avoiding known.[..]

Features
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Contents
Classes and prediction of cell-penetrating peptides.- Penetratin story : an overview.- Testing membrane interactions of CPPs.- Interactions of amphilipic CPPs with model membranes.- NMR studies of three-dimensional structure and positioning of CPPs in membrane model systems.- Measurements of the intracellular stability of CPPs.- Tools for predict- ing binding and insertion of CPPs into lipid bilay- ers.- Studies of proteoglycan involvement in CPP- mediated delivery.- Uptake Kinetics of cell-penetrat- ing peptides.- Thermodynamics of lipid interactions with cell-penetrating peptides.- Calcium[..]

Field of interest
Cell Biology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

124,95 €
Chemical Communication in Crustaceans

The crustaceans are ecologically and economically important organisms. They constitute one of the dominant invertebrate groups on earth, particularly within the aquatic realm. Crustaceans include some of the preferred scientific model organism, profitable aquaculture specimen, but also invasive nuisance species threatening native animal communities throughout the world. Chemoreception is the most important sensory modality of crustaceans, acquiring important information about their environment and picking up the chemical signals that mediate communication with conspecifics. Significant advances have been made in our understanding of crustacean chemical communication during the past decade. This includes knowledge about the identity, production, transfer, and behavioral function of chemical signals in selected crustacean groups. While it is well known that chemical communication is an integral part of the behavioral ecology of most living organisms, the intricate ways in which organisms use chemical communication is [...]

**Features**
Crustaceans are ecologically and economically important. They are fished and farmed extensively for use and are model organisms for scientific research. However, as invasive species, some crustaceans also threaten native communities worldwide. Social interactions of these primarily aquatic invertebrates are generally mediated through chemicals. Hence, the study of chemical communication by crustaceans is [...]

**Contents**
- **Part I. Introductory Section:** General Introduction.
-Pheromones and behaviour - overview, definitions.

**Fields of interest**
- Animal Ecology; Invertebrates; Animal Biochemistry; Behavioural Sciences; Freshwater & Marine Ecology; Neurobiology

**Target groups**
Research

**Type of publication**
Contributed volume

**Available**
199,95 €

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Data Mining in Proteomics

From Standards to Applications

Through the rapid development of proteomics methods and technologies, an enormous amount of data was created, leading to a wide-spread rethinking of strategy design and data interpretation. In Data Mining in Proteomics: From Standards to Applications, experts in the field present these new insights within the proteomics community, taking the historical evolution as well as the most important international [...]

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**Contents**
- Instruments and Methods in Proteomics: - In-Depth Protein Characterization by Mass Spectrometry.
- Analysis of Phosphoproteomics Data: - The Origin and Early Reception of Sequence Databases.
- Laboratory Data and Sample Management for Proteomics.
- PRIDE and 'Database on Demand' as Valuable Tools for Computational Proteomics.
- Tranche Distributed Repository and ProteomeCommons.org.
- Data Standardization by the HUPO-PSI: How Has the [...]

**Fields of interest**
- Protein Science

**Target groups**
- Professional/practitioner

**Type of publication**
Contributed volume

**Available**
2011. XII, 420 p. 145 illus., 2 in color. (Methods in Molecular Biology, Vol. 696) Hardcover
109,95 €
ISBN 978-1-60761-986-4

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Delamination in Wood, Wood Products and Wood-Based Composites

In the last quarter century, delamination has come to mean more than just a failure in adhesion between layers of bonded composite plies that might affect their load-bearing capacity. Ever-increasing computer power has meant that we can now detect and analyze delamination between, for example, cell walls in solid wood. This fast-moving and critically important field of study is covered in a book that provides everyone from manufacturers to research scientists the state of the art in wood delamination studies.

Divided into three sections, the book first details the general aspects of the subject, from basic information including terminology, to the theoretical basis for the evaluation of delamination. A settled terminology in this subject area is a first key goal of the book, as the terms which describe delamination in wood and wood-based composites are numerous and often confusing. The second section examines different and highly specialized methods for delamination detection such as confocal laser [...]

**Features**
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**Contents**
- 1. Introduction.
- 2. Terms for delamination in wood science and technology.
- 5. A theoretical model of collapse recovery.
- 6. Delamination of wood at the microscopic scale: current knowledge and methods.
- 7. Probing the wood coating interface at high resolution.
- 8. Delamination in timber induced by microwave energy.
- 9. Delamination in wood and wood products induced by weathering.
- 10. Delamination in timber induced by [...]

**Fields of interest**
- Wood Science & Technology; Measurement Science, Instrumentation; Mechanics; Acoustics; Building Materials

**Target groups**
Research

**Type of publication**
Contributed volume

**Available**
2011. XIV, 401 p. 94 illus. in color. Hardcover
149,95 €
Diversity and Biotechnology of Ectomycorrhizae

Ectomycorrhizal fungi play multifunctional roles during symbioses with higher plants. They can serve as bioprotectors, biofertilizers, bioremediators and stress indicators. Further, they are the true “mycoindicators” of forest ecosystems, where an enormous diversity of ectomycorrhizal fungi can be found. Some ectomycorrhizal fungi also produce edible sporocarps, i.e., fruiting bodies, which are important for the food industry. Ectomycorrhizal fungi also produce various metal chelating molecules, which are of remarkable biotechnological significance and which also secrete useful secondary metabolites. Molecular approaches are required for the identification and differentiation of fungi forming symbioses with higher plants, while molecular tools are important to understand how genes are expressed during symbiosis with higher plants. Students, researchers and teachers of botany, mycology, microbiology, forestry, and biotechnology will find a valuable source of information in this Soil Biology volume.

Contents
The importance of ectomycorrhizas for the growth of dipterocarps and the efficacy of ectomycorrhizal inoculation schemes.- The ectomycorrhizal symbiosis in South America: Morphology, colonisation and diversity.- Ectomycorrhizal inoculum and inoculation techniques.- Systematic and ecology of tropical ectomycorrhizal fungi using molecular approaches.- The molecular ectomycorrhizal fungus essence in association: a review of differentially expressed fungal genes during symbiosis formation.- Agrobacterium tumefaciens-mediated transformation of ectomycorrhizal fungi.- Biotechnological.-

Fields of interest
Agriculture; Soil Science & Conservation

Target groups
Research

Type of publication
Contributed volume

Available

149,95 €
ISBN 978-3-642-15195-8

Embryonic Stem Cell Therapy for Osteo-Degenerative Diseases

Embryonic stem cells (ESCs) offer an unlimited self-renewing capacity, as opposed to the limits of adult stem cells; therefore, ESCs represent an almost bottomless resource for regenerative medicine and tissue engineering approaches. In Embryonic Stem Cell Therapy for Osteo-Degenerative Diseases: Methods and Protocols, accomplished investigators provide detailed descriptions on how to expand ESCs from the most commonly used species ex vivo, i.e. mouse and human, in static culture as well as in controllable bioreactor processes. The thorough and timely volume summarizes the methods that may be used to differentiate these cells along the desired lineage of choice, be it osteoblasts, osteoclasts, or chondrocytes, and consequently also offers analysis tools for the characterization of resulting cells and evaluation of differentiation effectiveness. Written in the highly successful Methods in Molecular Biology® series format, chapters include introductions to their respective topics, lists of the...-

Features
Embryonic stem cells (ESCs) offer an unlimited self-renewing capacity, as opposed to the limits of adult stem cells; therefore, ESCs represent an almost bottomless resource for regenerative medicine and tissue engineering approaches. In Embryonic Stem Cell Therapy for Osteo-Degenerative Diseases: Methods and Protocols, accomplished investigators provide detailed descriptions on how to expand ESCs from the most...-

Contents

Fields of interest
Cell Biology; Stem Cells

Target groups
Research

Type of publication
Contributed volume

Available
2011. XII, 336 p. 75 illus., 10 in color. (Methods in Molecular Biology, Vol. 695) Hardcover

109,95 €
ISBN 978-1-60761-961-1

Evolutionary Theory and the Creation Controversy

Evolutionary theory addresses the phenomenon of the origin and diversity of plant and animal species that we observe. In recent times, however, it has become a predominant ideology which has gained currency far beyond its original confines. Attempts to understand the origin and historical development of human culture, civilization and language, of the powers of human cognition, and even the origin of the moral and ethical values guiding and constraining everyday life in human societies are now cast in an evolutionary context. In “Evolutionary Theory and the Creation Controversy” the author examines evolutionary theory from a historical perspective, explaining underlying metaphysical backgrounds and fundamental philosophical questions such as the paradoxical problem of change, existence and creation. He introduces the scientists involved, their research results and theories, and discusses the evolution of evolutionary theory against the background of Creationism and Intelligent Design.

Features
Evolutionary theory addresses the phenomenon of the origin and diversity of plant and animal species that we observe. In recent times, however, it has become a predominant ideology which has gained currency far beyond its original confines. Attempts to understand the origin and historical development of human culture, civilization and language, of the powers of human cognition, and even the origin of the moral...-

Contents

Fields of interest
Evolutionary Biology; History of Science; Anthropology

Target groups
Research

Type of publication
Monograph

Available
2011. X, 204 p. Hardcover

139,95 €
ISBN 978-3-642-14895-8
Experimental Plant Virology

"Experimental Plant Virology" provides the updated methodology for studying the genomic characterization and mechanisms of infection, the quantitative determination as well as the diagnosis of plant pathogenic viruses. With illustrations showing viral symptoms and ultra-structures, clear and concise descriptions, the book presents the latest developments in experimental plant virology. This book is intended for researchers, university teaching staff, graduate students and undergraduates in plant science. Dr. Jishuang Chen is a professor of plant pathology at the Institute of Bioengineering, Zhejiang Sci-Tech University, China.

Features

"Experimental Plant Virology" provides the updated methodology for studying the genomic characterization and mechanisms of infection, the quantitative determination as well as the diagnosis of plant pathogenic viruses. With illustrations showing viral symptoms and ultra-structures, clear and concise descriptions, the book presents the latest developments in experimental plant virology. This book is intended [...]
Mechanosensitivity and Mechanotransduction

This book presents the latest findings in the field of research of mechanosensitivity and mechanotransduction in different cells and tissues. Mechanosensitivity and mechanotransduction of the heart and vascular cells, in the lung, in bone and joint tissues, in sensor systems and in blood cells are described in detail. This Volume focuses on molecular mechanisms of mechanosensitivity and mechanotransduction via cytoskeleton. Integrin-mediated mechanotransduction, the role of actin cytoskeleton and the role of other cytoskeletal elements are discussed. It contains a detailed description of several stretch-induced signaling cascades with multiple levels of crosstalk between different pathways. It contains a description of the role of nitric oxide in regulation of cardiac activity and in regulation of mechanically gated channels in the heart. In the heart mechanical signals are propagated into the intracellular space primarily via integrin-linked complexes, and are subsequently transmitted from cell...[

Features
This book presents the latest findings in the field of research of mechanosensitivity and mechanotransduction in different cells and tissues. Mechanosensitivity and mechanotransduction of the heart and vascular cells, in the lung, in bone and joint tissues, in sensor systems and in blood cells are described in detail. This Volume focuses on molecular [...]
Neurobiology of Actin
From Neurulation to Synaptic Function

This text is an introduction to the interface between the actin cytoskeleton and the myriad of issues fundamental to the understanding of the nervous system. It covers the neurobiology of actin ranging from basic cellular organization and function to the roles of actin in the health and disease states of the nervous system. Its opening chapter presents the fundamental concepts required to appreciate the details of the molecular machinery that regulates actin in a cellular context, setting the stage for the first part of the book, which reviews the neurobiology of actin at the cellular level. The latter section of the book then discusses the functions of actin in the context of neurobiological issues ranging from early development to synaptic function and disease states of the nervous system. This text is intended for neuroscientists interested in investigating the actin cytoskeleton in the context of their particular neuroscience research program, and its chapters are cross-referenced in order to...

Features
Neurons are characterized by a complex, dynamic and highly polarized morphology. Actin and its regulatory proteins are the most abundant set of proteins within cells, and they form one of the major cytoskeletal systems—the actin filament cytoskeleton. While much has been learned about the roles of the actin cytoskeleton in non-neuronal cells, our understanding of the full spectrum of the functions of actin in...

Contents

Fields of interest
Neurobiology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. VIII, 282 p. 52 illus., 2 in color. (Advances in Neurobiology, Vol. 5) Hardcover

Optical Fluorescence Microscopy
From the Spectral to the Nano Dimension

In the last decade, fluorescence microscopy has evolved from a classical “retrospective” microscopy approach into an advanced imaging technique that allows the observation of cellular activities in living cells with increased resolution and dimensions. A bright new future has arrived as the nano era has placed a whole new array of tools in the hands of biophysicists who are keen to go deeper into the intricacies of how biological systems work. Following an introduction to the complex world of optical microscopy, this book covers topics such as the concept of white confocal, nonlinear optical microscopy, fluctuation spectroscopy, site-specific labeling of proteins in living cells, imaging molecular physiology using nanosensors, measuring molecular dynamics, muscle braking and stem cell differentiation.

Features
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Contents

Fields of interest
Biological Microscopy; Cell Biology; Biophysics and Biological Physics; Biochemistry

Target groups
Research

Type of publication
Contributed volume

Available
2011. XII, 244 p. Hardcover
149,95 € ISBN 978-3-642-15174-3

Organic Xenobiotics and Plants
From Mode of Action to Ecophysiology

Natural and agro-ecosystems are frequently exposed to natural or synthetic substances, which, while they have no direct nutritional value or significance in metabolism, may negatively affect plant functioning. These xenobiotics, may originate from both natural (fires, volcano eruptions, soil or rock erosion, biodegradation) and anthropogenic (air and soil pollution, herbicides) sources. And, while affected plants have only a limited number of possibilities for avoiding accumulation of these compounds, they do exhibit several enzymatic reactions for detoxification including oxidation, reduction, hydrolysis and conjugation reactions. In agro-ecosystems in particular these mechanisms have significant importance in relation to herbicide detoxification and tolerance. This volume is an international group of experts present an overview of the nature and distribution of organic xenobiotics, including their uptake, effects on plant functioning and detoxification mechanisms. The particular significance of...

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Contents

Fields of interest
Plant Physiology; Ecotoxicology; Agriculture; Environmental Engineering / Biotechnology; Plant Ecology

Target groups
Research

Type of publication
Contributed volume

Available
149,95 € ISBN 978-3-642-15174-3
Phosphorus in Action
Biological Processes in Soil Phosphorus Cycling

Phosphorus (P) is a finite resource which is essential for life. It is a limiting nutrient in many ecosystems but also a pollutant which can affect biodiversity in terrestrial ecosystems and change the ecology of water bodies. This book collects the latest information on biological processes in soil P cycling, which to date have remained much less understood than physico-chemical processes. The methods section presents spectroscopic techniques and the characterization of microbial P forms, as well as the use of tracers, molecular approaches and modeling of soil-plant systems. The section on processes deals with mycorrhizal symbioses, microbial P solubilization, soil macrofauna, phosphatase enzymes and rhizosphere processes. On the system level, P cycling is examined for grasslands, arctic and alpine soils, forest plantations, tropical forests, and dryland regions. Further, P management with respect to animal production and cropping, and the interactions between global change and P cycling, are treated.

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Soil organic phosphorus speciation by spectroscopic techniques.- Characterization of phosphorus forms in soil microorganisms.- The use of tracers to investigate phosphate cycling in soil/plant systems.- Molecular approaches to study biological phosphorus cycling.- Modelling phosphorus dynamics in the soil-plant system.- Role of mycorrhizal symbioses in phosphorus cycling.- Solubilization of phosphorus by soil microorganisms.- Role of soil macrofauna in phosphorus cycling.- Role of phosphatase enzymes in soil.- Rhizosphere processes, plant response and adaptations.- Biological phosphorus [...] Fields of interest
Biochemistry; Plant Physiology; Microbiology; Agriculture; Soil Science & Conservation

Target groups
Research

Type of publication
Contributed volume

Available
149.95 €
ISBN 978-3-642-15270-2

Plant Breeding for Water-Limited Environments

This volume will be the only existing single-authored book offering a science-based breeder’s manual directed at breeding for water-limited environments. Plant breeding is characterized by the need to integrate information from diverse disciplines towards the development and delivery of a product defines as a new cultivar. Conventional breeding draws information from disciplines such as genetics, plant physiology, plant pathology, entomology, food technology and statistics. Plant breeding for water-limited environments and the development of drought resistant crop cultivars is considered as one of the most difficult areas in plant breeding while at the same time it is becoming a very pressing issue. This volume is unique and timely in that it develops realistic systems and protocols towards the breeding of drought resistant cultivars by integrating knowledge from environmental science, plant physiology, genetics and molecular biology.

Features
Plant breeding for water limited environments has always been a contemporary issue in dryland and rainfed agriculture. However, formal knowledge and methodology in this specific plant breeding domain has been scattered and even lacking, mainly because it is an interdisciplinary endeavor. With the recent looming problem of global warming and water crisis the issue is becoming even more urgent and timely. This [...] Contents
Plant Breeding / Biotechnology; Plant Sciences; Plant Genetics and Genomics

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XV, 258 p. 23 illus. in color. Hardcover
69.95 €
ISBN 978-1-4419-7490-7

Predictive Species and Habitat Modeling in Landscape Ecology

Most projects in Landscape Ecology, at some point, define a species-habitat association. These models are inherently spatial, dealing with landscapes and their configurations. Whether coding behavioral rules for dispersal of simulated organisms through simulated landscapes, or designing the sampling extent of field surveys and experiments in real landscapes, landscape ecologists must make assumptions about how organisms experience and utilize the landscape. These convenient working postulates allow modelers to project the model in time and space, yet rarely are they explicitly considered. The early years of landscape ecology necessarily focused on the evolution of effective data sources, metrics, and statistical approaches that could truly capture the spatial and temporal patterns and processes of interest. Now that these tools are well established, we reflect on the ecological theories that underpin the assumptions commonly made during species distribution modeling and mapping. This is crucial for [...] Features
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Landscape Ecology; Theoretical Ecology / Statistics; Fish & Wildlife Biology & Management; Conservation Biology / Ecology; Nature Conservation; Community & Population Ecology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XIV, 314 p. 45 illus., 4 in color. Hardcover
149.95 €
ISBN 978-1-4419-7389-4
Life Sciences 93

Primates of Gashaka
Sociobiology and Conservation in Nigeria’s Biodiversity Hotspot

The Gashaka Primate Project has grown into one of the largest research and conservation activities in West Africa. At present, it keeps going on the initiative of the editors of this volume and their academic home institutions. The appearance of this volume marks the 10th anniversary of the Gashaka Primate Project.

Features
The remote Gashaka region of north-eastern Nigeria is still largely unexplored. In this premier wilderness, monkeys and apes survive in large numbers – part of a rich assemblage of wildlife at the interface between the dry sub-Saharan Guinea savannah and the moist Cameroonian highlands. Primates include the rarest chimpanzee subspecies, colobus, guenons and baboons. […]

Contents

Fields of interest
Zoology; Biodiversity; Animal Ecology; Applied Ecology; Environmental Management; Nature Conservation

Target groups
Research

Type of publication
Contributed volume

Available
2011. XVIII, 534 p. 93 illus., 6 in color. (Developments in Primatology: Progress and Prospects, Vol. 35) Hardcover
129,95 €
ISBN 978-1-60761-7402-0

Progenitor Cell Therapy for Neurological Injury

There are currently no reparative therapies for severe neurological injury, including brain injury, spinal cord injury and stroke. Actually, most treatments are designed simply to limit secondary damage. However, pre-clinical data supports the idea that exogenous stem and progenitor cells have the potential to promote a reparative response to severe neurological injuries. Progenitor Cell Therapy for Neurological Injury is a compilation of seminal essays that explore many unique aspects of neurological injury, focusing on the critical translational issues of cell delivery. Specifically, it discusses routes of administration, types of progenitor cells (alone and/or in combinations), timing of delivery and adjuncts to promote cell engraftment, survival and effectiveness. In addition, many chapters address measuring the effects of transplanted cells and cell tracking. The paradigms of how cell-based therapeutics affect neurological injury is changing rapidly. The developments in this field may[…]

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Contents

Fields of interest
Stem Cells

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. X, 255 p. 32 illus., 19 in color. (Stem Cell Biology and Regenerative Medicine) Hardcover
139,95 €

Protein Chromatography

A prerequisite for elucidating the structure and function of any protein is the prior purification of that protein. This necessity has led to the development of many purification schemes and chromatographic methods for the isolation of native proteins from complex sources. In Protein Chromatography: Methods and Protocols, leading researchers present clear protocol-style chapters that are suitable for newcomers and experts alike. The book opens with vital topics in protein biochemistry, addressing such areas as protein stability and storage, avoiding proteolysis during chromatography, protein quantitation methods including immuno-qPCR, and the contrasting challenges that microfluidics and scale-up production pose to the investigator, and then it segues into key methods involving the generation and purification of recombinant proteins through recombinant antibody production and the tagging of proteins, amongst other means, as well as many variations on classic techniques such as ion-exchange and[…]

Features
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Contents

Fields of interest
Protein Science; Chromatography

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
109,95 €
Quorum Sensing
Methods and Protocols

Since its early days in the 1990s, the Quorum Sensing (QS) field has grown from a few dozen laboratories, investigating the pathways, proteins, and chemicals that facilitate signaling in bacteria, to hundreds of groups that have integrated evolutionary biology, computer science, mathematics, engineering, and metagenomics to create an ever-expanding and dynamic field. In Quorum Sensing: Methods and Protocols, expert researchers provide an in-depth set of diverse protocols that span this broad area of study. Broken into three detailed sections, the volume covers the detection, isolation, and characterization of the QS signals made by both Gram- and Gram+ bacteria, determination of the function of QS signals in vivo, and the development of QS disruption strategies. Written in the highly successful Methods in Molecular Biology™ series format, chapters include brief introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory[...]

Features
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Contents
Bioassays of Quorum Sensing Compounds: Using Agrobacterium tumefaciens and Chromobacterium violaceum. Detection of 2-alkyl-4-quinolones Using Biosensors. FRET-Based Biosensors for the Detection and Quantification of AI-2 Class of Quorum Sensing Compounds. Isolation of Specific Quorum Sensing Autoinducers. Liquid Chromatography/Mass Spectrometry (LC/MS) for the Detection and Quantification of N-acyl-L-homoserine Lactones (AHLs) and 4-hydroxy-2-alkylquinolines (HAQs). Detection of Autoinducer (AI-1) and Activity in Food Samples. Detection of Bacterial Signaling Molecules in Liquid or[...]

Fields of interest
Microbiology; Bacteriology; Laboratory Medicine

Stem Cells & Regenerative Medicine
From Molecular Embryology to Tissue Engineering

Defined as, "The science about the development of an embryo from the fertilization of the ovum to the fetus stage," embryology has been a mainstay at universities throughout the world for many years. Throughout the last century, embryology became overshadowed by experimental-based genetics and cell biology, transforming the field into developmental biology, which replaced embryology in Biology departments in many universities. Major contributions in this young century in the fields of molecular biology, biochemistry and genomics were integrated with both embryology and developmental biology to provide an understanding of the molecular portrait of a "development cell." That new integrated approach is known as stem-cell biology; it is an understanding of the embryo and development together at the molecular level using engineering, imaging and cell culture principles, and it is at the heart of this seminal book. Stem Cells and Regenerative Medicine: From Molecular Embryology to Tissue Engineering[...]

Features
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Contents

Fields of interest
Cell Biology; Developmental Biology; Biophysics and Biological Physics; Animal Genetics and Genomics; Pharmacology / Toxicology; Biotechnology

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 127 p. 41 illus. (Ecological Research Monographs) Hardcover
99,95 €
ISBN 978-4-431-53900-1

2011, XVI, 310 p. 79 illus. (Methods in Molecular Biology, Vol. 692) Hardcover
109,95 €

2011. XXVIII, 632 p. 65 illus., 33 in color. (Stem Cell Biology and Regenerative Medicine) Hardcover
169,95 €
ISBN 978-1-60761-859-1
Tallgrass Prairie Restoration in the Midwestern and Eastern United States

A Hands-On Guide

This work advocates the restoration of the North American tallgrass prairie, which is rapidly disappearing. Historical descriptions of prairie aesthetics are outlined. As we are experiencing a worldwide mixing of plant species, prairie restoration is particularly important. Plants alien to North America do not readily support insect populations, including all animal species higher on the food chain. Prairie restoration methods are described for amateurs, academicians, and land managers. Some of the techniques described are growing crops for seed production, times of seed gathering for specific species, facile seed processing for amateurs, land preparation, segregation of seed into their preference for habitat, and required seed treatment for germination. Over 200 species are described that comprise the predominant species found in tallgrass prairie nature preserves, as well as degraded prairies. Some additional plants of special interest are also described. The appendix tabulates all likely species.

Contents
Table of Contents.- Preface.- Part I: introduction.- Chapter 1- Introduction to the Prairie.- Part II: Native Prairie Species.- Chapter 2- Mesic soil and adaptable species.- Chapter 3- Dry-mesic to dry soil preferring species.- Chapter 4- Wet-mesic to wet soil preferring species.- Part III: Restoration.- Chapter 5- Restoration methods.- Part IV: Management.- Chapter 6- Prairie Management.- Other Recommended.- Reading.- Glossary.- Index.

Fields of interest
Plant Ecology; Terrestrial Ecology; Ecosystems; Agriculture

Target groups
Research

Type of publication
Monograph

Available
2011. XX, 276 p. 41 illus. in color. Hardcover
99.95 €
ISBN 978-1-4419-7426-6

The Physical Basis of Biochemistry

Solutions Manual to the Second Edition

The Physical Basis of Biochemistry: Solutions Manual to the Second Edition offers solutions to the problem sets from the second edition of The Physical Basis of Biochemistry. The Physical Basis of Biochemistry, Second Edition, emphasizes the interdisciplinary nature of biophysical chemistry by incorporating the quantitative perspective of the physical sciences without sacrificing the complexity and diversity of the biological systems, applies physical and chemical principles to the understanding of the biology of cells and explores the explosive developments in the area of genomics, and in turn, proteomics, bioinformatics, and computational and visualization technologies that have occurred in the past seven years. The book features problem sets and examples, clear illustrations, and extensive appendixes that provide additional information on related topics in mathematics, physics and chemistry. The answers to these problem sets can be found in The Physical Basis of Biochemistry: Solutions Manual to...[

Features
The Physical Basis of Biochemistry: Solutions Manual to the Second Edition offers solutions to the problem sets from the second edition of The Physical Basis of Biochemistry. The Physical Basis of Biochemistry is an introduction to the philosophy and practice of an interdisciplinary field in which biological systems are explored using the quantitative perspective of the physical.

Contents

Fields of interest
Biochemistry; Biophysics and Biological Physics; Physical Chemistry; Biomedicine (general)

Target groups
Research

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. X, 146 p. 18 illus. Softcover
29.95 €
ISBN 978-1-4419-7363-4

The Plant Cytoskeleton

Plant cells house highly dynamic cytoskeletal networks of microtubules and actin microfilaments. They constantly undergo remodeling to fulfill their roles in supporting cell division, enlargement, and differentiation. Following early studies on structural aspects of the networks, recent breakthroughs have connected them with more and more intracellular events essential for plant growth and development. Advanced technologies in cell biology (live-cell imaging in particular), molecular genetics, and proteomics have revolutionized the field of study. Stories summarized in this book may inspire enthusiastic scientists to pursue new directions toward understanding functions of the plant cytoskeleton. The Plant Cytoskeleton is divided into three sections: 1) Molecular Basis of the Plant Cytoskeleton; 2) Cytoskeletal Reorganization in Plant Cell Division; and 3) The Cytoskeleton in Plant Growth and Development. This book is aimed at serving as a resource for anyone who wishes to learn.[...

Features
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Transgenic Mouse Methods and Protocols

The generation of genetically modified mice is absolutely crucial to gene function studies today, primarily because mice are genetically similar to man and because gene function studies in mice are in the context of a whole organism, making them particularly useful. In Transgenic Mouse Methods and Protocols, Second Edition, expert research explore current advances in the field through detailed laboratory protocols. Chapters provide a general introduction outlining how to deal with mice and how to generate transgenic mouse models, explore the generation of conditional and induced knockout and transgenic mice, and offer alternative routes to studying gene function in mice. Composed in the highly successful Methods in Molecular Biology® series format, each chapter contains a brief introduction, step-by-step methods, a list of necessary materials, and a Notes section which shares tips on troubleshooting and avoiding known pitfalls. Comprehensive and state of the art, Transgenic Mouse Methods and Protocols, Second Edition, expert research explore current advances in the field through detailed laboratory protocols.

Contents
Introduction: Strategies for developing genetically modified mice.- Genetic Modification of the Mouse: General Technology: Pronuclear and Blastocyst Injection.- Generation of chimeras by aggregation of embryonic stem cells with diploid or tetraploid mouse embryos.- Cryopreservation of mouse spermatocytes and In vitro fertilization.- Autopsy and histological analysis of the transgenic mouse.- Transgene design.- Inducible Transgenic Mouse Models.- Lentiviral transgenesis.- Transgenesis in Mouse Embryonic Stem Cells.- Engineering BAC Reporter Gene Constructs for Mouse Transgenesis.- Targeting.-

Fields of interest
Animal Genetics and Genomics; Genetic Engineering; Gene Function

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XI, 352 p. 84 illus., 1 in color. (Methods in Molecular Biology, Vol. 693) Hardcover
109,95 €
ISBN 978-1-60761-973-4

Trends in Acarology
Proceedings of the 12th International Congress

Mites and ticks are everywhere and acarologists go after them — some aiming to explore the bewildering diversity of the mites and ticks, others trying to understand the how and why of their being. For the past 50 years, the International Congress of Acarology has been the forum for worldwide communication on the knowledge of Acari, helping researchers and students to look beyond their disciplines. Many mites and ticks are economic factors as they are pests of agricultural, veterinary and medical importance, and several species have become model organisms in modern biology. The 96 contributions to Trends in Acarology — reflecting fields as molecular biology, biochemistry, physiology, microbiology, pathology, ecology, evolutionary biology, systematic biology, soil biology, plant protection, pest control and epidemiology — have been reviewed and carefully edited. This volume contains a wealth of new information, that may stimulate research for many years to come.

Features
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Contents

Fields of interest
Agriculture; Entomology; Animal Ecology; Biodiversity; Agriculture

Target groups
Research

Type of publication
Proceedings

Available
2010. XX, 650 p. Hardcover
199,95 €

Water and Food Security in Central Asia

Central Asia is vulnerable to water scarcity because it is located in semiarid and arid vegetation zones and large parts of its economy depend on water for irrigation and energy. Climate-change scenarios predict temperature increases and a rising number of extreme weather events, which will exacerbate water shortages in the future. In addition, the population of Central Asia is growing more rapidly than the rate of food production which is resulting in food insecurity in many parts of the region too. This volume reports the deliberations of politicians, scientists and representatives of water management organisations from throughout Central Asia. Their contributions not only highlight areas of concern, but also propose numerous ideas for improving the long-term water and food security in the region.

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Materials Science

E. Borsella, ENEA Research Centre of Frascati, Italy (Ed.)

BONSAI Project Symposium

Breakthroughs in Nanoparticles for Bio-Imaging

Particles on the nano-scale exhibit extraordinary properties and offer exciting opportunities in a wide range of applications, including visualization of cellular structures, receptors, inflammation, and characterization of suspect lesions. The aim of this Symposium was to gather scientists active in the field (chemists, material scientists, physicists, engineers, clinicians and biochemists) to discuss new ideas, experimental results and perspectives ranging from the preparation to the applications of functional nanoparticles for bio-imaging and cell labelling.

Features

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Fields of interest

Nanotechnology; Nanoscale Science and Technology; Nanotechnology and Microengineering

Target groups

Research

Type of publication

Proceedings

Available


119,95 €


Biological Adhesive Systems

From Nature to Technical and Medical Application

There is a growing need for new adhesives for technical and medical applications! The nature uses adhesion in a host of ways and we can learn a great deal from this. Adhesive systems of potential interest need to be thoroughly analyzed and the common underlying principles and unique features of natural adhesives have to be understood. The first part of this book gives an overview of selected adhesive systems from the plant and animal kingdoms. It describes their structure (morphology), function (secretion), and what kinds of adhesives are produced (composition). Knowledge about biological adhesives raises the question as to how these systems can benefit our daily lives. The second part of this book focuses on technical and medical applications of biological adhesives and biomimetic systems. The use of renewable biological components in industrial adhesives is also highlighted as is the use of biomimetic and bio-adhesives in basic and applied research. Medical and surgical applications of these adhesives are also described.

Contents


Fields of interest

Biomaterials; Animal Anatomy / Morphology / Histology; Characterization and Evaluation of Materials

Target groups

Research

Type of publication

Collected works

Available

2010. XI, 305 p. 156 Illus., 85 in color. Hardcover

149,95 €

ISBN 978-3-7091-0141-4
Glassy, Amorphous and Nano-Crystalline Materials
Thermal Physics, Analysis, Structure and Properties

Provides a summary of non-equilibrium glassy and amorphous structures and their macro- and microscopic thermal properties. The book contains a carefully selected works of fourteen internationally recognized scientists involving the advances of the physics and chemistry of the glassy and amorphous states.

Contents

Fields of interest
Ceramics, Glass, Composites, Natural Materials; Analytical Chemistry

Target groups
Research

Type of publication
Monograph

Available

139,95 €

International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2009)

Nanoscale science and technology have occupied centre stage globally in modern scientific research and discourses in early twenty first century. The enabling nature of the technology makes it important in modern electronics, computing, materials, healthcare, energy and the environment. This volume contains some of the papers presented at the ICANN-2009, the first ever international conference on the subject held in the North-eastern part of India, with aims to promote sharing of new knowledge and exchange of the latest ideas in the field, through deliberations in the conference. The papers presented had been designed to represent the length and breadth of the field, with specific emphasis on the multidisciplinary nature of the subject. The peer reviewed articles contained herein are classified into several important subareas, e.g., nanostructured and nanoscale functional materials, nanobiotechnology, nanocomposites, nanoelectronics and nanosensors, nanomagnetism, [...]

Fields of interest
Nanotechnology; Nanotechnology and Microengineering; Materials Science (general)

Target groups
Research

Type of publication
Proceedings

Available

219,00 €
ISBN 978-0-7354-0825-8

Nanoscale Photonics and Optoelectronics

The intersection of nanostructured materials with photonics and electronics shows great potential for clinical diagnostics, sensors, ultrafast telecommunication devices, and a new generation of compact and fast computers. Nanophotonics draws upon cross-disciplinary expertise from physics, materials science, chemistry, electrical engineering, biology, and medicine to create novel technologies to meet a variety of challenges. This is the first book to focus on novel materials and techniques relevant to the burgeoning area of nanoscale photonics and optoelectronics, including novel-hybrid materials with multifunctional capabilities and recent advancements in the understanding of optical interactions in nanoscale materials and quantum-confined objects. Leading experts provide a fundamental understanding of photonics and the related science and technology of plasmonics, polaritons, quantum dots for nanophotonics, nanoscale field emitters, near-field optics, nanophotonic architecture, and nanophotonic [...]

Fields of interest
Nanotechnology; Applied Optics, Optoelectronics, Optical Devices; Electronics and Microelectronics, Instrumentation; Optical and Electronic Materials; Nanotechnology and Microengineering; Laser Technology and Physics, Photonics

Target groups
Research

Type of publication
Monograph

Available

2011. XI, 300 p. 135 illus., 41 in color. (Lecture Notes in Nanoscale Science and Technology, Vol. 9) Hardcover
99,95 €
ISBN 978-1-4419-7233-0
Nanostructure Semiconductor Optical Amplifiers

Building Blocks for All-Optical Processing

“Nanostructure Semiconductor Optical Amplifiers” reviews all-optical processing methods currently available and presents semiconductor optical amplifiers (SOAs) as a new building block for this purpose. The authors discuss the overcomes of high frequency operation of SOAs and propose a new all-optical pumping method for the implementation of semiconductor optical amplifiers.

Contents

Fields of interest
Optical and Electronic Materials; Microwaves, RF and Optical Engineering; Semiconductors; Classical Electrodynamics, Wave Phenomena

Target groups
Research

Type of publication
Monograph

Available
2011. IX, 183 p. 4 illus. in color. (Engineering Materials) Hardcover

129.95 €
ISBN 978-3-642-14924-5

A First Course in Differential Equations

This concise and up-to-date textbook is designed for the standard sophomore course in differential equations. It treats the basic ideas, models, and solution methods in a user friendly format that is accessible to engineers, scientists, economists, and mathematics majors. It emphasizes analytical, graphical, and numerical techniques, and it provides the tools needed by students to continue to the next level in applying the methods to more advanced problems. There is a strong connection to applications with motivations in mechanics and heat transfer, circuits, biology, economics, chemical reactors, and other areas.

Contents

Fields of interest
Ordinary Differential Equations; Applications of Mathematics; Mathematical Modeling and Industrial Mathematics

Target groups
Lower undergraduate

Type of publication
Undergraduate textbook

Available
2011. XVIII, 386 p. 82 illus. (Undergraduate Texts in Mathematics) Hardcover

59.95 €
ISBN 978-1-4419-7591-1
A Friendly Guide to Wavelets

G. Kaiser, Center for Signals & Waves, Austin, TX, USA

This volume is designed as a textbook for an introductory course on wavelet analysis and time-frequency analysis aimed at graduate students or advanced undergraduates in science and engineering. It can also be used as a self-study or reference book by practicing researchers in signal analysis and related areas. Since the expected audience is not presumed to have a high level of mathematical background, much of the needed analytical machinery is developed from the beginning. The only prerequisites for the first eight chapters are matrix theory, Fourier series, and Fourier integral transforms. Each of these chapters ends with a set of straightforward exercises designed to drive home the concepts just covered, and the many graphics should further facilitate absorption.

Features

I wholeheartedly recommend this book for a solid and friendly introduction to wavelets, for anyone who is comfortable with the mathematics required of undergraduate electrical engineers. The book’s appeal is that it covers all the fundamental concepts of wavelets in an elegant, straightforward way. It offers truly enjoyable (friendly!) mathematical exposition that is rich in intuitive explanations. [...] 

Contents


Fields of interest

Applications of Mathematics: Signal, Image and Speech Processing; Mathematical Methods in Physics; Fourier Analysis

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. XVI, 300 p. 33 illus. (Modern Birkhäuser Classics) Softcover

49,95 €
ISBN 978-0-8176-8110-4

A Modern Approach to Functional Integration

J.R. Klauder, University of Florida, Gainesville, FL, USA

This text takes advantage of recent developments in the theory of path integration to provide an improved treatment of quantization of systems that either have no constraints or instead involve constraints with demonstratively improved procedures. The modern treatment used by the author is an attempt to make a major paradigm shift in how the art of functional integration is practiced. The techniques developed in the work will prove valuable to graduate students and researchers in physics, chemistry, mathematical physics, and applied mathematics who find it necessary to deal with solutions to wave equations, both quantum and beyond. A Modern Approach to Functional Integration offers insight into a number of contemporary research topics, which may lead to improved methods and results that cannot be found elsewhere in the textbook literature. Exercises are included in most chapters, making the book suitable for a one-semester graduate course on functional integration; prerequisites consist mostly of [...] 

Features

This text takes advantage of recent developments in the theory of path integration to provide an improved treatment of quantization of systems that either have no constraints or instead involve constraints with demonstratively improved procedures. Strong emphasis is placed on the coherent state form of the path integral, which typically is only briefly mentioned in the textbook literature. Also of prime [...] 

Contents


Fields of interest

Measure and Integration; Quantum Physics; Functional Analysis; Theoretical, Mathematical and Computational Physics; Several Complex Variables and Analytic Spaces; Applications of Mathematics

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available


49,95 €

A Short History of Mathematical Population Dynamics

N. Bacaër, IRD (Institut de Recherche pour le Développement), Bondy, France

<p>This book traces the history of population dynamics—a theoretical subject closely connected to genetics, ecology, epidemiology and demography—where mathematics has brought significant insights. It presents an overview of the genesis of several important themes: exponential growth, from Euler and Malthus to the Chinese one-child policy; the development of stochastic models, from Mendel’s laws and the question of extinction of family names to percolation theory for the spread of epidemics, and chaotic populations, where determinism and randomness intertwine.</p>

Features

As Eugene Wigner stressed, mathematics has proven unreasonably effective in the physical sciences and their technological applications. The role of mathematics in the biological, medical and social sciences has been much more modest but has recently grown thanks to the simulation capacity offered by modern computers. This book traces the history of population dynamics [...]

Contents

The Fibonacci sequence (1202).- Halley’s life table (1693).- Euler and the geometric growth of populations (1748–1761).- Daniel Bernoulli, d’Alembert and the inoculation of smallpox (1760).- Malthus and the obstacles to geometric growth (1798).- Verhulst and the logistic equation (1838).- Bienaymé, Cournot and the extinction of family names (1845–1847).- Mendel and heredity (1865).- Galton, Watson and the extinction problem (1873–1875).- Lotka and stable population theory (1907–1911).- The Hardy–Weinberg law (1908).- Ross and malaria (1911).- Lotka, Volterra and the predator–prey system.[...]

Fields of interest

History of Mathematics; Genetics and Population Dynamics; Mathematical Biology in General; Popular Science in Mathematics / Natural Science / Technology

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. X, 158 p. 60 illus. Softcover

24,95 €
ISBN 978-0-85729-114-1
**A Survey of the Almagest**

With Annotation and New Commentary by Alexander Jones

The Almagest, by the Greek astronomer and mathematician Ptolemy, is the most important surviving treatise on early mathematical astronomy, offering historians valuable insight into the astronomy and mathematics of the ancient world. Pedersen's 1974 publication, A Survey of the Almagest, is the most recent in a long tradition of companions to the Almagest. Part paraphrase and part commentary, Pedersen's work has earned the universal praise of historians and serves as the definitive introductory text for students interested in studying the Almagest. In this revised edition, Alexander Jones, a distinguished authority on the history of early astronomy, provides supplementary information and commentary to the original text to account for scholarship that has appeared since 1974. This revision also incorporates various corrections to Pedersen's original text that have been identified since its publication. This volume is intended to provide students of the history of astronomy with a self-contained...

**Contents**

- Preface
- The Almagest through the ages
- Physics and philosophy in the almagest
- Ptolemy as a mathematician
- Spherical astronomy in the almagest
- The motion of the sun
- The theories of the moon
- Paralaxes and eclipses
- The fixed stars
- The superior planets
- The inferior planets
- Retrograde motions and maximum elongations
- Latitudes and visibility periods
- Epilogue - the other Ptolemy
- Appendix A: Dated Observations
- Appendix B: Numerical Parameters
- Bibliography
- Index of Names
- Index of Subjects
- Supplementary Notes

**Target groups**

Professional/practitioner

**Available**


129.95 €
ISBN 978-0-8176-8088-6

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**Algebraic Surfaces**

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Cortona (Arezzo), Italy, June 22-30, 1977

Lectures: A. Beauville: Surfaces algébriques complexes.
- A. Bogomolov: The theory of invariants and its applications to some problems in the algebraic geometry.
- E. Bombieri: Methods of algebraic geometry in Char. P and their applications.
- Seminars: F. Catanese: Pluricanonical mappings of surfaces with $K^2=1,2$, $q=pg=0$.
- F. Catanese: Surfaces of general type.
- I. Dolgacev: Algebraic surfaces with $p_g=q=0$.
- A. Tognoli: Some remarks about the "Nullstellensatz".

**Fields of interest**

Algebraic Geometry

**Target groups**

Research

**Available**

2011. 300 p. (C.I.M.E. Summer Schools, Vol. 76) Softcover

34.95 €
ISBN 978-3-642-11086-3

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**Advances in Dynamic Games**

Theory, Applications, and Numerical Methods for Differential and Stochastic Games

This book focuses on various aspects of dynamic game theory, presenting state-of-the-art research and serving as a testament to the vitality and growth of the field of dynamic games and their applications. The selected contributions, written by experts in their respective disciplines, are outgrowths of presentations originally given at the 13th International Symposium of Dynamic Games and Applications held in Wrocław. The book covers a variety of topics, ranging from theoretical developments in game theory and algorithmic methods to applications, examples, and analysis in fields as varied as environmental management, finance and economics, engineering, guidance and control, and social interaction. Featured throughout are useful tools and valuable resources for researchers, practitioners, and graduate students interested in dynamic games and their applications in applied mathematics, engineering, economics, and management science. Also included in the volume is a special tribute to Arik Melikyan.

**Contents**

- Preface
- Theories, Applications, and Numerical Methods for Differential and Stochastic Games
- Preface
- Contents
- A Tribute to Arik Melikyan
- Part I: Dynamic Games: Theoretical Developments
- Part II: Pursuit Evasion Games
- Part III: Evolutionary Games
- Part IV: Cooperative Games
- Part V: Applications and Numerical Approaches
- Fields of interest
- Game Theory, Economics, Social and Behavioral Sciences
- Game Theory / Mathematical Methods
- Applications of Mathematics
- Computational Methods of Engineering
- Genetics and Population Dynamics
- Target groups
- Research
- Type of publication
- Contributed volume

**Available**


109.95 €
Algorithmic Randomness and Complexity

Intuitively, a sequence such as 10101010101010101010101010101010... does not seem random, whereas 10101010111010101010101010101010... obtained using coin tosses, does. How can we reconcile this intuition with the fact that both are statistically equally likely? What does it mean to say that an individual mathematical object such as a real number is random, or to say that one real is more random than another? And what is the relationship between randomness and computational power. The theory of algorithmic randomness uses tools from computability theory and algorithmic information theory to address questions such as these. Much of this theory can be seen as exploring the relationships between three fundamental concepts: relative computability, as measured by notions such as Turing reducibility; information content, as measured by notions such as Kolmogorov complexity; and randomness of individual objects, as first successfully defined by Martin-Löf. Although algorithmic randomness has been studied for several decades, a dramatic[...]

Arithmetic Geometry

Lectures given at the C.I.M.E. Summer School held in Cetraro, Italy, September 10-15, 2007

Arithmetic Geometry can be defined as the part of Algebraic Geometry connected with the study of algebraic varieties through arbitrary rings, in particular through non-algebraically closed fields. It lies at the intersection between classical algebraic geometry and number theory. A C.I.M.E. Summer School devoted to arithmetic geometry was held in Cetraro, Italy in September 2007, and presented some of the most interesting new developments in arithmetic geometry. This book collects the lecture notes which were written up by the speakers. The main topics concern diophantine equations, local-global principles, diophantine approximation and its relations to Nevanlinna theory, and rationally connected varieties. The book is divided into three parts, corresponding to the courses given by J.-L. Colliot-Thélène, Peter Swinnerton Dyer and Paul Vojta.

Features

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Contents

Number Theory: Algebraic Geometry; Algebraic Geometry connected with the study of algebraic varieties through arbitrary rings, in particular through non-algebraically closed fields. It lies at the intersection between classical algebraic geometry and number theory. A C.I.M.E. Summer School devoted to arithmetic geometry was held in Cetraro, Italy in September 2007, and presented some of the most interesting new developments in arithmetic geometry. This book collects the lecture notes which were written up by the speakers. The main topics concern diophantine equations, local-global principles, diophantine approximation and its relations to Nevanlinna theory, and rationally connected varieties. The book is divided into three parts, corresponding to the courses given by J.-L. Colliot-Thélène, Peter Swinnerton Dyer and Paul Vojta.

Fields of interest

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Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2010. XXIV, 855 p. 8 illus. (Theory and Applications of Computability, © Hardcover

79,95 €
ISBN 978-0-387-95567-4
Boundary Element Methods

This work presents a thorough treatment of boundary element methods (BEM) for solving strongly elliptic boundary integral equations obtained from boundary reduction of elliptic boundary value problems in $\mathbb{R}^3$. The book is self-contained, the prerequisites on elliptic partial differential and integral equations being presented in Chapters 2 and 3. The main focus is on the development, analysis, and implementation of Galerkin boundary element methods, which is one of the most flexible and robust numerical discretization methods for integral equations. For the efficient realization of the Galerkin BEM, it is essential to replace time-consuming steps in the numerical solution process with fast algorithms. In Chapters 5-9 these methods are developed, analyzed, and formulated in an algorithmic way.

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Contents


Fields of interest

Computational Mathematics and Numerical Analysis; Partial Differential Equations

Target groups

Research

Type of publication

Monograph

Available

2011. XX, 684 p. 218 illus., 4 in color. Hardcover

89,95 €

Potential applications of numerical methods for variational problems


Features


Fields of interest

Calculus of Variations, Classical and Modern

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 10-18, 1966


Fields of interest

Calculus of Variations and Optimal Control; Optimization

Target groups

Research

Type of publication

Monograph

Available


34,95 €
ISBN 978-3-642-11041-2


Fields of interest

Calculus of Variations, Classical and Modern

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 10-18, 1966
Categories and Commutative Algebra

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Varenna (Como), Italy, September 12-21, 1971


Features

Contents

Fields of interest
Category Theory, Homological Algebra; Commutative Rings and Algebras

Complex Analysis

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 3-12, 1973


Features

Contents

Fields of interest
Functions of a Complex Variable; Several Complex Variables; Analytic Spaces

Target groups
Research

Type of publication
Contributed volume

Available


44,95 €
ISBN 978-3-642-10963-8

Concrete Functional Calculus

Concrete Functional Calculus focuses primarily on differentiability of some nonlinear operators on functions or pairs of functions. This includes composition of two functions, and the product integral, taking a matrix- or operator-valued coefficient function into a solution of a system of linear differential equations with the given coefficients. For nonlinear integral equations with respect to possibly discontinuous functions having unbounded variation, existence and uniqueness of solutions are proved under suitable assumptions.Key features and topics:

- Extensive usage of p-variation of functions
- Applications to stochastic processes.

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- Extensive usage of p-variation of functions
- Applications to stochastic processes.

Contents
Preface.- 1 Introduction and Overview.- 2 Definitions and Basic Properties of Extended Riemann-Stieltjes Integrals.- 3 Phi-variation and p-variation; Inequalities for Integrals.- 4 Banach Algebras.- 5 Derivatives and Analyticity in Normed Spaces.- 6 Nemityskii Operators on Some Function Spaces.- 7 Nemityskii Operators on Oder Spaces.- 8 Two-Function Composition.- 9 Product Integration.- 10 Nonlinear Differential and Integral Equations.- 11 Fourier Series.- 12 Stochastic Processes and Phi-Variation.- Appendix Nonatomic Measure Spaces.- References.- Subject Index.- Author Index.- Index of Notation.

Fields of interest
Functional Analysis; Integral Equations; Operator Theory; Real Functions

Target groups
Research

Type of publication
Monograph

Available

2011. XI, 671 p. 3 illus. (Springer Monographs in Mathematics) Hardcover

99,95 €
ISBN 978-1-4419-6949-1
Recent advances in the fields of knowledge representation, reasoning and human-computer interaction have paved the way for a novel approach to treating and handling context. The field of research presented in this book addresses the problem of contextual computing in artificial intelligence based on the state of the art in knowledge representation and human-computer interaction. The author puts forward a knowledge-based approach for employing high-level context in order to solve some persistent and challenging problems in the chosen showcase domain of natural language understanding. Specifically, the problems addressed concern the handling of noise due to speech recognition errors, semantic ambiguities, and the notorious problem of underspecification. Consequently the book examines the individual contributions of contextual composing for different types of context. Therefore, contextual information stemming from the domain at hand, prior discourse, and the specific user and real world situation are [...]

Contents
1. The Problem of Understanding - 2. of the Art - 3. Domain and Discourse - 4. User and Situation -

Fields of interest
Applications of Mathematics; Artificial Intelligence (incl. Robotics); Computational Linguistics; Language Translation and Linguistics

Target groups
Research

Type of publication
Contributed volume

Available
34,95 €
ISBN 978-3-642-11062-7
Differential Topology

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Varenna (Como), Italy, August 25 - September 4, 1976


Features

Contents

Fields of interest
Manifolds and Cell Complexes (incl. Diff. Topology)

Target groups
Research

Type of publication
Contributed volume

Available
2011. 159 p. (C.I.M.E. Summer Schools, Vol. 73) Softcover
19.95 € ISBN 978-3-642-11101-3

Eigenvalues of Non-Linear Problems

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Varenna (Como), Italy, June 16-25, 1974


Features

Contents

Fields of interest
Partial Differential Equations; Engineering Fluid Dynamics

Target groups
Research

Type of publication
Contributed volume

Available
2011. 239 p. (C.I.M.E. Summer Schools, Vol. 67) Softcover
34.95 € ISBN 978-3-642-10939-3
Engineering Differential Equations
Theory and Applications

This book is a comprehensive treatment of engineering undergraduate differential equations as well as linear vibrations and feedback control. While this material has traditionally been separated into different courses in undergraduate engineering curricula, this text provides a streamlined and efficient treatment of material normally covered in three courses. Ultimately, engineering students study mathematics in order to be able to solve problems within the engineering realm. Engineering Differential Equations: Theory and Applications guides students to approach the mathematical theory with much greater interest and enthusiasm by teaching the theory together with applications. Additionally, it includes an abundance of detailed examples. Appendices include numerous C and FORTRAN example programs. This book is intended for engineering undergraduate students, particularly aerospace and mechanical engineers and students in other disciplines concerned with mechanical systems analysis and control. [...] 

Features
This book is a comprehensive treatment of engineering undergraduate differential equations as well as linear vibrations and feedback control. While this material has traditionally been separated into different courses in undergraduate engineering curricula, this text provides a streamlined and efficient treatment of material normally covered in three courses. Ultimately, engineering students study mathematics [...] 

Contents

Fields of interest
Ordinary Differential Equations; Appl. Mathematics / Computational Methods of Engineering; Applications of Mathematics; Systems Theory, Control

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XVI, 748 p. 313 illus. Hardcover
69,95 €

Fixed Point Theory in Ordered Sets and Applications

From Differential and Integral Equations to Game Theory

This monograph provides a unified and comprehensive treatment of an order-theoretic fixed point theory in partially ordered sets and its various useful interactions with topological structures. The material progresses systematically, by presenting the preliminaries before moving to more advanced topics. In the treatment of the applications a wide range of mathematical theories and methods from nonlinear analysis and integration theory are applied; an outline of which has been given an appendix chapter to make the book self-contained. Graduate students and researchers in nonlinear analysis, pure and applied mathematics, game theory and mathematical economics will find this book useful.

Features
This monograph provides a unified and comprehensive treatment of an order-theoretic fixed point theory in partially ordered sets and its various useful interactions with topological structures. It begins with a discussion of some simple examples of the order-theoretic fixed point results along with simple applications from each of the diverse fields. The fixed point theory is then developed and [...] 

Contents
Preface.- 0. Introduction.- 1. Preliminaries.- 1.1 Distribution densities on manifolds.- 1.2 The method of stationary phase.- 1.3 The wave front set of a distribution.- 2. Local Theory of Fourier Integrals.- 2.1 Symbols.- 2.2 Distributions defined by oscillatory integrals.- 2.3 Oscillatory integrals with nondegenerate phase functions.- 2.4 Fourier integral operators (local theory).- 2.5 Pseudodifferential operators in Rn.- 3. Symplectic Differential Geometry.- 3.1 Vector fields.- 3.2 Differential forms.- 3.3 The canonical 1- and 2-form T*(X).- 3.4 Symplectic vector spaces.- 3.5[...]

Fields of interest
Fourier Analysis; Integral Equations; Operator Theory; Partial Differential Equations

Target groups
Graduate

Type of publication
Monograph

Available
2011. XIII, 477 p. 20 illus. Hardcover
89,95 €

Fourier Integral Operators

This volume is a useful introduction to the subject of Fourier integral operators and is based on the author’s classic set of notes. Covering a range of topics from Hörmander’s exposition of the theory, Duistermaat approaches the subject from symplectic geometry and includes application to hyperbolic equations (= equations of wave type) and oscillatory asymptotic solutions which may have caustics. This text is suitable for mathematicians and (theoretical) physicists with an interest in (linear) partial differential equations, especially in wave propagation, rep. WKB-methods. Familiarity with analysis (distributions and Fourier transformation) and differential geometry is useful. Additionally, this book is designed for a one-semester introductory course on Fourier integral operators aimed at a broad audience.

Features
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Functional Analysis, Sobolev Spaces and Partial Differential Equations

This textbook is a completely revised, updated, and expanded English edition of the important Analyse fonctionelle (1983). In addition, it contains a wealth of problems and exercises (with solutions) to guide the reader. Uniquely, this book presents in a coherent, concise and unified way the main results from functional analysis together with the main results from the theory of partial differential equations (PDEs). Although there are many books on functional analysis and many on PDEs, this is the first to cover both of these closely connected topics. Since the French book was first published, it has been translated into Spanish, Italian, Japanese, Korean, Romanian, Greek and Chinese. The English edition makes a welcome addition to this list.

Features

Uniquely, this book presents a coherent, concise and unified way of combining elements from two distinct "worlds," functional analysis (FA) and partial differential equations (PDEs), and is intended for students who have a good background in real analysis. This text presents a smooth transition from FA to PDEs by analyzing in great detail the simple case of one-dimensional PDEs (i.e., ODEs), a more manageable [...]

Contents


Fields of interest

Functional Analysis; Partial Differential Equations

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Functional Equations and Inequalities

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in La Mendola (Trento), Italy, August 20-28, 1970


Features


Contents


Fields of interest

Difference and Functional Equations

Target groups

Research

Type of publication

Monograph

Generalizations of Thomae’s Formula for Zn Curves

Previous publications on the generalization of the Thomae formulae to Zn curves have emphasized the theory’s implications in mathematical physics and depended heavily on applied mathematical techniques. This book redevelops these previous results demonstrating how they can be derived directly from the basic properties of theta functions as functions on compact Riemann surfaces. “Generalizations of Thomae’s Formula for Zn Curves” includes several refocused proofs developed in a generalized context that is more accessible to researchers in related mathematical fields such as algebraic geometry, complex analysis, and number theory. This book is intended for mathematicians with an interest in complex analysis, algebraic geometry or number theory as well as physicists studying conformal field theory.

Features

This book provides a comprehensive overview of the theory of theta functions, as applied to compact Riemann surfaces, as well as the necessary background for understanding and proving the Thomae formulae. The exposition examines the properties of a particular class of compact Riemann surfaces, i.e., the Zn curves, and thereafter focuses on how to prove the Thomae formulae, which give a relation [...]

Contents


Fields of interest

Algebraic Geometry; Functions of a Complex Variable; Several Complex Variables and Analytic Spaces; Special Functions; Number Theory

Target groups

Research

Type of publication

Monograph

Available


89.95 €

44,95 €
ISBN 978-3-642-11002-3

2011. 425 p. (C.I.M.E. Summer Schools, Vol. 54) Softcover

64,95 €
ISBN 978-3-642-11003-0
Geodesic and Horocyclic Trajectories

Geodesic and Horocyclic Trajectories presents an introduction to the topological dynamics of two classical flows associated with surfaces of curvature \( \pm 1 \), namely the geodesic and horocycle flows. Written primarily with the idea of highlighting, in a relatively elementary framework, the existence of gateways between some mathematical fields, and the advantages of using them, historical aspects of this field are not addressed and most of the references are reserved until the end of each chapter in the Comments section. Topics within the text cover geometry, and examples, of Fuchsian groups; topological dynamics of the geodesic flow; Schottky groups; the Lorentzian point of view and Trajectories and Diophantine approximations.

Features
During the past thirty years, strong relationships have interwoven the fields of dynamical systems, linear algebra and number theory. This rapport between different areas of mathematics has enabled the resolution of some important conjectures and has in fact given birth to new ones. This book sheds light on these relationships and their applications in an elementary setting, by showing that the study of light on these relationships and their applications in an elementary setting, by showing that the study of

Contents
Dynamics of Fuchsian groups. - Examples of Fuchsian groups. - Topological dynamics of the geodesic flow. - Schottky groups. - Topological dynamics. - The Lorentzian point of view. - Trajectories and Diophantine approximations.

Fields of interest
Dynamical Systems and Ergodic Theory; Number Theory; Differential Geometry

Target groups
Graduate

Type of publication
Graduate/Advanced undergraduate textbook

Available
2011. XII, 176 p. (Universitext) Softcover
49,95 €
ISBN 978-0-85729-072-4

Geometric Design of Linkages

This book is an introduction to the mathematical theory of design for articulated mechanical systems known as linkages. The focus is on sizing mechanical constraints that guide the movement of a work piece, or end-effector, of the system. The function of the device is prescribed as a set of positions to be reachable by the end-effector; and the mechanical constraints are formed by joints that limit relative movement. The goal is to find all the devices that can achieve a specific task. Formulated in this way the design problem is purely geometric in character. Robot manipulators, walking machines, and mechanical hands are examples of articulated mechanical systems that rely on simple mechanical constraints to provide a complex workspace for the end-effector. The principles presented in this book form the foundation for a design theory for these devices. The emphasis, however, is on articulated systems with fewer degrees of freedom than that of the typical robotic system, and therefore, less...

Features
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Contents

Fields of interest
Systems Theory; Control; Robotics and Automation; Control; Algebraic Geometry

Target groups
Graduate

Type of publication
Graduate/Advanced undergraduate textbook

Available
89,95 €

Geometric Measure Theory and Minimal Surfaces

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Varenna (Como), Italy, August 24 - September 2, 1972


Features

Contents

Fields of interest
Measure and Integration

Target groups
Research

Type of publication
Contributed volume

Available
34,95 €
ISBN 978-3-642-10969-0
Geometry and Spectra of Compact Riemann Surfaces

This monograph is a self-contained introduction to the geometry of Riemann surfaces of constant curvature −1 and their length and eigenvalue spectra. It focuses on two subjects: the geometric theory of compact Riemann surfaces of genus greater than one, and the relationship of the Laplace operator with the geometry of such surfaces. The first part of the book is written in textbook form at the graduate level, with few requisites other than background in either differential geometry or complex Riemann surface theory. It begins with an account of the Penzel–Nielsen approach to Teichmüller Space. Hyperbolic trigonometry and Bers’ partition theorem (with a new proof which yields explicit bounds) are shown to be simple but powerful tools in this context. The second part of the book is a self-contained introduction to the spectrum of the Laplacian based on head equations. The approach chosen yields a simple proof that compact Riemann surfaces have the same eigenvalues if and only if they have the same [•].

Features
This classic monograph is a self-contained introduction to the geometry of Riemann surfaces of constant curvature −1 and their length and eigenvalue spectra. It focuses on two subjects: the geometric theory of compact Riemann surfaces of genus greater than one, and the relationship of the Laplace operator with the geometry of such surfaces. The first part of the [•]

Contents

Fields of interest
Several Complex Variables and Analytic Spaces; Algebraic Geometry; Algebra

Target groups
Graduate

Type of publication
Monograph

Available
2010. XVII, 474 p. 145 illus. (Modern Birkhäuser Classics) Softcover
59.95 € ISBN 978-0-8176-4991-3

Handbook of Mathematical Methods in Imaging

The Handbook of Mathematical Methods in Imaging provides a comprehensive treatment of the mathematical techniques used in imaging science. The material is grouped into two central themes, namely, Inverse Problems (Algorithmic Reconstruction) and Signal and Image Processing. Each section within the themes covers applications (modelling), mathematical, numerical methods (using a case example) and open questions. Written by experts in the area, the presentation is mathematically rigorous. The entries are cross-referenced for easy navigation through connected topics. Available in both print and electronic forms, the handbook is enhanced by more than 150 illustrations and an extended bibliography. It will benefit students, scientists and researchers in applied mathematics. Engineers and computer scientists working in imaging will also find this handbook useful.

Features
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Contents

Fields of interest
Applications of Mathematics; Image Processing and Computer Vision; Signal, Image and Speech Processing; Numerical Analysis; Imaging / Radiology

Target groups
Research

Type of publication
Handbook

Available
2011. XVII, 1688 p. 150 illus. In 3 volumes, not available separately Hardcover
499.00 € ISBN 978-0-387-92919-4

Harmonic Analysis of Operators on Hilbert Space

The existence of unitary dilations makes it possible to study arbitrary contractions on a Hilbert space using the tools of harmonic analysis. The first edition of this book was an account of the progress done in this direction in 1950-70. Since then, this work has influenced many other areas of mathematics, most notably interpolation theory and control theory. This second edition, in addition to revising and amending the original text, focuses on further developments of the theory. Specifically, the last two chapters of the book continue and complete the study of two operator classes: operators whose powers do not converge strongly to zero, and operators whose functional calculus (as introduced in Chapter III) is not injective. For both of these classes, a wealth of material on structure, classification and invariant subspaces is included in Chapters IX and X. Several chapters conclude with a sketch of other developments related with (and developing) the material of the first edition.

Features
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Contents

Fields of interest
Abstract Harmonic Analysis; Operator Theory

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2010. XIII, 474 p. 1 illus. (Universitext) Softcover
59.95 € ISBN 978-1-4419-6093-1
Hybrid Optimization

The Ten Years of CPAIOR

Hybrid Optimization focuses on the application of artificial intelligence and operations research techniques to constraint programming for solving combinatorial optimization problems. This book covers the most relevant topics investigated in the last ten years by leading experts in the field, and speculates about future directions for research. This book includes contributions by experts from different but related areas of research including constraint programming, decision theory, operations research, SAT, artificial intelligence, as well as others. These diverse perspectives are actively combined and contrasted in order to evaluate their relative advantages. This volume presents techniques for hybrid modeling, integrated solving strategies including global constraints, decomposition techniques, use of relaxations, and search strategies including tree search, local search and metaheuristics. Various applications of the techniques presented as well as supplementary computational tools are also discussed.

Features
This volume focuses on the integration of artificial intelligence and constraint programming to solve problems in operations research and combinatorial optimization. This volume collects the contributions of experts from various research areas including decision theory, systems engineering, propositional satisfiability, mathematical optimization, and artificial intelligence. These invited scholars describe and contrast various approaches and techniques presented in the field of hybrid optimization.

Contents

Fields of interest
Optimization; Artificial Intelligence (incl. Robotics); Operations Research; Mathematical Programming; Computational Intelligence

Target groups
Research

Type of publication
Contributed volume

Available

129,95 €

S. Hentenryck, MIT, Cambridge, MA, USA

Introduction to Quantum Groups

The quantum groups discussed in this book are the quantized enveloping algebras introduced by Drinfeld and Jimbo in 1985, or variations thereof. It is shown that these algebras have natural integral forms which can be specialized at roots of 1 and yield new objects which include quantum versions of the semi-simple groups over fields of positive characteristic. The theory of quantum groups has led to a new, extremely rigid structure, in which the objects of the theory are provided with canonical bases with rather remarkable properties. The book contains an extensive treatment of the theory of canonical bases in the framework of perverse sheaves. The theory developed in the book includes the case of quantum affine enveloping algebras and, more generally, the quantum analogs of the Kac—Moody Lie algebras. This book will be of interest to mathematicians working in the representation theory of Lie groups and Lie algebras, knot theorists and to theoretical physicists and graduate students. Since large[...]

Features
The quantum groups discussed in this book are the quantized enveloping algebras introduced by Drinfeld and Jimbo in 1985, or variations thereof. It is shown that these algebras have natural integral forms which can be specialized at roots of 1 and yield new objects, which include quantum versions of the semi-simple groups over fields of positive characteristic. The theory of quantum groups has led to a [...]

Contents

Fields of interest
Group Theory and Generalizations; Quantum Physics; Topological Groups, Lie Groups; Algebra; Mathematical Methods in Physics

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2010. XIV, 346 p. (Modern Birkhäuser Classics) Softcover

54,95 €

G. Lusztig, MIT, Cambridge, MA, USA
Materials with Memory
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 2-11, 1977


Features

Contents

Fields of interest
Partial Differential Equations; Thermodynamics

Target groups
Research

Type of publication
Contributed volume

Available
34,95 €
ISBN 978-3-642-11095-5

Mathematical Optimisation in Economics
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in L’Aquila, Italy, August 29-September 7, 1965


Features

Contents

Fields of interest
Game Theory, Economics, Social and Behavioral Sciences; Operations Research, Mathematical Programming

Target groups
Research

Type of publication
Contributed volume

Available
34,95 €
ISBN 978-3-642-11038-2

Mathematics for Finance
An Introduction to Financial Engineering

As with the first edition, Mathematics for Finance: An Introduction to Financial Engineering combines financial motivation with mathematical style. Assuming only basic knowledge of probability and calculus, it presents three major areas of mathematical finance, namely Option pricing based on the no-arbitrage principle in discrete and continuous time setting, Markowitz portfolio optimisation and Capital Asset Pricing Model, and basic stochastic interest rate models in discrete setting. From the reviews of the first edition: "This text is an excellent introduction to Mathematical Finance. Armed with a knowledge of basic calculus and probability a student can use this book to learn about derivatives, interest rates and their term structure and portfolio management." (Zentralblatt MATH) "Given these basic tools, it is surprising how high a level of sophistication the authors achieve, covering such topics as arbitrage-free valuation, binomial trees, and risk-neutral valuation." (www.riskbook.com) "The[...]

Features
As with the first edition, Mathematics for Finance: An Introduction to Financial Engineering combines financial motivation with mathematical style. Assuming only basic knowledge of probability and calculus, it presents three major areas of mathematical finance, namely Option pricing based on the no-arbitrage principle in discrete and continuous time setting, Markowitz portfolio optimisation and the[...]

Contents

Fields of interest
Quantitative Finance; Finance / Banking

Target groups
Upper undergraduate

Type of publication
Undergraduate textbook

Available
2011. XIII, 336 p. 66 illus. (Springer Undergraduate Mathematics Series) Softcover
39,95 €
ISBN 978-0-85729-081-6
### Mathematics

#### Matrices
**Theory and Applications**

In this book, Denis Serre begins by providing a clean and concise introduction to the basic theory of matrices. He then goes on to give many interesting applications of matrices to different aspects of mathematics and also other areas of science and engineering. With forty percent new material, this second edition is significantly different from the first edition. Newly added topics include: • Dunford decomposition, • tensor and exterior calculus, polynomial identities, • regularity of eigenvalues for complex matrices, • functional calculus and the Dunford–Taylor formula, • numerical range, • Weyl’s and von Neumann’s inequalities, and • Jacobi method with random choice. The book mixes together algebra, analysis, complexity theory and numerical analysis. As such, this book will provide many scientists, not just mathematicians, with a useful and reliable reference. It is intended for advanced undergraduate and graduate students with either applied or theoretical goals. This book is based on a...

#### Features
- J.M. Cush- ing: Volterra integrodifferential equations in population dynamics.
- K.P. Hadeler: Diffusion equations in biology.
- S.O. Londen: Integral equations of Volterra type.

#### Contents
- Preface to the First Edition.
- List of Symbols.
- 1 Elementary Linear and Multilinear Algebra.
- 2 What Are Matrices?
- 3 Square Matrices.
- 4 Tensor and Exterior Products.
- 5 Matrices with Real or Complex Entries.
- 6 Hermitean Matrices.
- 7 Norms.
- 8 Nonnegative Matrices.
- 9 Matrices with Entries in a Principal Ideal Domain: Jordan Reduction.
- 10 Exponential of a Matrix, Polar Decomposition, and Classical Groups.
- 11 Matrix Factorizations and Their Applications.
- 12 Iterative Methods for Linear Systems.
- 13 Approximation of Eigenvalues.
- References.
- Index of Symbols.

#### Fields of interest
- Convex and Discrete Geometry

#### Target groups
- Research

#### Type of publication
- Contributed volume

#### Available
- 44.95 €
- ISBN 978-3-642-11109-9
Mean Field Models for Spin Glasses

Volume I: Basic Examples

This is a new, completely revised, updated and enlarged edition of the author’s Ergebnisse vol. 46: “Spin Glasses: A Challenge for Mathematicians”. This new edition will appear in two volumes, the present first volume presents the basic results and methods, the second volume is expected to appear in 2011. In the eighties, a group of theoretical physicists introduced several models for certain disordered systems, called ‘spin glasses’. These models are simple and rather canonical random structures, of considerable interest for several branches of science (statistical physics, neural networks and computer science). The physicists studied them by non-rigorous methods and predicted spectacular behaviors. This book introduces in a rigorous manner this exciting new area to the mathematically minded reader. It requires no knowledge whatsoever of any physics. The first volume of this new and completely rewritten edition presents six fundamental models and the basic techniques to study them.

Features
Not applicable. There is no back cover text for the Ergebnisse series.

Contents

Fields of interest
Probability Theory and Stochastic Processes; Mathematical Methods in Physics; Condensed Matter Physics

Target groups
Research

Type of publication
Monograph

Measure-Valued Branching Markov Processes

Measure-valued branching processes arise as high density limits of branching particle systems. The Dawson-Watanabe superprocess is a special class of those. The author constructs superprocesses with Borel right underlying motions and general branching mechanisms and shows the existence of their Borel right realizations. He then uses transformations to derive the existence and regularity of several different forms of the superprocesses. This treatment simplifies the constructions and gives useful perspectives. Martingale problems of superprocesses are discussed under Feller type assumptions. The most important feature of the book is the systematic treatment of immigration superprocesses and generalized Ornstein-Uhlenbeck processes based on skew convolution semigroups. The volume addresses researchers in measure-valued processes, branching processes, stochastic analysis, biological and genetic models, and graduate students in probability theory and stochastic processes.

Features
Measure-valued branching processes arise as high density limits of branching particle systems. The Dawson-Watanabe superprocess is a special class of those. The author constructs superprocesses with Borel right underlying motions and general branching mechanisms and shows the existence of their Borel right realizations. He then uses transformations to derive the existence and regularity of several different [...]
### Modern Questions of Celestial Mechanics

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, May 21-31, 1967

| --- | --- | --- | --- | --- | --- |

#### Features


#### Contents


#### Fields of interest

Partial Differential Equations; Mechanics; Astronomy, Astrophysics and Cosmology

### Non-Linear Mechanics

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 4-13, 1972

| --- | --- | --- | --- | --- | --- |

#### Features


#### Contents


#### Fields of interest

Ordinary Differential Equations; Theoretical and Applied Mechanics; Theoretical, Mathematical and Computational Physics

### Non-linear Continuum Theories in Mechanics and Physics and their Applications

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, September 3-11, 1969

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#### Features


#### Contents


#### Fields of interest

Partial Differential Equations; Thermodynamics; Continuum Mechanics and Mechanics of Materials; Mechanics
The third of three volumes on partial differential equations, this is devoted to nonlinear PDE. It treats a number of equations of classical continuum mechanics, including relativistic versions, as well as various equations arising in differential geometry, such as in the study of minimal surfaces, isometric imbedding, conformal deformation, harmonic maps, and prescribed Gauss curvature. In addition, some nonlinear diffusion problems are studied. It also introduces such analytical tools as the theory of Sobolev spaces, H"older spaces, Hardy spaces, and Morrey spaces, and also a development of Calderon-Zygmund theory and paradifferential operator calculus. The book is aimed at graduate students in mathematics, and at professional mathematicians with an interest in partial differential equations, mathematical physics, differential geometry, harmonic analysis and complex analysis.

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**Fields of interest**
Partial Differential Equations

**Target groups**
Research

**Type of publication**
Monograph

**Available**
Hardcover

99.95 €
ISBN 978-1-4419-7048-0

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This second in the series of three volumes builds upon the basic theory of linear PDE given in volume 1, and pursues more advanced topics. Analytical tools introduced here include pseudodifferential operators, the functional analysis of self-adjoint operators, and Wiener measure. The book also develops basic differential geometrical concepts, centered about curvature. Topics covered include spectral theory of elliptic differential operators, the theory of scattering of waves by obstacles, index theory for Dirac operators, and Brownian motion and diffusion.

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**Fields of interest**
Partial Differential Equations

**Target groups**
Research

**Type of publication**
Monograph

**Available**
Hardcover

99.95 €
ISBN 978-1-4419-7051-0

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This volume covers recent developments in the design, operation, and management of telecommunication and computer network systems in performance engineering and addresses issues of uncertainty, robustness, and risk. Uncertainty regarding loading and system parameters leads to challenging optimization and robustness issues. Stochastic modeling combined with optimization theory ensures the optimum end-to-end performance of telecommunication or computer network systems. In view of the diverse design options possible, supporting models have many adjustable parameters and choosing the best set for a particular performance objective is delicate and time-consuming. An optimization based approach determines the optimal possible allocation for these parameters. Researchers and graduate students working at the interface of telecommunications and operations research will benefit from this book. Due to the practical approach, this book will also serve as a reference tool for scientists and engineers in[...]

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**Contents**

**Fields of interest**
Operational Research, Mathematical Programming; System Performance and Evaluation; Communications Engineering, Networks; Optimization; Probability Theory and Stochastic Processes; Operation Research / Decision Theory

**Target groups**
Research

**Type of publication**
Contributed volume
Potential Theory
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Stresa (Varese), Italy, July 2-10, 1969


Features

Contents

Fields of interest
Potential Theory

Target groups
Research

Type of publication
Contributed volume

Available
89,95 €
ISBN 978-1-4419-0533-8

Probability Measures on Semigroups
Convolution Products, Random Walks and Random Matrices

This second edition presents up-to-date material on the theory of weak convergence of convolution products of probability measures in semigroups, the theory of random walks on semigroups, and their applications to products of random matrices. In addition, this unique work examines the essentials of abstract semigroup theory and its application to concrete semigroups of matrices. This substantially revised text includes exercises at various levels at the end of each section and includes the best available proofs on the most important theorems used in a book, making it suitable for a one semester course on semigroups. In addition, it could also be used as a main text or supplementary material for courses focusing on probability on algebraic structures or weak convergence. This book is ideally suited to graduate students in mathematics, and students in other fields, such as engineering and the sciences with an interest in probability. Students in statistics using advanced probability will also...

Features
Semigroups are very general structures and scientists often come across them in various contexts in science and engineering. In this second edition of Probability Measures on Semigroups, first published in the University Series in Mathematics in 1996, the authors present the theory of weak convergence of convolution products of probability measures on semigroups, the theory of random walks on semigroups, and ...

Contents

Fields of interest
Probability Theory and Stochastic Processes; Probability and Statistics in Computer Science; Topological Groups, Lie Groups; Analysis

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 430 p. (Probability and Its Applications) Hardcover
89,95 €
ISBN 978-0-387-77547-0
The book provides a self-contained introduction to classical Number Theory. All the proofs of the individual theorems and the solutions of the exercises are being presented step by step. Some historical remarks are also presented. The book will be directed to advanced undergraduate, beginning graduate students as well as to students who prepare for mathematical competitions (ex. Mathematical Olympiads and Putnam Mathematical competition).

Features
This book is designed to introduce some of the most important theorems and results from number theory while testing the reader’s understanding through carefully selected Olympiad-caliber problems. These problems and their solutions provide the reader with an opportunity to sharpen their skills and to apply the theory. This framework guides the reader to an easy comprehension of some of the jewels of number theory.

Contents
- Introduction
- The Fundamental Theorem of Arithmetic
- Arithmetic functions
- Perfect numbers
- Fermat numbers
- Basic theory of congruences
- Quadratic residues and the Law of Quadratic Reciprocity
- The functions p(x) and l(x)
- The Riemann zeta function
- Dirichlet series
- Parity of integers
- Generating functions
- Solved exercises and problems
- The harmonic series of prime numbers
- Lagrange four-square theorem
- Bertrand postulate
An inequality for the function p(n)
An elementary proof of the Prime Number Theorem
Historical remarks on Fermat’s Last Theorem

Fields of interest
Number Theory

Target groups
Lower undergraduate

Type of publication
Undergraduate textbook

Available
2011. XV, 324 p. 3 illus. Hardcover
59.95 €
Questions on Algebraic Varieties
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Varenna (Como), Italy, September 7-17, 1969


Features

Contents

Fields of interest
Algebraic Geometry; Algebraic Topology

Target groups
Research

Type of publication
Contributed volume

Available
34,95 €
ISBN 978-3-642-11014-6

Ramsey Theory
Yesterday, Today, and Tomorrow

Ramsey theory is a relatively “new,” approximately 100 year-old direction of fascinatung mathematical thought that touches on many classic fields of mathematics such as combinatorics, number theory, geometry, ergodic theory, topology, combinatorial geometry, set theory, and measure theory. Ramsey theory possesses its own unifying ideas, and some of its results are among the most beautiful theorems of mathematics. The underlying theme of Ramsey theory can be formulated as: any finite coloring of a large enough system contains a monochromatic subsystem of higher degree of organization than the system itself, or as R.S. Motzkin famously put it, absolute disorder is impossible. Ramsey Theory: Yesterday, Today, and Tomorrow explores the theory’s history, recent developments, and some promising future directions through invited surveys written by prominent researchers in the field. The first three surveys provide historical background on the subject; the last three address Euclidean Ramsey theory and related questions.

Features
Ramsey theory is a relatively “new,” approximately 100 year-old direction of fascinatung mathematical thought that touches on many classic fields of mathematics such as combinatorics, number theory, geometry, ergodic theory, topology, combinatorial geometry, set theory, and measure theory. Ramsey theory possesses its own unifying ideas, and some of its results are among the most beautiful theorems.

Contents
How This Book Came into Being.- Table of Contents.- Ramsey Theory before Ramsey, Prehistory and Early History: An Essay in 13 Parts.- Eighty Years of Ramsey RC (k, k) . . . and Counting!.- Ramsey Numbers Involving Cycles.- On the function of Erdős and Rogers.- Large Monochromatic Components in Edge Colorings of Graphs.- Salam’s Lemma: Mutant Offspring of a Euclidean Ramsey Problem: From 1973, with Numerous Applications.- Open Problems in Euclidean Ramsey Theory.- Chromatic Number of the Plane and Its Relatives, History, Problems and Results: An Essay in 11 Parts.- Euclidean Distance Graphs.

Fields of interest
Combinatorics; Dynamical Systems and Ergodic Theory; Convex and Discrete Geometry

Target groups
Graduate

Type of publication
Monograph

Available
59,95 €
ISBN 978-0-8176-8091-6

Recursion Theory and Computational Complexity
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 14-23, 1979


Features

Contents

Fields of interest
Mathematical Logic and Foundations

Target groups
Research

Type of publication
Contributed volume

Available
34,95 €
ISBN 978-3-642-11071-9
Representation Theory of the Virasoro Algebra

The Virasoro algebra is an infinite dimensional Lie algebra that plays an increasingly important role in mathematics and theoretical physics. This book describes some fundamental facts about the representation theory of the Virasoro algebra in a self-contained manner. Topics include the structure of Verma modules and Fock modules, the classification of (unitarizable) Harish-Chandra modules, tilting equivalence, and the rational vertex operator algebras associated to the so-called minimal series representations. Covering a wide range of material, this book has three appendices which provide background information required for some of the chapters. The authors organize fundamental results in a unified way and refine existing proofs. For instance in chapter three, a generalization of Jantzen filtration is reformulated in an algebraic manner, and geometric interpretation is provided. Statements, widely believed to be true, are collated, and results which are known but not verified are proven, such as the [...]

Features
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Contents

Fields of interest
Algebra; Non-associative Rings and Algebras; Theoretical, Mathematical and Computational Physics; Topological Groups, Lie Groups; Special Functions; Combinatorics

Target groups
Research

Type of publication
Contributed volume

Available
19.95 € ISBN 978-3-642-10942-3

Some Aspects of Ring Theory


Features

Contents

Fields of interest
Associative Rings and Algebras; Several Complex Variables and Analytic Spaces

Target groups
Research

Type of publication
Contributed volume

Available
34.95 € ISBN 978-3-642-11035-1

Singlarities of Analytic Spaces


Features

Contents

Fields of interest
Several Complex Variables and Analytic Spaces

Available
2011. XVIII, 474 p. 15 illus. (Springer Monographs in Mathematics) Hardcover
89.95 € ISBN 978-0-85729-159-2
Spectral Analysis

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Varenna (Como), Italy, August 24-September 2, 1973


Contents


Features


Fields of interest

Fluid Dynamics

Numerical and Computational Physics; Engineering

Computational Mathematics and Numerical Analysis

Order Methods

International Conference on Spectral and High Order Methods (2009), and provides an overview of the depth and breadth of the activities within this important research area. The carefully reviewed selection of the papers will provide the reader with a snapshot of state-of-the-art and help initiate new research directions through the extensive bibliography.

Features

The book contains a selection of high quality papers, chosen among the best presentations during the International Conference on Spectral and High-Order Methods (2009), and provides an overview of the depth and breadth of the activities within this important research area. The carefully reviewed selection of the papers will provide the reader with a snapshot of state-of-the-art and help initiate new research.

Fields of interest

Computational Mathematics and Numerical Analysis

Computational Science and Engineering

Numerical and Computational Physics

Engineering Fluid Dynamics

Target groups

Research

Type of publication

Proceedings

Available


109,95 €

ISBN 978-3-642-15336-5

Stability Problems

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 2-11, 1974


Features


Fields of interest

Dynamical Systems and Ergodic Theory

Target groups

Research

Type of publication

Proceedings

Available


34,95 €

ISBN 978-3-642-10948-5
Statistical Mechanics

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 21-27, 1976


Features

Contents

Fields of interest
Dynamical Systems and Ergodic Theory; Continuum Mechanics and Mechanics of Materials

Stereodynamics

Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 21-27, 1976


Features

Contents

Fields of interest
Partial Differential Equations; Mechanics

Stochastic Analysis 2010

Stochastic Analysis aims to provide mathematical tools to describe and model high dimensional random systems. Such tools arise in the study of Stochastic Differential Equations and Stochastic Partial Differential Equations, Infinite Dimensional Stochastic Geometry, Random Media and Interacting Particle Systems, Super-processes, Stochastic Filtering, Mathematical Finance, etc. Stochastic Analysis has emerged as a core area of late 20th century Mathematics and is currently undergoing a rapid scientific development. The special volume “Stochastic Analysis 2010” provides a sample of the current research in the different branches of the subject. It includes the collected works of the participants at the Stochastic Analysis section of the 7th ISAAC Congress organized at Imperial College London in July 2009.

Features
Stochastic Analysis aims to provide mathematical tools to describe and model high dimensional random systems. Such tools arise in the study of Stochastic Differential Equations and Stochastic Partial Differential Equations, Infinite Dimensional Stochastic Geometry, Random Media and Interacting Particle Systems, Super-processes, Stochastic Filtering, Mathematical Finance, etc. Stochastic Analysis has emerged...
Stochastic Differential Equations
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Cortona (Arezzo), Italy, May 29-June 10, 1978


Features

Contents

Fields of interest
Probability Theory and Stochastic Processes; Partial Differential Equations

Target groups
Research

Type of publication
Contributed volume

Available
2011. 249 p. (C.I.M.E. Summer Schools, Vol. 77) Softcover
34,95 € ISBN 978-3-642-11077-1

Stochastic Linear Programming
Models, Theory, and Computation

This new edition of Stochastic Linear Programming: Models, Theory and Computation has been brought completely up to date, either dealing with or at least referring to new material on models and methods, including DEA with stochastic outputs modeled via constraints on special risk functions (generalizing chance constraints, ICC's and CVaR constraints), material on Sharpe-ratio, and Asset Liability Management models involving CVaR in a multi-stage setup. To facilitate use as a text, exercises are included throughout the book, and web access is provided to a student version of the authors' SLP-ICO software. Additionally, the authors have updated the Guide to Available Software, and they have included newer algorithms and modeling systems for SLP. The book is thus suitable as a text for advanced courses in stochastic optimization, and as a reference to the field. From Reviews of the First Edition: "The book presents a comprehensive study of stochastic linear optimization problems and their[...]

Features
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Contents

Fields of interest
Optimization; Operations Research, Mathematical Programming; Appl. Mathematics / Computational Methods of Engineering; Probability Theory and Stochastic Processes; Operation Research / Decision Theory; Applications of Mathematics

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
89,95 € ISBN 978-1-4419-7728-1

Stochastic Programming
The State of the Art in Honor of George B. Dantzig

From the Preface… The preparation of this book started in 2004, when George B. Dantzig and I, following a long-standing invitation by Fred Hillier to contribute a volume to his International Series in Operations Research and Management Science, decided finally to go ahead with editing a volume on stochastic programming. The field of stochastic programming (also referred to as optimization under uncertainty or planning under uncertainty) had advanced significantly in the last two decades, both theoretically and in practice. George Dantzig and I felt that it would be valuable to showcase some of these advances and to present what one might call the state-of-the-art of the field to a broader audience. We invited researchers whom we considered to be leading experts in various specialties of the field, including a few representatives of promising developments in the making, to write a chapter for the volume. Unfortunately, to the great loss of all of us, George Dantzig passed away on May 13, 2005.[...]

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Contents

Fields of interest
Probability Theory and Stochastic Processes; Operations Research, Mathematical Programming; Operations Research / Decision Theory

Target groups
Professional/practitioner

Type of publication
Handbook

Available
139,95 € ISBN 978-1-4419-1641-9
The Geometry of Filtering

The geometry which is the topic of this book is that determined by a map of one space $N$ onto another, $M$, mapping a diffusion process, or operator, on $N$ to one on $M$. Filtering theory is the science of obtaining or estimating information about a system from partial and possibly flawed observations of it. The system itself may be random, and the flaws in the observations can be caused by additional noise. In this volume the randomness and noises will be of Gaussian white noise type so that the system can be modelled by a diffusion process; that is it evolves continuously in time in a Markovian way, the future evolution depending only on the present situation. This is the standard situation of systems governed by Ito type stochastic differential equations. The state space will be the smooth manifold $N$, possibly infinite dimensional, and the “observations” will be obtained by a smooth map onto another manifold, $N$, say. We emphasise that the geometry is important even when both manifolds are Euclidean ...

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Contents

Fields of interest
Global Analysis and Analysis on Manifolds; Differential Geometry; Probability Theory and Stochastic Processes

Target groups
Research

Type of publication
Monograph

Available
2010. XI, 169 p. (Frontiers in Mathematics) Softcover
29,95 €
ISBN 978-3-0346-0175-7

The Mathematics of Knots

Theory and Application

The present volume grew out of the Heidelberg Knot Theory Semester, organized by the editors in winter 2008/09 at Heidelberg University. The contributed papers bring the reader up to date on the currently most actively pursued areas of mathematical knot theory and its applications in mathematical physics and cell biology. Both original research and survey articles are presented; numerous illustrations support the text. The book will be of great interest to researchers in topology, geometry, and mathematical physics, graduate students specializing in knot theory, and cell biologists interested in the topology of DNA strands.

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Contents

Fields of interest
Topology; Manifolds and Cell Complexes (incl. Diff. Topology); Differential Geometry; Physiological, Cellular and Medical Topics; Numerical and Computational Physics

Target groups
Research

Type of publication
Contributed volume

Available
2011. X, 364 p. 20 illus. in color. (Contributions in Mathematical and Computational Sciences, Vol. 1) Hardcover
109,95 €
ISBN 978-3-642-15636-6

The Noether Theorems

Invariance and Conservation Laws in the Twentieth Century

In 1915 and 1916 Emmy Noether was asked by Felix Klein and David Hilbert to assist them in understanding issues involved in any attempt to formulate a general theory of relativity, in particular the new ideas of Einstein. She was consulted particularly over the difficult issue of the form a law of conservation of energy could take in the new theory, and she succeeded brilliantly, finding two deep theorems. But between 1916 and 1950, the theorem was poorly understood and Noether’s name disappeared almost entirely. People like Klein and Einstein did little more than mention her name in the various popular or historical accounts they wrote. Worse, earlier attempts which had been eclipsed by Noether’s achievements were remembered, and sometimes figure in quick historical accounts of the time. This book carries a translation of Noether’s original paper into English, and then describes the strange history of its reception and the responses to her work. Ultimately the theorems became decisive in a shift ...

Features
In 1915 Emmy Noether was invited by Klein and Hilbert to Göttingen to assist them in understanding the law of conservation of energy in Einstein’s new general theory of relativity. She succeeded brilliantly. In the “Invarianze Variationsprobleme”, published in 1918, she proved a fundamental theorem linking invariance properties and conservation laws in any theory formulated in terms of a variational principle.

Contents

Fields of interest
History of Mathematics

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 205 p. 8 illus. (Sources and Studies in the History of Mathematics and Physical Sciences) Hardcover
79,95 €
The Ricci Flow in Riemannian Geometry
A Complete Proof of the Differentiable 1/4-Pinching Sphere Theorem

This book focuses on Hamilton’s Ricci flow, beginning with a detailed discussion of the required aspects of differential geometry, progressing through existence and regularity theory, compactness theorems for Riemannian manifolds, and Perelman’s noncollapsing results, and culminating in a detailed analysis of the evolution of curvature, where recent breakthroughs of Böhm and Wilking and Brendle and Schoen have led to a proof of the differentiable 1/4-pinching sphere theorem.

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Contents

Fields of interest
Partial Differential Equations; Differential Geometry; Global Analysis and Analysis on Manifolds

Target groups
Research

Type of publication
Monograph

Available

44,95 €
ISBN 978-3-642-16285-5

Theory of Group Representations and Fourier Analysis
Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Montecatini Terme (Pistoia), Italy, June 25 – July 4, 1970


Features
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Contents

Fields of interest
Topological Groups, Lie Groups

Target groups
Research

Type of publication
Contributed volume

Available

34,95 €
ISBN 978-3-642-11011-5

Topics in Algebraic and Topological K-Theory

This volume is an introductory textbook to K-theory, both algebraic and topological, and to various current research topics within the field, including Kasparov’s bivariant K-theory, the Baum-Connes conjecture, the comparison between algebraic and topological K-theory of topological algebras, the K-theory of schemes, and the theory of dg-categories.

Features
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Contents
K-theory for group $C^*$-algebras - Universal Coefficient Theorems and assembly maps in KK-theory - Algebraic v. topological K-theory: a friendly match - Higher algebraic K-theory (after Quillen, Thomason and others) - Lectures on DG-categories

Fields of interest
K-Theory

Target groups
Graduate

Type of publication
Contributed volume

Available

44,95 €
ISBN 978-3-642-15707-3
**Value Distribution of Meromorphic Functions**

"Value Distribution of Meromorphic Functions" focuses on functions meromorphic in an angle or on the complex plane, T directions, deficient values, singular values, potential theory in value distribution and the proof of the celebrated Nevanlinna conjecture. The book introduces various characteristics of meromorphic functions and their connections, several aspects of new singular directions, new results on singular values and behaviours of subharmonic functions which are the foundation for further discussion on the proof of the Nevanlinna conjecture. The independent significance of normality of subharmonic function family is emphasized. This book is designed for scientists, engineers and post graduated students engaged in Complex Analysis and Meromorphic Functions.

Dr. Jianhua Zheng is a Professor at the Department of Mathematical Sciences, Tsinghua University, China.

**Features**
- "Value Distribution of Meromorphic Functions" focuses on functions meromorphic in an angle or on the complex plane, T directions, deficient values, singular values, potential theory in value distribution and the proof of the celebrated Nevanlinna conjecture.
- The book introduces various characteristics of meromorphic functions and their connections, several aspects of new singular directions, new results on estimates of the number of deficient values, new results on singular values and behaviours of subharmonic functions which are the foundation for further discussion on the proof of the Nevanlinna conjecture. The independent significance of normality of subharmonic function family is emphasized.

**Contents**
- Preliminaries of Real Functions.
- Characteristics of a Meromorphic Function.
- T Directions of a Meromorphic Function.
- Argument Distribution and Deficient Values.
- Meromorphic Functions With Radially Distributed Values.
- Singular Values of Meromorphic Functions.
- The Potential Theory in Value Distribution.

**Fields of interest**
- Analysis; Functions of a Complex Variable; Real Functions
- Target groups:
  - Research
  - Type of publication: Monograph

**Available**

2011. 316 p. Hardcover
89.95 €
ISBN 978-3-642-12908-7

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**Variational Analysis and Generalized Differentiation in Optimization and Control**

Variational analysis is a rapidly growing field within pure and applied mathematics, with numerous applications to optimization, control theory, economics, engineering, and other disciplines. This volume brings together state-of-the-art results in variational analysis and its applications, with an emphasis on optimization and control. The included chapters, written by international experts in the field of variational analysis and related topics, are dedicated to Boris S. Mordukhovich, a renowned mathematician, and aim to celebrate his fundamental contributions to variational analysis, generalized differentiation, and their applications. This volume is intended for mathematicians studying variational analysis as well as other researchers interested in applying the principles of variational analysis to their area of study.

**Features**
- Variational analysis is a rapidly growing field within pure and applied mathematics, with numerous applications to optimization, control theory, economics, engineering, and other disciplines. This volume brings together state-of-the-art results in variational analysis and its applications, with an emphasis on optimization and control.

**Contents**
- 1. Qamrul Hasan Ansari and Jen-Chih Yao, Systems of Vector Quasi-Equilibrium Problems and their Applications.
- 6. Adeela Cap{á}*{a}, G"{a}bor Kassay and [...]

Contents


Fields of interest

Partial Differential Equations

Target groups

Research

Type of publication

Contributed volume

Available


34,95 €

ISBN 978-3-642-11064-1

The first two editions of the Dictionary of Neurological Signs were very well-received by readers and reviewers alike. Like those editions, this Third Edition, updated and expanded, can be almost as well described in terms of what the book is not, along with details about what it is. The Dictionary is not a handbook for treatment of neurological disorders. While many entries provide the latest treatment options, up-to-the-minute therapies are not discussed in bedside level detail. The Dictionary is not a board review book because it is not in Q&A format but could easily serve in that capacity since each entry is a fairly complete snapshot of a specific disorder or disease. The Dictionary is an alphabetically listing of commonly presenting neurological signs designed to guide the physician toward the correct clinical diagnosis. The Dictionary is focused, problem based, concise and practical. The structured entries in this practical, clinical resource provide a thumbnail of a wide range of...

Features

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Fields of interest

Neurology

Target groups

Professional/practitioner

Type of publication

Professional book

Available

2011. XVI, 400 p. Softcover

39,95 €


While a pattern approach to diagnosis is taught and practiced with almost every other tissue or organ in the body, the lymph node remains a mystery to most residents starting out in pathology and those pathologists with limited experience in the area. A Pattern Approach to Lymph Node Diagnosis demonstrates that a systematic approach to lymph node examination can be achieved through recognition of morphological patterns produced by different disease processes. It presents a combination of knowledge-based assessment and pattern recognition for diagnosis covering the major primary neoplastic and non neoplastic diseases and metastatic tumors in lymph nodes. This volume demonstrates that lymph node compartments can be recognized histologically especially with the aid of immunohistological markers and how this knowledge can be employed effectively to localize and identify pathological changes in the different compartments in order to facilitate histological diagnosis. It also defines histological...

Features

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Contents


Fields of interest

Pathology; Hematology

Target groups

Professional/practitioner

Type of publication

Monograph

Available

2011. XIII, 290 p. 459 illus. in color Hardcover

139,95 €

Addiction Recovery Management
Theory, Research and Practice

Addiction Recovery Management: Theory, Research, and Practice is the first book on the recovery management approach to addiction treatment and post-treatment support services. Distinctive in combining theory, research, and practice within the same text, this groundbreaking title includes authors who are the major theoreticians, researchers, systems administrators, clinicians and recovery advocates who have developed the model. State-of-the-art and definitive text on the topic, Addiction Recovery Management: Theory, Research, and Practice is mandatory reading for clinicians and all professionals who work with patients in recovery or who are interested in the field.

Features
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Anatomic Basis of Echocardiographic Diagnosis

The aim of this book is to provide a systematic approach to echocardiographic diagnosis based upon a comprehensive understanding of cardiac anatomy. We shall provide abundant anatomic correlates of echocardiographic findings throughout the book. The book will be divided into three sections. Each chapter will cover both normal and pathological findings on echocardiography with anatomic correlation. The first section will address the normal findings which can be appreciated by current day echocardiography. The impact of aging on cardiac structure and function will also be covered in this section. In the second section, specific cardiac diseases will be discussed. The differentiating features between normal and pathologic conditions will be discussed. The last section will address specific clinical settings where echocardiography is pivotal for diagnosis and patient management.

Features
Echocardiography is a versatile imaging modality that can be performed at the bedside to promptly provide reliable anatomic and functional information useful for the management of patients with heart disease. There have been many technological advances in echocardiography, resulting in an improvement in image quality and new insights into cardiac mechanics. In order to fully appreciate and utilize these...

Contents
Normal findings and age related changes - Normal cardiac anatomy - orientation and imaging approach. Impact of age upon cardiac structure. Cardiac Diseases - Aortic valve, Mitral valve, Tricuspid and pulmonic valve, Cardiomyopathies, Coronary artery disease, Right ventricular diseases, Diseases of the aorta, Pericardial diseases Special Clinical Settings - Prosthetic heart valves, Endocarditis and valvular thrombi, Cardiac tumors, Congenital heart disease, Suspected cardiac source of embolism, Diastolic heart failure, Cardiac involvement of systemic diseases, Interventional procedures...

Fields of interest
Cardiology; Ultrasound; Internal Medicine

Target groups
Professional/practitioner

Type of publication
Manual

Available
2011, XIV, 491 p. 662 illus., 330 in color. Hardcover
179,95 €

Auditory and Vestibular Efferents

Efferent sensory systems have emerged as major components of processing by the central nervous system. Whereas the afferent sensory systems bring environmental information into the brain, efferent systems function to monitor, sharpen, and attend selectively to certain stimuli while ignoring others. This ability of the brain to implement these functions enables the organism to make fine discriminations and to respond appropriately to environmental conditions so that survival is enhanced. Our focus will be on auditory and vestibular efferents, topics linked together by the inner ear connection. The biological utility of the efferent system is striking. How it functions is less well understood, and with each new discovery, more questions arise. The book that is proposed here reflects our vision to share what is known on the topic by authors who actually have made the observations.

Features
The biology of auditory and vestibular efferent systems encompasses a wide range of issues where exploration requires knowledge of basic anatomy, electrophysiology, and pharmacology of the inner ear. These topics lead into discussions of development and evolution of efferent systems. The functional significance of these systems is highlighted by an overview of central...

Contents

Fields of interest
Otorhinolaryngology; Neurosciences; Acoustics

Target groups
Research

Type of publication
Contributed volume

Available
109,95 €

Basic Sciences of Nuclear Medicine

Nuclear medicine has become an ever-changing and expanding diagnostic and therapeutic medical profession. The day-to-day innovations seen in the field are, in great part, due to the integration of many scientific bases with complex technological advances. The aim of this reference book, Basic Sciences of Nuclear Medicine, is to provide the reader with a comprehensive and detailed discussion of the scientific bases of nuclear medicine, covering the different topics and concepts that underlie many of the investigations and procedures performed in the field. Topics include radiation and nuclear physics, Tc-99m chemistry, single photon radiopharmaceuticals and PET chemistry, radiobiology and radiation dosimetry, image processing, image reconstruction, quantitative SPECT imaging, quantitative cardiac SPECT, small animal imaging (including multimodality hybrid imaging, e.g., PET/CT, SPECT/CT, and PET/MRI), compartmental modeling, and tracer kinetics.

Features
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Contents

Fields of interest
Nuclear Medicine

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, X, 423 p. 255 illus., 150 in color. Hardcover
159,95 €
ISBN 978-3-540-85961-1
Blaustein’s Pathology of the Female Genital Tract

Since the publication of the 1/e in 1977, Blaustein’s Pathology of the Female Genital Tract has consolidated its position as the leading textbook of gynecological pathology. An essential reference for all pathologists and residents, this thoroughly updated Sixth Edition includes more than 1500 illustrations in color, informative tables and 28 revised chapters written by internationally recognized experts. Discussion of each specific entity is organized to include general information, etiology, and epidemiology followed by clinical features, pathologic findings, differential diagnosis, clinical behavior, and treatment. This clear organization is applied throughout the book and allows the reader to quickly access key information in every chapter. Blaustein’s Pathology of the Female Genital Tract remains the gold-standard reference for practicing pathologists and trainees, as well as for obstetric/gynecology practitioners and residents.

Features
Since the publication of the 1/e in 1977, Blaustein’s Pathology of the Female Genital Tract has consolidated its position as the leading textbook of gynecological pathology. An essential reference for all pathologists and residents, this thoroughly updated Sixth Edition includes more than 1500 illustrations in color, informative tables and 28 revised chapters written by internationally recognized experts.

Contents
01 - Benign Diseases of the Vulva; 02 - Premalignant and Malignant Tumors of the Vulva; 03 - Diseases of the Vagina; 04 - Benign Diseases of the Cervix; 05 - Precancerous Lesions of the Cervix; 06 - Carcinoma and Other Tumors of the Cervix; 07 - Benign Diseases of the Endometrium; 08 - Precursor Lesions of Endometrial Carcinoma; 09 - Endometrial Carcinoma; 10 - Mesenchymal Tumors of the Uterus; 11 - Diseases of the Fallopian Tube and Paratubal Region; 12 - Nonneoplastic Lesions of the Ovary; 13 - Diseases of the Peritoneum; 14 - Surface Epithelial Tumors of the Ovary; 15 - Sex[...]

Fields of interest
Pathology; Gynecology

Blaustein’s Pathology of the Female Genital Tract

Blood and Marrow Transplant Handbook

Comprehensive Guide for Patient Care

Developed by the Blood and Marrow Transplant team at Oregon Health & Science University Knight Cancer Institute, this pocket guide provides management guidelines for hematopoietic stem cell transplant patients from the moment of their initial consultation throughout the transplant process. It includes indications for transplant, essential details for patient/donor evaluation, recommendations for management of complications during and after transplant, and guidelines for long-term follow up as well as step-by-step instructions for common procedures and documentation guidelines. An essential tool for providers, this guide presents a multidisciplinary approach to information you will need to provide quality care for your patients.

Features
Developed by the Blood and Marrow Transplant team at Oregon Health & Science University Knight Cancer Institute, this pocket guide provides medical management guidelines for hematopoietic stem cell transplant patients from the moment of their initial consultation throughout the transplant process. It includes indications for transplant, essential details for patient/donor evaluation; recommendations [...] Contents

Fields of interest
Oncology; Cancer Research; Pharmacology / Toxicology; Apoptosis

Target groups
Research

Type of publication
Professional book

Available
2011. XII, 324 p. 7 illus., 3 in color. Softcover
39,95 €
ISBN 978-1-4419-7505-8

Bortezomib in the Treatment of Multiple Myeloma

Multiple Myeloma (MM) is the second most common type of blood cancer, resulting from an overproduction of cancerous infection-fighting white blood cells, known as plasma cells. Plasma cells are a crucial part of the immune system responsible for the production of antibodies. Bortezomib is a promising anticancer drug targeting the proteasome. This proteasome inhibitor induces cell stress and apoptosis in the cancer cells. While multiple mechanisms are likely to be involved, proteasome inhibition may prevent the degradation of pro-apoptotic factors, permitting activation of programmed cell death in neoplastic cells dependent upon the suppression of proapoptotic pathways. This monograph on bortezomib is a valuable source of information for researchers and clinicians from the fields of oncology and pharmacology, working either in academia or the pharmaceutical industry.

Features
Multiple Myeloma (MM) is the second most common type of blood cancer, resulting from an overproduction of cancerous infection-fighting white blood cells, known as plasma cells. Plasma cells are a crucial part of the immune system responsible for the production of antibodies. Bortezomib is a promising anticancer drug targeting the proteasome. This proteasome inhibitor induces cell stress and apoptosis in the [...] Contents
Fields of interest
Oncology; Cancer Research; Pharmacology / Toxicology; Apoptosis

Target groups
Research

Type of publication
Contributed volume

Available
2011. VIII, 179 p. (Milestones in Drug Therapy) Hardcover
139,95 €
ISBN 978-3-7643-8884-9
Computed tomography of the heart has become a highly accurate diagnostic modality that is attracting increasing attention. This extensively illustrated book aims to assist the reader in integrating cardiac CT into daily clinical practice, while also reviewing its current technical status and applications. Clear guidance is provided on the performance and interpretation of imaging using the latest technology, while also reviewing its current technical status and applications. The specific features of scanners from all four main vendors, including those that have only recently become available, are presented. Among the wide range of applications and issues to be discussed are coronary artery bypass grafts, stents, plaques, and anomalies, cardiac valves, congenital and acquired heart disease, and radiation exposure. Upcoming clinical uses of cardiac CT, such as plaque imaging and functional assessment, are also explored.

Features

Fields of interest
Imaging / Radiology; Cardiology; Internal Medicine

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XIII, 333 p. 270 illus., 162 in color. Hardcover
129,95 €
ISBN 978-3-642-14021-1

Cardiac Electrophysiology Methods and Models
Cardiovascular disease is the major cause of mortality and morbidity in the Western Hemisphere. While significant progress has been made in treating a major sub-category of cardiac disease, arrhythmias, significant unmet needs remain. In particular, every day, thousands of patients die because of arrhythmias in the US alone, and atrial fibrillation is the most common arrhythmia affecting millions of patients in the US alone at a given time. Therefore, there is a public need to continue to develop new and better therapies for arrhythmias. Accordingly, an ever increasing number of biomedical, pharmaceutical, and medical personnel is interested in studying various aspects of arrhythmias at a basic, translational, and applied level, both in industry (ie Biotech, Pharmaceutical and device), and in academia. Not only has our overall understanding of molecular bases of disease dramatically increased, but so has the number of available and emerging molecular, pharmacological or device treatment based therapies. Cardiac Electrophysiology Methods and Models will review key [-] Features Biomedical, pharmaceutical and medical personnel are interested in studying aspects of arrhythmias at a basic, translational and applied level. The overall understanding of the molecular basis of disease has dramatically increased, as well as the number of available and emerging molecular, pharmacological and device treatment based therapies. Cardiac Electrophysiology Methods and Models will review key [-] Contents Clinical Cardiac Electrophysiology: An Overview of its Evolution. Basic Cardiac Electrophysiology. Excitable Membranes. Cardiac Action Potentials and Gap Junctions. Anatomy and Physiology of the Cardiac Conduction System. The Electrocardiogram and Clinical Cardiac Electrophysiology. Principles of Electrophysiological In Vitro Measurements. Cardiac Cellular Electrophysiological Modeling. Computer Modeling of Electrical Activation: From Cellular Dynamics to the Whole Heart.- Detection and Measurement of Cardiac Ion Channels.- Cell Culture Models and Methods.- Isolated Tissue [...] Fields of interest Cardiology

Target groups
Professional/practitioner

Type of publication
Handbook

Available
2010. XIV, 475 p. 172 illus., 93 in color. Softcover
69,95 €

Chronic Liver Failure
Mechanisms and Management
Chronic liver failure is a frequent condition in clinical practice that encompasses all manifestations of patients with end-stage liver diseases. Chronic liver failure is a multiorgan syndrome that affects the liver, kidneys, brain, heart, lungs, adrenal glands, and vascular, coagulation, and immune systems. Chronic Liver Failure: Mechanisms and Management covers for the first time all aspects of chronic liver failure in a single book, from pathogenesis to current management. Each chapter is written by a worldwide known expert in their area and all provide the latest state-of-the-art knowledge. This volume is specifically designed to provide answers to clinical questions to all doctors dealing with patients with liver diseases, not only clinical gastroenterologists and hepatologists, but also to internists, nephrologists, intensive care physicians, and transplant surgeons.

Features
Chronic liver failure is a frequent condition in clinical practice that encompasses all manifestations of patients with end-stage liver diseases. Chronic liver failure is a multiorgan syndrome that affects the liver, kidneys, brain, heart, lungs, adrenal glands, and vascular, coagulation, and immune systems. Chronic Liver Failure: Mechanisms and Management covers for the first time all aspects of chronic liver [-] Contents Cells in the liver. Functions in health and disease.- Physiology of liver function.- Assessment of liver function in clinical practice.- Physiology of the splanchnic and hepatic circulations.- Fibrosis as a main mechanism of chronic liver disease.- Stem cells in the liver.- The role of inflammatory mediators in liver failure.- Genomics of the liver in health and disease.- Hepatic encephalopathy and alterations of cerebral function.- Bacterial translocation and alterations of the digestive system.- SBIRS. bacterial infections and alterations of the immune system.- Extracellular fluid volume [...] Fields of interest Gastroenterology; Hepatology; Transplant Surgery

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XVIII, 590 p. 80 illus, 43 in color. (Clinical Gastroenterology) Hardcover
179,95 €
Comparative Interpretation of CT and Standard Radiography of the Chest

Standard radiography of the chest remains one of the most widely used imaging modalities but it can be difficult to interpret. The possibility of producing cross-sectional, reformatted 2D and 3D images with CT makes this technique an ideal tool for reinterpreting standard radiography of the chest. The aim of this book is to provide a comprehensive overview of chest radiography interpretation by means of a side-by-side comparison between chest radiographs and CT images. Introductory chapters address the indications for and difficulties of chest radiography as well as the technical and practical aspects of CT reconstruction and image comparison. Thereafter, the radiographic and CT presentations of both anatomical variants and a wide range of diseases and disorders are illustrated and discussed by renowned experts in thoracic imaging. The book is complemented by online extra material which provides many further educational examples.

Features
Standard radiography of the chest remains one of the most widely used imaging modalities but it can be difficult to interpret. The possibility of producing cross-sectional, reformatted 2D and 3D images with CT makes this technique an ideal tool for reinterpreting standard radiography of the chest. The aim of this book is to provide a comprehensive overview of chest radiography interpretation by means of a [...] contents

Fields of interest
Imaging / Radiology
Target groups
Professional/practitioner
Type of publication
Monograph
Available
2011. XII, 490 p. 359 illus., 107 in color. With online files/update. (Diagnostic Imaging) Hardcover
239,00 € ISBN 978-3-540-79941-2

Comprehensive Electrocardiography

New edition of the classic complete reference book for cardiologists and trainee cardiologists on the theory and practice of electrocardiography, one of the key modalities used for evaluating cardiology patients and deciding on appropriate management strategies.

Features
New edition of the classic complete reference book for cardiologists and trainee cardiologists on the theory and practice of electrocardiography, one of the key modalities used for evaluating cardiology patients and deciding on appropriate management strategies.

Contents

Fields of interest
Cardiology; Human Physiology
Target groups
Research
Type of publication
Handbook
Available
2011. XVIII, 2548 p. 1100 illus. In 4 volumes, not available separately.
699,00 € ISBN 978-1-84882-045-6

Converging Disciplines
A Transdisciplinary Research Approach to Urban Health Problems

As urban populations grow, new health problems evolve in tandem with longstanding issues. And as a welter of social, environmental, and access factors further complicate the picture, workable solutions require increasingly sophisticated understanding and innovative methods—generally beyond the scope of one professional field. Converging Disciplines introduces the concept of transdisciplinary research as a multidimensional, research-to-practice approach to urban health issues, not only bringing researchers together but also linking stakeholders, from practitioners to policymakers to community members. This immediately accessible volume differentiates transdisciplinary research from multi- and interdisciplinary strategies, as well as from popular community-based models, and brings a uniquely North American set of perspectives to the concept. Chapter authors explore the theory behind the methods as well as their application in meeting chronic problems (e.g., domestic violence, substance abuse) and[...]

Features
Converging Disciplines A Transdisciplinary Research Approach to Urban Health Problems Marit Kirst, Nicole Schafer-McDaniel, Stephen Hwang, and Patricia O’Campo Centre for Research on Inner City Health, Toronto, Canada As urban populations grow, new health problems evolve in tandem with longstanding issues. And as a welter of social, environmental, and access factors further complicate the picture, workable[...] contents
Section I: An Introduction to Transdisciplinary Research.- Introducing Transdisciplinary Research.- The Contributions of Transdisciplinary Research for Urban Health Researchers.- Section II: Examples of Transdisciplinary Research.- Case Example 1.- Case Example 2.- Case Example 3.- Section III: The Process of Transdisciplinary Research.- Methodological Notes on Conducting Transdisciplinary Research.- Process and Collaboration in Transdisciplinary Research.- The Role of Knowledge Translation.- Section IV: Moving Forward.- Training Researchers in Transdisciplinary Research.- Funding[...] fields of interest
Medicine (general)
Target groups
Research
Type of publication
Contributed volume
Available
2011. XXII, 172 p. 1 illus. Hardcover
89,95 € ISBN 978-1-4419-6329-1
Dating Neurological Injury: A Forensic Guide for Radiologists, Other Expert Medical Witnesses, and Attorneys

Dating Neurological Injury: A Forensic Guide for Radiologists, Other Expert Medical Witnesses, and Attorneys presents a unique way to approach the dating of neurological injury as imaged by modern computed tomography (CT), magnetic resonance (MR) and ultrasound (US). Chapters are presented in a logical progression beginning with the general appearance of normal brain and progressing to the way abnormalities manifest themselves. The emphasis in these discussions is on the appearance of edema and of hemorrhage, as these two findings are the brain’s most common response to injury. This volume presents in a systematic fashion the principles involved in the interpretation of images of the central nervous system specifically in a medical-legal setting where concern exists about the occurrence and timing of an injury. Dating Neurological Injury: A Forensic Guide for Radiologists, Other Expert Medical Witnesses, and Attorneys is a welcome addition to institutional, medical, and legal libraries.

Features
Dating Neurological Injury: A Forensic Guide for Radiologists, Other Expert Medical Witnesses, and Attorneys presents in a systematic fashion the principles involved in the interpretation of images of the central nervous system specifically in a medical-legal setting where concern exists about the occurrence and timing of an injury. Dating Neurological Injury: A Forensic Guide for Radiologists, Other Expert Medical Witnesses, and Attorneys is a welcome addition to institutional, medical, and legal libraries.

Contents
Structure of the Normal Brain and its Appearance on Imaging. General Appearance of Edema and Hemorrhage on computed tomography, magnetic resonance and ultrasound. The Basics of Contrast and its Role in Dating. How the Imaging Appearance of Edema and Hemorrhage Change over Time on computed tomography, magnetic resonance and ultrasound. Dynamic (Acute) Dating. Patterns of Parenchymal Ischemic injury—Pattern (Chronic) Dating. Principles of Dynamic Dating in the Medical Legal Setting. Therefore, What can be said – What...

Fields of interest
Diagnostic Radiology; Radiotherapy; Neurology; Neurosurgery; Pathology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011, X, 126 p. 252 illus., 2 in color. Hardcover
139,95 €
ISBN 978-1-60761-249-0

Deep Pelvic Endometriosis
A Multidisciplinary Approach

Deep pelvic endometriosis is one of the most severe expressions of a disease that may involve all the pelvic organs – bladder, ureters, rectosigmoid colon – causing debilitating symptoms and leading to impaired quality of life in young women. The chapters cover both diagnostic and therapeutic aspects of this disease. The central role of diagnostic imaging in surgical decision making is highlighted, as well as the difficulties involved in careful planning of surgical treatment, and special attention is paid to minimally invasive techniques. The paramount importance of a multidisciplinary team, involving the expertise of radiologists, gastroenterologists, and psychologists, as well as the skills of the gynecologist, urologist, and colorectal surgeon is underscored throughout the text.

Features
Deep pelvic endometriosis is one of the most severe expressions of a disease that may involve all the pelvic organs – bladder, ureters, rectosigmoid colon – causing debilitating symptoms and leading to impaired quality of life in young women. The chapters cover both diagnostic and therapeutic aspects of this disease. The central role of diagnostic imaging in surgical decision ...

Contents
1 Introduction 1.1 Definition, Prevalence, and Epidemiology. 1.2 Pathogenesis. 1.3 Deep Endometriosis. 1.4 Classification 2 Diagnosis 2.1 Clinical Features. 2.2 Symptoms. 2.3 Physical Findings. 2.4 Serum Markers. 2.5 Laparoscopy. 2.6 Instrumental Diagnosis. 2.7 Conclusion 3 Treatment3.1 Medical Therapy. 3.2 Surgery 4 The Experience of Living with Endometriosis 4.1 Introduction. 4.2 Diagnosis of Endometriosis. 4.3 Sexuality. 4.3.1 Dyspareunia. 4.3.2 Fertility. 4.5 Impact on Social Life and Relationships. 4.6 Interactions with Health Professionals. 4.7 Treatments. 4.8 Summary

Fields of interest
Gynecology; Colorectal Surgery; Urology / Andrology; Diagnostic Radiology; Ultrasound

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, X, 94 p. 50 illus., 20 in color. Hardcover
99,95 €

Dual Energy CT in Clinical Practice

Dual-energy CT is a novel, rapidly emerging imaging technique which offers important new functional and specific information. In this book, physicists and specialists from different CT manufacturers provide an insight into the technological basis of, and the different approaches to, dual-energy CT. Renowned medical scientists in the field explain the pathophysiological and molecular background of the technique, discuss its applications, provide detailed advice on how to obtain optimal results, and offer hints regarding clinical interpretation. The main focus is on the use of dual-energy CT in daily clinical practice, and individual sections are devoted to imaging of the vascular system, the thorax, the abdomen, and the extremities. Evaluations and recommendations are based on personal experience and peer-reviewed literature. Plenty of carefully chosen high-quality images are included to illustrate the clinical benefits of Dual Energy CT.

Features
Dual-energy CT is a novel, rapidly emerging imaging technique which offers important new functional and specific information. With implementation of the technology in commercially available scanners, many clinical applications are now feasible. In this book, physicists and specialists from different CT manufacturers provide an insight into the technological basis of, and the different...

Contents

Fields of interest
Imaging / Radiology; Diagnostic Radiology; Internal Medicine; Cardiology; Angiology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011, X, 216 p. 109 illus., 30 in color. (Diagnostic Imaging) Hardcover
179,95 €
ISBN 978-3-642-01739-1
### ESC Guidelines Desk Reference 2010

**Compendium of Abridged ESC Guidelines 2010**

The European Society of Cardiology (ESC) issues guidelines instructing doctors on which drugs can be used on which indications. This book includes all the currently available guidelines in full. It is the standard reference work for all practicing physicians in all European countries.

**Features**

- The European Society of Cardiology (ESC) issues guidelines instructing doctors on which drugs can be used on which indications. This book includes all the currently available guidelines in full. It is the standard reference work for all practicing physicians in all European countries.

**Fields of interest**

- Cardiology; Angiology; Cardiac Surgery; Vascular Surgery; Primary Care Medicine; Pharmacology / Toxicology

**Target groups**

- Professional/practitioner

**Type of publication**

- Reference work

**Available**


59.95 €

ISBN 978-1-907673-00-9

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### Ecosystems and Human Health

A Critical Approach to EcoHealth Research and Practice

**Features**

- Ecosystems and Human Health A Critical Approach to EcoHealth Research and Practice Crescenta Dakubo The magnitude of current epidemics, environmental disasters, and extreme weather events is proving that human health problems require more comprehensive solutions than conventional biomedical approaches can offer. At the intersection of the public and community health, global health, and environmental [...] 

**Contents**

- Human Health and Ecosystem Health: Exploring the Linkages.
- Tracing the Evolution of the EcoHealth Approach.
- Theoretical Frameworks of EcoHealth.
- Methodological Issues.
- Applying the EcoHealth Approach: Case Studies.
- Using the EcoHealth Approach to Influence Public Health Policies.
- Challenges, Opportunities and Future Directions.

**Fields of interest**

- Public Health; Environmental Health; Ecology

**Target groups**

- Research

**Type of publication**

- Monograph

**Available**

2010. XIV, 233 p. Hardcover

89.95 €

ISBN 978-1-4419-0205-4

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### Encyclopedia of Heart Diseases

The fully revised second edition of the Encyclopedia of Heart Diseases is an ideal resource for practicing clinicians and researchers. Available in print, online, and with dual access, it is a clear and comprehensive aggregation of the most crucial information and essential data on cardiovascular diseases and therapeutics. Comprised of over 95 entries with regular online updates, the Encyclopedia of Heart Diseases is fully referenced, and major points of interest are hyperlinked to complementary sections. Each entry is logically and superbly written, providing accurate core knowledge of pathogenesis, pathophysiology, clinical features, diagnostic techniques, and management strategies. Specific detail is paid to technological advances in imaging and diagnostics. Therapy focused entries give powerful insights into not only prescribing drug regimens, but also into the controversies surrounding their use. This major reference work is invaluable for all those involved in the care of cardiovascular [...] 

**Contents**

- Over 95 entries, including entries such as: ACE Inhibitors, Beta Blockers Hypertension Controversy, Blood Pressure, Clinical Trials, Diabetes Caused by Diuretics and Beta Blockers, Erectile Dysfunction and the Heart, Marfan Syndrome, Murmurs and Heart Disease, Pulmonary Hypertension, Women and Heart Disease, and over 255 figures, including echocardiographic animations

**Fields of interest**

- Cardiology; Cardiac Surgery; Angiology; Internal Medicine

**Target groups**

- Research

**Type of publication**

- Encyclop(a)edia

**Available**

2010. XXII, 900 p. 255 illus. In 2 volumes, not available separately. Hardcover

499.00 €


Fractures in the Elderly: A Guide to Practical Management provides geriatricians and other medical specialists who provide care for older adults with the vital guidance and most current data and opinions regarding the treatment of elderly patients who sustain a variety of fractures. It also provides orthopedic surgeons with the necessary information and most current data and opinions regarding assessment and management of geriatric conditions that predispose the elderly to fracture, perioperative complications and subsequent functional decline. Each chapter is both readable and appealing not only to geriatricians and orthopedic surgeons but to all clinicians that have contact with elderly patients who have sustained or are at high risk of sustaining a fracture. Emphasis is placed on the fact that although in some cases pre- and post-operative care in elderly fracture patient may proceed as it does in younger individuals, often there are considerations owing to functional status, pre-existing [...] Features

Fractures in the Elderly: A Guide to Practical Management provides geriatricians and other medical specialists who provide care for older adults with the vital guidance and most current data and opinions regarding the treatment of elderly patients who sustain a variety of fractures. It also provides orthopedic surgeons with the necessary information and most current data and opinions regarding assessment and management of geriatric conditions that predispose the elderly to fracture, perioperative complications and subsequent functional decline. Each chapter is both readable and appealing not only to geriatricians and orthopedic surgeons but to all clinicians that have contact with elderly patients who have sustained or are at high risk of sustaining a fracture. Emphasis is placed on the fact that although in some cases pre- and post-operative care in elderly fracture patient may proceed as it does in younger individuals, often there are considerations owing to functional status, pre-existing [...] Features

Contents


Target groups Professional/practitioner

Type of publication Contributed volume

Available

2011. XVI, 335 p. 55 illus., 3 in color. (Aging Medicine) Hardcover

159.95 €

ISBN 978-1-60327-466-1

Functional Electromyography

Provocative Maneuvers in Electrodagnosis

Functional Electromyography: Provocative Maneuvers in Electrodagnosis integrates electrophysiology further into the physical examination than ever before. It introduces the use of electrodagnostic studies to quantify the neurological changes brought about by three provocative maneuvers commonly used in contemporary medicine. This widens the scope of electromyography while sharpening physicians’ diagnostic acuity. The book presents nerve conduction velocity (NCV) and H-reflex techniques to identify common conditions that are difficult to diagnose by any other means, often using the needle exam (EMG), MRI or musculoskeletal ultrasound to verify their clinical utility. Functional electromyography successfully diagnoses some cases of thoracic outlet syndrome, nearly all cases of pisiform syn- drome, and offers a method for determining whether spinal stenosis or radiculopathy is the main pain generator when both are present in a single patient, even at the same level. This is particularly valuable [...] Features

Functional Electromyography: Provocative Maneuvers in Electrodagnosis integrates electrophysiology further into the physical examination than ever before. It introduces the use of electrodagnostic studies to quantify the neurological changes brought about by three provocative maneuvers commonly used in contemporary medicine. This widens the scope of electromyography while sharpening physicians’ diagnostic [...] Features

Contents

Chapter 1: Electricity in Medicine - Philosophy meets Physiology.- Chapter 2: Electrodagnosis and the Physical Examination - Casting a fine net widely.- Chapter 3: Functional Electrodagnosis: Provocative Maneuvers define Diagnoses of Exclusion, and refine Dual Diagnoses.- Chapter 4: Neurological Thoracic Outlet Syndrome - Approaching a pathognomonic electrophysiologic sign.- Chapter 5: Treating Neurological Thoracic Outlet Syndrome Identified Functional Electrodagnostically - Analysis of the Data.- Chapter 6: Pisiform Syndrome - Electrophysiology corrects Anatomical Assumption.- [...] Fields of interest Neurology; Orthopedics; Neurosurgery; Pain Medicine; Anesthesiology; Internal Medicine

Target groups Professional/practitioner

Type of publication Monograph

Available

2011. XVI, 232 p. 48 illus. Hardcover

139.95 €


Fundamentals of Nuclear Pharmacy

Established as a classic text on nuclear chemistry and pharmacy, Fundamentals of Nuclear Pharmacy has been thoroughly revised with new information added covering innovations in imaging technology and clinical applications in the field. The Sixth Edition also eliminates outdated information from previous editions on radiopharmaceuticals now discontinued from the market. Dr. Gopal B. Saha's books have continually been praised for their clarity and accuracy while setting new standards for making complex theoretical concepts readily understandable to the reader. Like past editions, this book is intended to be used as a textbook on nuclear chemistry and pharmacy for nuclear medicine residents and students and as a reference book for nuclear medicine physicians and radiologists. New sections in the Sixth Edition include: • PET/CT and SPECT/CT • Digital Imaging • Exploratory IND • Nanoparticle Imaging • Treatment of liver cancer with 90Y-TheraSpheres and 90Y SR-Spheres • Treatment of Non-Hodgkin's [...] Features

Established as a classic text on nuclear chemistry and pharmacy, Fundamentals of Nuclear Pharmacy has been thoroughly revised with new information added covering innovations in imaging technology and clinical applications in the field. The Sixth Edition also eliminates outdated information from previous editions on radiopharmaceuticals now discontinued from the market. Dr. Gopal B. Saha's books have [...] Features

Contents


Fields of interest Nuclear Medicine; Pharmacy; Imaging / Radiology; Radiotherapy

Target groups Professional/practitioner

Type of publication Monograph

Available

2010. XVII, 410 p. 103 illus., 17 in color. Hardcover

69.95 €

ISBN 978-1-4419-5859-4
Guide to Pediatric Urology and Surgery in Clinical Practice

Guide to Pediatric Urology and Surgery in Clinical Practice addresses the surgical and urological problems in children that may be encountered in the primary care clinic. Divided into two sections on urology and surgery, the chapters give a synopsis of a particular condition, its management in primary care, indications for referral and timing of referral. Complications of a particular procedure and its management if presenting to primary care is also discussed. The book is illustrated throughout and key points are provided at the beginning of each chapter for quick and easy reference. A concise assemblage of all those pediatric surgical and urological conditions commonly encountered in primary care, this book provides a quick reference guide for use in clinical practice.

Features
Guide to Pediatric Urology and Surgery in Clinical Practice addresses the surgical and urological problems in children that may be encountered in the primary care clinic. Divided into two sections on urology and surgery, the chapters give a synopsis of a particular condition, its management in primary care, indications for referral and timing of referral. Complications of a particular procedure and its [...] Contents
Pediatric Surgery; Urology / Andrology; Surgery

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XX, 282 p. 92 illus., 72 in color. Softcover
39.95 €

Health Care Financing and Insurance
Options for Design

As a contribution to the search for suitable and sustainable solutions to finance rising medical care expenditures, the book proposes a typology of healthcare financing and insurance schemes, based on the dimensions of basic vs. supplementary services and mandatory vs. voluntary coverage, to analyse the design and the complex interactions between various financing and insurance arrangements in several OECD countries. This study provides a better understanding of the strengths and weaknesses of the financial and organisational structures of different countries’ healthcare financing and insurance schemes. Its main contributions are the development of a novel and rigorous theoretical framework analysing the economic rationales for the optimal design of healthcare financing and insurance schemes, and an empirical and institutional analysis investigating the consequences for efficiency and affordability of the complex interactions between basic and supplementary sources of financing.

Features
As a contribution to the search for suitable and sustainable solutions to finance rising medical care expenditures, the book proposes a typology of healthcare financing and insurance schemes, based on the dimensions of basic vs. supplementary services and mandatory vs. voluntary coverage, to analyse the design and the complex interactions between various financing and insurance arrangements in several OECD [...]

Contents

Fields of interest
Public Health; Public Finance & Economics; Population Economics; Finance / Banking; Social Policy

Target groups
Research

Type of publication
Monograph

Available
89.95 €
ISBN 978-3-642-10793-1

Hematopoietic Growth Factors in Oncology

Progress in the treatment of cancer over the past two decades has been rapid with many new and novel therapeutic modalities arriving at an unprecedented pace. Overall cancer mortality rates have actually begun to fall in parallel with progress in the diagnosis and treatment of malignant disease. Despite our advances in the understanding of the biology and molecular genetics of cancer, as well as the availability of an increasing array of effective therapies, cancer treatment today and for the foreseeable future will include the traditional modalities of surgery, radiation therapy and chemotherapy. Myelosuppressive agents with their potential hematopoietic toxicities remain the mainstay of systemic treatment for both metastatic and early stage cancer. The complications of cancer chemotherapy have serious impact on a patient’s well being and overall quality of life. Fortunately, advances in cancer treatment have been accompanied by equally impressive progress in the availability of a wide array of [...] Features
No area of cancer supportive care better illustrates the advances in our understanding of cellular and molecular biology, genetic engineering and the development of more effective yet often more toxic cancer treatments than that of hematopoietic growth factors. Myelosuppressive agents, with their potential hematopoietic toxicities, remain the mainstay of systemic treatment for both metastatic and early stage [...]

Fields of interest
Oncology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XV, 433 p. 56 illus., 16 in color. (Cancer Treatment and Research, Vol. 157) Hardcover
159.95 €
V. Aiyagari, University of Illinois at Chicago, IL, USA; P.B. Gorelik, University of Illinois at Chicago, IL, USA (Eds.)

**Hypertension and Stroke**
Pathophysiology and Management

This timely volume addresses the intimate pathophysiologic relationship between hypertension and cardiovascular disease. Hypertension is one of the most important global public health challenges, and its relationship to stroke and other catastrophic cerebrovascular diseases is an area of growing understanding. In this outstanding book, the editors and authors clearly and concisely synthesize our developing knowledge and place epidemiologic and physiologic information into a practical clinical context. Comprehensive chapters present the evidence supporting strategies for stroke prevention and care, including blood pressure lowering therapies, anti-coagulation, and management of other cerebrovascular risk factors. In addition to prescriptive measures for first-stroke prevention, the book illuminates current regimens for care immediately after acute stroke and for the prevention of recurrent stroke. A unique section is dedicated to the exploration of the interaction between elevated blood[...]

**Features**
This timely volume addresses the intimate pathophysiologic relationship between hypertension and cardiovascular disease. Hypertension is one of the most important global public health challenges, and its relationship to stroke and other cerebrovascular diseases is an area of growing understanding. In this outstanding book, the editors and authors clearly and concisely synthesize our developing[...]

**Contents**
Section I: Blood Pressure and Hypertension as Antecedents of Stroke
Chapter 4: Mechanisms Underlying Essential Hypertension: Neurogenic and Non-Neurogenic[...]

**Fields of interest**
Neurology; Internal Medicine; Cardiology; General Practice / Family Medicine; Nephrology; Endocrinology

**Target groups**
Professional/practitioner

**Type of publication**
Contributed volume

**Available**
2011. XIV, 279 p. 43 illus., 13 in color. (Clinical Hypertension and Vascular Diseases) Hardcover

139,95 €
ISBN 978-1-60761-009-0

A. Develogus, AHEPA University Hospital, Thessaloniki, Greece (Ed.)

**Imaging of Brain Tumors with Histological Correlations**

This volume provides a deeper understanding of the diagnosis of brain tumors by correlating radiographic imaging features with the underlying pathologic abnormalities. All modern imaging modalities are used to complete a diagnostic overview of brain tumors with emphasis on recent advances in diagnostic neuroradiology. High-quality illustrations depicting common and uncommon imaging characteristics of a wide range of brain tumors are presented and analyzed, drawing attention to the ways in which these characteristics reflect different aspects of pathology. Important theoretical considerations are also discussed. Since the first edition, chapters have been revised and updated and new material has been added, including detailed information on the clinical application of functional MRI and diffusion tensor imaging. Radiologists and other clinicians interested in the current diagnostic approach to brain tumors will find this book to be an invaluable and enlightening clinical tool.

**Features**
This volume provides a deeper understanding of the diagnosis of brain tumors by correlating radiographic imaging features with the underlying pathologic abnormalities. All modern imaging modalities are used to complete a diagnostic overview of brain tumors with emphasis on recent advances in diagnostic neuroradiology. High-quality illustrations depicting common and uncommon imaging characteristics of a wide[...]

**Contents**
Epidemiology, histologic classification and clinical course of brain tumors.- Imaging modalities in brain tumors.- Molecular abnormalities in gliomas.- Clinical applications of fMRI and DTI in patients with brain tumors.- Low-grade gliomas.- High-grade gliomas.- Pineal tumors.- Embryonal tumors.- Tumors of the cranial nerves.- Meningeal tumors.- Central nervous lymphomas and hemopoietic neoplasms.- Masses of the sellar and juxtasellar region.- Embryonal tumors.- Imaging of traumatic injuries according to body region; typical traumaticinjuries of early infancy. The third section includes also legal aspects of child abuse (battered child) and will indicate current international medi-legal guidelines. The didactical approach and the wide-ranging account of the subject makes the book particularly valuable to practitioners from various disciplines, involved in diagnosis and management of trauma of pediatric bone and joint

**Features**
Imaging of Pediatric Bone and Joint Trauma is a multiauthored work dealing comprehensively with the various aspects of imaging of pediatric musculo-osseous trauma. The book is ideally subdivided in three main sections: an overview of traumaticlesions; imaging of traumatic injuries according to body region; typical traumaticinjuries of early infancy. [...]
Infectious Disease Informatics and Biosurveillance

This book on Infectious Disease Informatics (IDI) and biosurveillance is intended to provide an integrated view of the current state of the art, identify technical and policy challenges and opportunities, and promote cross-disciplinary research that takes advantage of novel methodology and what we have learned from innovative applications. This book also fills a systemic gap in the literature by emphasizing informatics driven perspectives (e.g., information system design, data standards, computational aspects of biosurveillance algorithms, and system evaluation). Finally, this book attempts to reach policy makers and practitioners through the clear and effective communication of recent research findings in the context of case studies in IDI and biosurveillance, providing “hands-on” in-depth opportunities to practitioners to increase their understanding of value, applicability, and limitations of technical solutions. This book collects the state of the art research and modern perspectives of [...]..

Features
This book on Infectious Disease Informatics (IDI) and biosurveillance is intended to provide an integrated view of the current state of the art, identify technical and policy challenges and opportunities, and promote cross-disciplinary research that takes advantage of novel methodology and what we have learned from innovative applications. This book also fills a systemic gap in the literature by emphasizing [...]..

Contents

Fields of interest
Health Informatics; Public Health; Business Information Systems; Operation Research / Decision Theory; Epidemiology; Information Systems and Communication Service

Target groups
Research

Type of publication
Handbook

Available

2011. XII, 213 p. 7 illus., 6 in color. (Health Informatics) Hardcover

69,95 €

Information Technology Essentials for Behavioral Health Clinicians

The purpose of this book is to be the premier resource for behavioural health clinicians who are considering adopting technology into their practice. Written by experts and policy makers in the field this book will be recognized as the gold standard. Other books currently in this field are extremely technical and are geared primarily to policy makers, researchers and informaticians. While this book will be a useful adjunct to that audience, it is primarily designed for the over .5 million behavioural health clinicians in the U.S. and the millions others around the world. Adoption of technology is slow in behavioural healthcare, and this book will enhance the adoption and utilization of various technologies in practice. I.T. vendors may also purchase this book for their customers.

Features
"Technology will drive behavioral health innovations in efficiency and quality, this book is great primer for clinicians, students, and decision makers on how to approach technology in behavioral health" David K. Nace M.D. Vice President, Clinical Development, McKesson Health Solutions, Philadelphia, PA, USA]
Information Technology is only beginning to innovate and transform the practice and performance of [...]..

Contents

Fields of interest
Health Informatics; Psychiatry; Psychotherapy

Target groups
Professional/practitioner

Type of publication
Professional book

Available

2011. IX, 213 p. 7 illus., 6 in color. (Health Informatics) Hardcover

69,95 €
Inherited Cancer Syndromes
Current Clinical Management

The second edition of Inherited Cancer Syndromes incorporates new genetic markers data with the clinical utility and practicality of the first edition.

Features
- The advances in our understanding of genetics has exploded since the publication of the first edition of Inherited Cancer Syndromes. We’ve moved from an incomplete understanding of the human genome to the availability of over-the-counter DNA analysis kits. There is simply too much complicated, high-level science for a busy clinician to meaningfully absorb without a filter. Inherited Cancer Syndromes is [...] 

Fields of interest
- General Surgery; Oncology; Surgical Oncology; Human Genetics; Cancer Research

Target groups
- Professional/practitioner

Type of publication
- Professional book

Available
- 2011. VIII, 204 p. 23 illus. Softcover
- 99,95 €

Interventional Radiology Procedures in Biopsy and Drainage

The Techniques in Interventional Radiology series of handbooks describes in detail the various interventional radiology procedures and therapies that are in current practice. The series comprises four titles, which in turn cover procedures in angioplasty and stenting, transcatheter embolization and therapy, biopsy and drainage and ablation. Forthcoming are volumes on pediatric interventional radiology and neurointerventional radiology. Each book is laid out in bullet point format, so that the desired information can be located quickly and easily. Interventional radiologists at all stages, from trainees through to specialists, will find this book a valuable asset for their practice. Interventional Radiology Procedures in Biopsy and Drainage presents the full array of operations using these techniques. The book is split into two sections – one dedicated to biopsy procedures and the other to drainage procedures. Dr. Debra Gervais is Director of Pediatric Imaging and Associate Director of [...] 

Features
- The Techniques in Interventional Radiology series of handbooks describes in detail the various interventional radiology procedures and therapies that are in current practice. The series comprises four titles, which in turn cover procedures in angioplasty and stenting, transcatheter embolization and therapy, biopsy and drainage and ablation. Forthcoming are volumes on pediatric interventional radiology and [...] 

Contents
- General Principles of Biopsy and Drainage
- Liver Biopsy
- Chest Biopsy
- Mediastinal Biopsy
- Bone Biopsy
- Adrenal Biopsy
- Renal Biopsy
- Pancreatic Biopsy
- Lymph Node Biopsy
- Splenic Biopsy
- Thyroid Biopsy
- Prostate Biopsy
- Drainage of Abdominal Fluid Collections
- Drainage of Pelvic Fluid Collections
- Drainage of Intrathoracic Fluid Collections
- Drainage of Liver Abscess and Fluid Collections
- Drainage of Pancreatic Abscess and Fluid Collections
- Percutaneous Biliary Drainage and Stenting
- Percutaneous Choleductostomy and Cholecystolithotomy
- Percutaneous Nephrostomy and [...] 

Fields of interest
- Interventional Radiology; Imaging / Radiology; Diagnostic Radiology

Target groups
- Professional/practitioner

Type of publication
- Professional book

Available
- 2011. XIV, 199 p. 62 illus., 8 in color. (Techniques in Interventional Radiology) Softcover
- 39,95 €

Intraoperative Imaging

Intraoperative imaging technologies have taken an ever-increasing role in the daily practice of neurosurgeons and the increasing attention and interest necessitated international interaction and collaboration. The Intraoperative Imaging Society was formed in 2007. This book brings together highlights from the second meeting of the Intraoperative Imaging Society, which took place in Istanbul-Turkey from June 14 to 17, 2009. Included within the contents of the book is an overview of the emergence and development of the intraoperative imaging technology as well as a glimpse on where the technology is heading. This is followed by in detail coverage of intraoperative MRI technology and sections on intraoperative CT and ultrasonography. There are also sections on multimodality integration, intraoperative robotics and other intraoperative technologies. We believe that this book will provide an up-to-date and comprehensive general overview of the current intraoperative imaging technology as well as [...] 

Features
- Intraoperative imaging technologies have taken an ever-increasing role in the daily practice of neurosurgeons and the increasing attention and interest necessitated international interaction and collaboration. The Intraoperative Imaging Society was formed in 2007. This book brings together highlights from the second meeting of the Intraoperative Imaging Society, which took place in Istanbul-Turkey from [...] 

Fields of interest
- Neurosurgery

Target groups
- Research

Type of publication
- Collected works

Available
- 179,95 €
- ISBN 978-3-211-99650-8
Kidney and Pancreas Transplantation

A Practical Guide

The transplant physicians and surgeons at Cleveland Clinic have collaborated to produce, Kidney and Pancreas Transplantation: A Practical Guide. This volume is devoted to kidney and pancreas transplantation and is well grounded in scientific principles, quantitative clinical reasoning, clinical pharmacology, tested clinical practices and overall clinical applicability. Also addressed are key aspects in the initiation, maintenance and sustained growth of viable clinical programs in kidney and pancreas transplantation. Kidney and Pancreas Transplantation: A Practical Guide will be of great value to transplant physicians as well as medical and surgical fellows who intend to pursue an interest in transplantation.

Contents

Chapter 1: The Immune Response to Transplanted Organs.- Chapter 2: The Histocompatibility Laboratory In Clinical Transplantation.- Chapter 3: Immunosuppressive Therapy In Kidney And Pancreas Transplantation.- Chapter 4: Clinical Pharmacologic Principles and Immunosuppression.- Chapter 5: Pathology of Kidney and Pancreas Transplantation.- Chapter 6: Design, Conduct, and Report of Clinical Trials of Immunosuppressive Regimens in Solid Organ Transplantation.- Chapter 7: Outcomes of Kidney and Pancreas Transplantation.- Chapter 8: Medical And Surgical Evaluation Of The Applicability. Also addressed are key aspects in the [..]

Fields of interest
Urology / Andrology; Transplant Surgery; Abdominal Surgery; Surgery

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XI, 441 p. 99 illus., 54 in color. (Current Clinical Urology)

179,95 €

Long-Term Care Medicine

A Pocket Guide

Long-Term Care Medicine: A Pocket Guide lessons the uncertainty involved in caring for patients in a long-term care facility. This practical pocket guide is divided into four sections: Introduction, Common Clinical Conditions, Psychosocial Aspects, and Special Issues in Long-Term Care. The chapters address all the varied components of the LTC system as well as how to take care of the patients and residents living within it. The contributors to this easy-to-read guide are passionate about LTC and many have worked within the American Medical Directors Association to create and disseminate a knowledge base for practitioners. Long-Term Care Medicine: A Pocket Guide is an invaluable resource for clinicians, practitioners, and educators who are seeking to optimize the care and living experience of residents in LTC by providing resident-centered care as well as resident choice, well-being, dignity, and an improved quality of life.

Features

Long-Term Care Medicine: A Pocket Guide lessons the uncertainty involved in caring for patients in a long-term care facility. This practical pocket guide is divided into four sections: Introduction, Common Clinical Conditions, Psychosocial Aspects, and Special Issues in Long-Term Care. The chapters address all the varied components of the LTC system as well as how to take care of the patients and residents [..]

Contents

Home Care.- Assisted Living and Residential Care.- Nursing Facilities.- The Role of Practitioners and the Medical Director.- Common Clinical Conditions in Long-Term Care.- Acute Change in Condition.- Health Maintenance and Prevention.- Integrating Palliative Care into Practice.- Weight and Nutrition.- Wound Care.- Dementia, Delirium, and Depression.- Ethical and Legal Issues.- Ethical and Legal Issues.- Documentation and Coding.- Medication Management in Long-Term Care.- Rehabilitation and Maximizing Function.

Fields of interest
Geriatrics / Gerontology; Internal Medicine; General Practice / Family Medicine; Primary Care Medicine; Rehabilitation Medicine; Cardiology

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XIII, 209 p. 12 illus., 5 in color. (Current Clinical Practice)

129,95 €
ISBN 978-3-540-30701-3

MRI of Cardiovascular Malformations

MRI is a non-invasive and non-ionizing imaging modality that is perfectly suited for the diagnosis and follow-up of both pediatric and adult congenital heart disease. It provides a large field of view and has the unique ability to depict complex cardiac and vascular anatomy and to measure cardiac function and flow within one examination. MRI is the ideal complement to echocardiography whenever the information provided by the latter is limited. This book has been conceived as a self-teaching manual that will assist qualified radiologists, cardiologists, and pediatricians, as well as those in training. It is richly illustrated with numerous images and drawings that cover all usual and most unusual anomalies. The principal author, Professor Bruno Kastler, is head of radiology at Besançon University Hospital, France and is board certified in both radiology and cardiology.

Features

MRI is a non-invasive and non-ionizing imaging modality that is perfectly suited for the diagnosis and follow-up of both pediatric and adult congenital heart disease. It provides a large field of view and has the unique ability to depict complex cardiac and vascular anatomy and to measure cardiac function and flow within one examination. MRI is the ideal complement to echocardiography whenever the information [..]

Contents


Fields of interest
Imaging / Radiology; Cardiology; Pediatrics

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XVI, 256 p. 201 illus. Hardcover

129,95 €
ISBN 978-3-540-30701-3
Metabolic Basis of Obesity

The obesity epidemic has generated immense interest in recent years due to the wide-ranging and significant adverse health and economic consequences that surround the problem. Much attention has been focused on behaviors that lead to obesity, in particular to overconsumption of energy-dense food and to sedentary lifestyle. However, obesity is an extremely complex condition with poorly defined pathogenesis. Thanks to greatly enhanced research in the area, the discovery of pathways in the brain and peripheral organs that mediate energy homeostasis has provided a framework for understanding the biological basis of obesity. Metabolic Basis of Obesity adds an important new dimension to the growing literature on obesity by offering a comprehensive review of specifically how metabolic imbalance culminates in obesity. Developed by a team of expert authors, this important title discusses the principles of energy balance, genetics of body weight regulation, hormones and adipokines, and metabolic pathways in obesity. Specific focus is given to the discovery of pathways in the brain and peripheral organs that mediate energy homeostasis.

Features
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Contents

Fields of interest
Endocrinology; Gastroenterology; Neurosciences; Human Physiology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011, XIV, 391 p. 47 illus., 28 in color. Hardcover

159.95 €
ISBN 978-1-4419-1606-8

Microbial Zoonoses and Sapronoses

This book presents the state of art in the field of microbial zoonoses and sapronoses. It could be used as a textbook or manual in microbiology and medical zoology for students of human and veterinary medicine, including Ph.D. students, and for biomedicine scientists and medical practitioners and specialists as well. Surprisingly, severe zoonoses and sapronoses still appear that are either entirely new (e.g., SARS), newly recognized (lyme borreliosis), resurging (West Nile fever in Europe), increasing in incidence (campylobacteriosis), spatially expanding (West Nile fever in the Americas), with a changing range of hosts and/or vectors, with changing clinical manifestations or acquiring antibiotic resistance. The collective term for those diseases is (re)emerging infections, and most of them represent zoonoses and sapronoses (the rest are anthroponoses). The number of known zoonotic and sapronotic pathogens of humans is continually growing # over 800 today. In the introductory part, short[..]

Features
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Contents

Fields of interest
Infectious Diseases

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, X, 457 p. Hardcover

149,95 €
ISBN 978-3-642-21547-8

New Solutions for the Heart

An Update in Advanced Perioperative Protection

Although cardiac surgery has made an enormous progress during the last decades, the discipline has to cope with essential changes: Patients are increasingly cared for by cardiologists and therefore referred to the surgeon in a later stage of disease. Consequently, they are more often in an increasingly serious state or in advanced age with significant comorbidities. In order to meet the requirements of these different patient groups, cardiovascular treatments require special protective strategies for the heart in order to perform the planned operations safely. This book presents the latest knowledge of modern techniques of myocardial protection taking into consideration the different patient groups and current scientific strategies. Furthermore, it discusses present and future scientific approaches in myocardial protection and preservation.

Features
Although cardiac surgery has made an enormous progress during the last decades, the discipline has to cope with essential changes: Patients are increasingly cared for by cardiologists and therefore referred to the surgeon in a later stage of disease. Consequently, they are more often in an increasingly serious state or in advanced age with significant comorbidities. In order to meet the requirements[..]

Contents

Fields of interest
Cardiac Surgery; Transplant Surgery; Cardiology; Anesthesiology

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011, XVI, 287 p. 30 illus. in color. Hardcover

149,95 €
ISBN 978-3-211-85547-8
Nutrition for Healthy Skin
Strategies for Clinical and Cosmetic Practice

This extraordinary reference describes the scientific basis, summarizes the existing evidence that functional food for skin really works, and addresses the key questions asked by dermatologists and patients when it comes to practical aspects of nutrition-based strategies in clinical and cosmetic dermatology. It is believed that this helpful guide will become the golden standard, the ‘bible’ for this given topic, which will be used by dermatologists, industry people and interested patients.

Features
During the past few years, significant scientific evidence has accumulated to show that nutrition-based strategies are capable of exerting beneficial effects on the skin. This exceptional reference describes the scientific basis for nutrition-based strategies, summarizes the evidence that functional food for skin really works, and addresses key practical issues regarding the use of nutrition-based [...]

Contents

Fields of interest
Dermatology; Internal Medicine; General Practice; Family Medicine; Pediatrics; Otorhinolaryngology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. X, 208 p. 31 illus., 21 in color. Hardcover

Operative Anatomy of the Heart

Operative Anatomy of the Heart covers unique data and artwork on the morphological description of cardiovascular surgery and surgical procedures. Topics covered include the entire anatomy of the human chest. An appendix presents the cross sections of the human body including the thoracic, abdominal and pelvic cavity. These sections are presented as morphological guidelines for better interpretation of the computer scans.

Features
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Fields of interest
Cardiac Surgery; Vascular Surgery; Thoracic Surgery; Minimally Invasive Surgery; Anatomy

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XVI, 544 p. 1070 illus., 1028 in color. Hardcover

149.95 €
ISBN 978-3-540-69227-0

Pediatric Urology
A General Urologist’s Guide

A vast number of children in the United States are evaluated and treated for urologic conditions by urologists practicing general urology due to the relatively few fellowship-trained pediatric urologists.

Pediatric Urology: A General Urologist’s Guide is written specifically for general urologists as a concise and comprehensive reference of the more common pediatric urologic conditions. Other health practitioners (i.e. pediatrician, family practitioner, residents, medical students, and mid-level providers) will also find this book a key reference. Written by well-respected pediatric urologists, this volume will assist the health care provider to rapidly review the essential aspects of the physical examination, evaluation, diagnostic testing, and management while the patient is still in the office. The chapters are arranged into four sections to allow for easier access to the information: office urology, genitalia, urinary tract, and miscellaneous topics. Furthermore, the first chapter of the book[...]

Contents
Ch. 1 Pediatric urology facts and figures.- Ch. 2 Radiographic imaging.- Ch. 3 Urinary tract infections.- Ch. 4 Voiding dysfunction, urinary incontinence, and urodynamics.- Ch. 5 Hematuria: Gross and microscopic.- Ch. 6 Office procedures.- Ch. 7 Genetic diseases and associated urologic manifestations.- Ch. 8 Penis and Scrotum: Congenital and acquired anomalies.- Ch. 9 Hypo- and hyperplasia.- Ch. 10 Varicoceles, hernias, and hydroceles.- Ch. 11 Testic-les: Undescended, retractile, and ascended.- Ch. 12 Acute scrotum.- Ch. 13 Hydronephrosis: Prenatal and postnatal.- Ch. 14 Vesicoureteral reflux-[...]

Fields of interest
Urology / Andrology: Surgery; Pediatric Surgery; Minimally Invasive Surgery

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XI, 392 p. 114 illus., 51 in color. (Current Clinical Urology) Hardcover

159.95 €
ISBN 978-1-60327-419-7
Physical Activity and Cancer

This book explores in depth the relation between physical activity and cancer control, including primary prevention, coping with treatments, recovery after treatments, long-term survivorship, secondary prevention, and survival. The first part of the book presents the most recent research on the impact of physical activity in preventing a range of cancers. In the second part, the association between physical activity and cancer survivorship is addressed. The effects of physical activity on supportive care endpoints (e.g., quality of life, fatigue, physical functioning) and disease endpoints (e.g., biomarkers, recurrence, survival) are carefully analyzed. In addition, the determinants of physical activity in cancer survivors are discussed, and behavior change strategies for increasing physical activity in cancer survivors are appraised. The final part of the book is devoted to special topics, including the relation of physical activity to pediatric cancer survivorship and to palliative cancer care.

Contents

Public Health Perspectives on Disability

Epidemiology to Ethics and Beyond

Traditionally, the public health viewpoint on disability was geared toward primary prevention of disabling conditions or events. More recently, with the movement for disability rights and the emergence of disability studies, the challenge to the field has been to promote positive health outcomes in this underserved community. Such a change in public health culture must start at the educational level, yet training programs have generally been slow in integrating this perspective—with its potential for enriching the field—into their curricula. Public Health Perspectives on Disability meets this challenge with an educational framework for rethinking disability in public health study and practice, and for attaining the competencies that should accompany this knowledge. This reference balances history and epidemiology, scientific advances, advocacy and policy issues, real-world insights, and progressive recommendations, suiting it especially to disability-focused courses, or to add disability-related [...] Features Public Health Perspectives on Disability Donald J. Lollar, Elena Andresen, editors Traditionally, the public health viewpoint on disability was geared toward primary prevention of disabling conditions or events. More recently, with the movement for disability rights and the emergence of disability studies, the challenge to the field has been to promote positive health outcomes in this underserved [...] Contents Preface. - Introduction: History and Import. - Health Services Administration. - Biostatistics and Epidemiology. - Behavioral Science and Health Education. - Environmental Health Sciences and Occupational Health. - Health Law And Ethics. - Maternal And Child Health and Family Health. - International Health. - The School as a Physical Setting. - Student Essay. - Disasters and Disability. Fields of interest Health Promotion and Disease Prevention Target groups Professional/practitioner Type of publication Contributed volume Available 2011. XXVII, 262 p. Hardcover 89,95 € ISBN 978-1-4419-7340-5

Radiological Imaging of the Kidney

This book provides a unique and comprehensive analysis of the normal anatomy and pathology of the kidney and upper urinary tract from the modern diagnostic imaging point of view. The first part is dedicated to the embryology and normal radiological anatomy of the kidney and anatomic variants. The second part presents in detail all of the imaging modalities which can be employed to assess the kidney and the upper urinary tract, with careful descriptions of patient preparation, investigation protocols, and principal fields of application of each imaging modality. The entire spectrum of kidney pathologies is then presented with the aid of a large set of images, many of which are in color. The latest innovations in interventional radiology, biopsy procedures, and parametric and molecular imaging are also described. This book should be of great interest to all radiologists, oncologists, and urologists who are involved in the management of kidney pathologies in their daily clinical practice.

Features This book provides a unique and comprehensive analysis of the normal anatomy and pathology of the kidney and upper urinary tract from the modern diagnostic imaging point of view. The first part is dedicated to the embryology and normal radiological anatomy of the kidney and anatomic variants. The second part presents in detail all of the imaging modalities which can be employed to assess the kidney and the upper urinary tract, with careful descriptions of patient preparation, investigation protocols, and principal fields of application of each imaging modality. The entire spectrum of kidney pathologies is then presented with the aid of a large set of images, many of which are in color. The latest innovations in interventional radiology, biopsy procedures, and parametric and molecular imaging are also described. This book should be of great interest to all radiologists, oncologists, and urologists who are involved in the management of kidney pathologies in their daily clinical practice.

Radiology of Non-Spinal Pain Procedures
A Guide for the Interventionalist

This handy, well-illustrated manual has been designed to meet the need of interventional pain physicians to understand the radiologic imaging involved in the performance of non-spinal pain procedures. It provides information on such topics as radiologic anatomy, the radiologic manifestations of indications and contraindications to interventional procedures, and the radiologic appearance of complications that may arise from these procedures. In addition, it will be useful for the diagnostic radiologist, who may be unaware of many of the interventional pain procedures. The chosen format will ensure that the reader is quickly able to reference any given procedure. As this is a guidebook, it does not encompass every pathologic entity that may be encountered; however, the commonly performed non-spinal pain procedures are included. This text will prove essential for any interventionalist who does not have easy access to a radiologist and vice versa.

Features
Most interventionalists are not radiologists and most radiologists do not understand interventional pain procedures. Nevertheless, interventionalists order extensive diagnostic imaging in the workup prior to any intervention. Against this background, this handy, well-illustrated manual has been designed to meet the major need of interventional pain physicians to understand the radiologic imaging involved in [..]

Contents

Fields of interest
Pain Medicine; Interventional Radiology; Radiotherapy; Diagnostic Radiology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. X, 223 p. 303 illus., 35 in color. Softcover
79.95 €
ISBN 978-3-642-00480-3

Sports Cardiology Essentials
Evaluation, Management and Case Studies

This book presents an invaluable symptoms-based approach to sports cardiology for sports medicine physicians, primary care physicians, and cardiologists. Edited by an authority in the field, the text offers sought-after insight on caring for the cardiac health of athletes. The first part of the book covers diagnostic tools and treatments. Readers will learn the fundamentals of the preparticipation exam, cardiac screening, and ECG use. Cardiac imaging and electrophysiologic testing are addressed as well. To aid with diagnosis, the second part of the book is organized by symptom and sign. Chapters on common signs such as shortness of breath, chest pain, and syncope provide guidance on which tests to perform and how to formulate a clinical workup. Referral is also noted. The third part of the book ties the text together and outlines specific cardiac diseases and disorders. Sudden cardiac arrest, congenital heart disease, and hypertension are among the topics discussed. Case studies are featured[..]

Features
Sports Cardiology Essentials: Evaluation, Management and Case Studies is a comprehensive resource for any physician responsible for the cardiac health of active or athletic patients. The first section of the book discusses the basics of sudden cardiac arrest in athletes, including screening and echocardiography. The second section is divided into chapters that address particular signs and symptoms, such as [..]

Contents
Sudden cardiac death in athletics: scope of the problem and emergency response.- Cardiovascular screening of athletes: Focused exam, ECGs, and limited echocardiograms.- Echocardiography and advanced cardiac imaging in athletes.- Exercise training and prescription.- Role of genetic testing for sudden death predisposing heart conditions in athletes.- Shortness of breath.- Chest pain in the athlete: Differential diagnosis, evaluation and treatment.- The collapsed athlete.- Syncope/presyncope in the competitive athlete.- Electrophysiologic approach to syncope and near-syncope in the[..]

Fields of interest
Surgery; Orthopedics

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XVI, 128 p. (Collection GECO, Vol. 1) Softcover
66,35 €

Tendon transfer for irreparable cuff tear

Treatment of symptomatic irreparable cuff tear is rare, but represents a difficult challenge for the surgeon. Tendon transfer from periscapular muscles group is a therapeutic option. Many tendon transfers are reported as latissimus dorsi, teres major, split of anterior deltoid and pectoralis major. The goal of this book is to remind the biomechanical and anatomical basis of these tendon transfers and to report tips and tricks and results of these techniques. A treatment algorithm is proposed in patients who have both pain and weakness or have loss of active forward elevation or external rotation. Moreover, tendon transfer can be combined with reverse shoulder prosthesis in patients with an unstable gleno-humeral arthritis.

Features
Treatment of symptomatic irreparable cuff tear is rare, but represents a difficult challenge for the surgeon. Tendon transfer from periscapular muscles group is a therapeutic option. Many tendon transfers are reported as latissimus dorsi, teres major, split of anterior deltoid and pectoralis major. The goal of this book is to remind the biomechanical and anatomical basis of these tendon transfers and to [..]

Fields of interest
Surgery; Orthopedics

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. X, 465 p. 128 illus., 8 in color. Softcover
49,95 €
The Human Brain
Prenatal Development and Structure

This book is unique among the current literature in that it systematically documents the prenatal structural development of the human brain. It is based on lifelong study using essentially a single staining procedure, the classic rapid Golgi procedure, which ensures an unusual and desirable uniformity in the observations. The book is amply illustrated with 81 large, high-quality color photomicrographs never previously reproduced. These photomicrographs, obtained at 6, 7, 11, 15, 18, 20, 25, 30, 35, and 40 weeks of gestation, offer a fascinating insight into the sequential prenatal development of neurons, blood vessels, and glia in the human brain.

Features
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Fields of interest
Neuroradiology

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 145 p. 82 illus., 67 in color. Hardcover

99,95 €
ISBN 978-3-642-14723-4

The MASCC Textbook of Cancer Supportive Care and Survivorship

Addressing physical and psychosocial matters of survivorship prior to, during, and after anticancer treatment is central to a patient’s wellbeing. The MASCC Textbook of Cancer Supportive Care and Survivorship explores not only the diagnosis and treatment but also the increasingly recognized complex and ongoing symptoms experienced by long term cancer survivors. Significant advances have been made, designing strategies to manage the side effects and symptoms of treatment and to prevent them from occurring, maximizing the person’s ability to pursue daily activities. The MASCC Textbook of Cancer Supportive Care and Survivorship assembles international, multidisciplinary experts who focus on a comprehensive range of symptoms and side effects associated with cancer and its treatment. Intended for health professionals involved with cancer care, medical oncologists, radiation oncologists, surgeons, general practitioners, nurses and allied health workers, this textbook provides current information on[...]

Features
Addressing physical and psychosocial matters of survivorship prior to, during, and after anticancer treatment is central to a patient’s wellbeing. The MASCC Textbook of Cancer Supportive Care and Survivorship explores not only the diagnosis and treatment but also the increasingly recognized complex and ongoing symptoms experienced by long term cancer survivors. Significant advances have been made, designing[...]

Contents
Nature of cancer symptoms and presentations of cancers.- General Symptoms.- Pain.- Non-specific symptoms (weakness and fatigue, tumour fever, sweats and flushing).- Palliative care – End of life symptoms (terminal restlessness, confusion, delirium).- Support of elderly cancer patient.- Cardiotoxicity of therapy (anhraclines, 5 fluorouracil, trastuzumab etc.).- Cardiac and Pericardial symptoms (including pericardial effusion).- Superior vena caval and inferior vena caval obstruction.- Pulmonary toxicity of therapy (including pneumonitis and fibrosis).- Respiratory Symptoms of cancer[...]

Fields of interest
Oncology; Primary Care Medicine

Target groups
Professional/practitioner

Type of publication
Handbook

Available
2011. XV, 420 p. 73 illus., 56 in color. Hardcover

129,95 €
ISBN 978-1-4419-1224-4

The Philosophy and Practice of Medicine and Bioethics

A Naturalistic-Humanistic Approach

This book challenges the unchallenged methods in medicine, such as “evidence-based medicine,” which claim to be, but often are not, scientific. It completes medical care by adding the comprehensive humanistic perspectives and philosophy of medicine. No specific or absolute recommendations are given regarding medical treatment, moral approaches, or legal advice. Given rather is discussion about each issue involved and the strongest arguments indicated. Each argument is subject to further critical analysis. This is the same position as with any philosophical, medical or scientific view. The argument that decision-making in medicine is inadequate unless grounded on a philosophy of medicine is not meant to include all of philosophy and every philosopher. On the contrary, it includes only sound, practical and humanistic philosophy and philosophers who are creative and critical thinkers and who have concerned themselves with the topics relevant to medicine. These would be those philosophers who engage[...]

Features
This book explores currently unchallenged methods in medicine, such as “evidence-based medicine,” from the perspectives of humanism and philosophy of medicine. The book discusses issues of medical treatment and moral approaches and indicates the strongest arguments. These arguments are subsequently subjected to critical analysis. The book includes new ways of thinking and explains, uses and exemplifies the[...]

Contents

Fields of interest
Theory of Medicine / Bioethics

Target groups
Research

Type of publication
Monograph

Available

169,95 €
Three-dimensional Echocardiography

Three-dimensional echocardiography is the most recent fundamental advancement in echocardiography. Since real-time 3D echocardiography became commercially available in 2002, it has rapidly been accepted in echo labs worldwide. This book covers all clinically relevant aspects of this fascinating new technology, including a comprehensive explanation of its basic principles, practical aspects of clinical application, and detailed descriptions of specific uses in the broad spectrum of clinically important heart disease. The book was written by a group of well-recognized international experts in the field, who have not only been involved in the scientific and clinical evolution of 3D echocardiography since its inception but are also intensively involved in expert training courses. As a result, the clear focus of this book is on the practical application of 3D echocardiography in daily clinical routine with tips and tricks for both beginners and experts, accompanied by more than 150 case examples...

Features
Three-dimensional echocardiography is the most recent fundamental advancement in echocardiography. Since real-time 3D echocardiography became commercially available in 2002, it has rapidly been accepted in echo labs worldwide. This book covers all clinically relevant aspects of this fascinating new technology, including a comprehensive explanation of its basic principles, practical aspects of clinical application, and detailed descriptions of specific uses in the broad spectrum of clinically important heart disease. The book was written by a group of well-recognized international experts in the field, who have not only been involved in the scientific and clinical evolution of 3D echocardiography since its inception but are also intensively involved in expert training courses. As a result, the clear focus of this book is on the practical application of 3D echocardiography in daily clinical routine with tips and tricks for both beginners and experts, accompanied by more than 150 case examples...

Contents

Fields of interest
Cardiology; Cardiac Surgery; Imaging / Radiology; Internal Medicine

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XVI, 272 p. 248 illus. in color. With DVD. Hardcover

199.95 €
ISBN 978-3-642-11178-5

Type 2 Diabetes, Pre-Diabetes, and the Metabolic Syndrome

Diagnosing and managing type 2 diabetes presents an enormous challenge to the primary care provider confronted with multiple emerging scientific insights, therapeutic strategies and risk reduction principles. In Type 2 Diabetes, Pre-Diabetes, and the Metabolic Syndrome: The Primary Care Guide to Diagnosis and Management, Second Edition, Ronald A. Codario, M.D., FACP -- a well-known and highly respected authority on diabetes -- details the state-of-the-art in diagnosing, managing and attenuating risks in patients with this disease. Utilizing his extensive experience in private practice, medical education and clinical research for over 35 years, Dr. Codario explains in simple clinical terms, the current understanding of the pathophysiology of diabetes, the latest clinical trials, developing controversies, updates on new medications and an expanded section on Special Populations. With his unique, multiple board certifications in clinical hypertension, vascular medicine, internal medicine, vascular...

Features
Diagnosing and managing type 2 diabetes presents an enormous challenge to the primary care provider confronted with multiple emerging scientific insights, therapeutic strategies and risk reduction principles. In Type 2 Diabetes, Pre-Diabetes, and the Metabolic Syndrome: The Primary Care Guide to Diagnosis and Management, Second Edition, Ronald A. Codario, M.D., FACP -- a well-known and highly respected authority on diabetes -- details the state-of-the-art in diagnosing, managing and attenuating risks in patients with this disease. Utilizing his extensive experience in private practice, medical education and clinical research for over 35 years, Dr. Codario explains in simple clinical terms, the current understanding of the pathophysiology of diabetes, the latest clinical trials, developing controversies, updates on new medications and an expanded section on Special Populations. With his unique, multiple board certifications in clinical hypertension, vascular medicine, internal medicine, vascular...

Contents

Fields of interest
Cardiology; Imaging / Radiology; Diagnostic Radiology; Cardiac Surgery; Vascular Surgery; Internal Medicine

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XVI, 368 p. 2 illus. in color. (Current Clinical Practice) Hardcover

69.95 €
ISBN 978-1-60327-440-1

Vascular CT Angiography Manual

Despite the exponential growth in the use of peripheral CTA in the diagnosis and follow-up of vascular disease patients, practical sources from which to gain valuable expertise in this field remain scarce. There is becoming a great need for experts in the field of peripheral CTA, yet learning this imaging modality may be intimidating and time consuming. Very few if any, small, concise and portable books exist to ease training in this field and current books in this field are overwhelming, difficult to manage, text books that often combine CTA and MRI. A so called ‘how to manual’ and reference guide to explain this technique from beginning to end, which compiles valuable, and difficult to obtain clinical pearls and descriptions of disease processes will be of tremendous value. The Peripheral CT Angiography Manual aims to make learning this intimidating technique and the diseases for which it applies simple and fun.

Features
Vascular medicine is an ever changing and rapidly advancing field, and with the onset of state of the art diagnostic and imaging modalities, we are recognizng that vascular illness is more prevalent than once thought. The proper diagnosis and treatment of this vascular illness may prevent stroke, salvage a limb and even save a life. Advancements in CT angiography have made vascular CT angiography the modality...

Contents

Fields of interest
Cardiology; Imaging / Radiology; Diagnostic Radiology; Cardiac Surgery; Vascular Surgery; Internal Medicine

Target groups
Professional/practitioner

Type of publication
Handbook

Available
2011. XVII, 377 p. 90 illus., 15 in color. Softcover

49.95 €

ISBN 978-1-60327-440-1

Work Accommodation and Retention in Mental Health

Growing interest in the field of mental health in the workplace among policy makers, clinicians, and researchers alike has been fueled by equal employment rights legislation and increasing disability statistics in mental health. The importance of addressing this topic is underscored by the fact that depression now ranks second on the hierarchy of occupational disabilities. The problem is compounded by a host of factors, including major difficulties in job retention and productivity experienced by persons with mental health disabilities; younger age and higher education of persons with mental health problems; and labor shortages and an aging workforce in many industrialized countries. In addition, particularly in the United States, the vocational needs of army veterans returning from duty with mental health disorders require system-based solutions and new rehabilitation approaches. The pressure created by these powerful legislative, societal, and economic forces has not been matched by the state of[-]...

Features
Work Accommodation and Retention in Mental Health: Isabel Z. Schultz and E. Sally Rogers, Editors

Contents

Fields of interest
Occupational Medicine / Industrial Medicine; Health Psychology; Labor Economics; Occupational Therapy; Health Administration

Target groups
Research

Type of publication
Contributed volume

Available
2011. XX, 480 p. Hardcover
119.95 €
ISBN 978-1-4419-0427-0

Work and Cancer Survivors

Cancer survivors are returning to the workplace in higher numbers than ever before. This is a positive outcome of the "war on cancer", however, many of these cancer survivors face the possibility of illness- or treatment-related complications; employer discrimination or harassment; and other serious concerns. Cancer Survivorship and Work reviews many of the issues relevant to cancer survivors in the workplace from the survivors', employers', and global perspectives. This interdisciplinary and international volume brings together experts in fields as varied as epidemiology, economics, rehabilitation, psychology, human factors and ergonomics; law, and public policy to create a unique, up-to-date reference of what is currently known and what needs to be considered in the future. With this knowledge, challenges faced by this growing population can be better addressed by health care providers, employers, survivors and their families.

Features
Work and Cancer Survivors: Edited by Michael Feuerstein, Uniformed Services University of the Health Sciences, Bethesda, Maryland Cancer survivors are returning to the workplace in higher numbers than ever before. This is a positive outcome of the "war on cancer", however, many of these cancer survivors face the possibility of illness- or treatment-related complications; employer [-]...

Contents
Section I Introduction - Chapter 1 Work in cancer survivors - Section II Epidemiology - Chapter 2 Descriptive epidemiology of return to work and work limitations: Prevalence and patterns among various cancer types - Chapter 3 Qualitative studies of work in cancer survivors - Chapter 4 Factors impacting work - Chapter 5. Burden of work: Economic analyses - Section III Models - Chapter 6 Models of work and cancer survivors - Section IV Measurement - Chapter 8 Methods used to measure work productivity in chronic illness - Section V Management - Focus on survivor - Chapter 10 Assessment of[-]...

Fields of interest
Rehabilitation; Public Health; Oncology; Labor Economics; Demography

Target groups
Research

Type of publication
Contributed volume

Available
2011. XXII, 350 p. Softcover
59.95 €
ISBN 978-1-4419-8155-4

Astronomy and Civilization in the New Enlightenment

This volume represents the first which interfaces with astronomy as the fulcrum of the sciences. It gives full expression to the human passion for the skies. Advancing human civilization has unfolded and matured this passion into the comprehensive science of astronomy. Advancing science's quest for the first principles of existence meets the ontopoietic generative logos of life, the focal point of the New Enlightenment. It presents numerous perspectives illustrating how the interplay between human beings and the celestial realm has informed philosophical trends. Scholars and philosophers debate in physics and biology, the findings of which are opening a more inclusive, wider picture of the universe. The different models of the universal order and of life here presented, all aiming at the first principles of existence--accord with the phenomenological-ontological perspective of life within the logos-prompted primogenital stream of becoming and action, which points to a future of progressing culture.

Features
Astronomy and Civilization in the New Enlightenment: Edited by Michael Feuerstein, Uniformed Services University of the Health Sciences, Bethesda, MD, USA - A. T. Tymieniecka: World Institute for Advanced Phenomenological Research and Learning, Hanover, MD, USA - A. Grandpierre: Konkoly Observatory of the Hungarian Academy of Sciences (Eds.)

Contents
GEO-COSMIC HORIZONS OF THE LOGOS OF LIFE - Anna-Teresa Tymieniecka - Section I: ASTRONOMY, SCIENCE, PHILOSOPHY FLOURISHING IN THE NEW ENLIGHTENMENT - Astrobiology, theoretical biology, quantum physics, history of science, philosophy of science - Section II: COSMOS SHAPING WORLD VIEWS - History of science, philosophy of science - Section III: ASTRONOMY IN THE ORIGINS OF CULTURE - Archaeoastronomy, history of astronomy, cultural astronomy - Section IV: UNIVERSE AND LIFE - Quantum physics, consciousness research, astrophysics - Complexity theory - Section V: THE WORLD OF LIFE, ASTRONOMY [-]...

Fields of interest
Phenomenology

Target groups
Research

Type of publication
Contributed volume

Available

Philosophy
Belief Revision meets Philosophy of Science

Belief revision theory and philosophy of science both aspire to shed light on the dynamics of knowledge – on how our view of the world changes (typically) in the light of new evidence. Yet these two areas of research have long seemed strangely detached from each other, as witnessed by the small number of cross-references and researchers working in both domains. One may speculate as to what has brought about this surprising, and perhaps unfortunate, state of affairs. One factor may be that while belief revision theory has traditionally been pursued in a bottom-up manner, focusing on the endeavors of single inquirers, philosophers of science, inspired by logical empiricism, have tended to be more interested in science as a multi-agent or agent-independent phenomenon.

Features
Belief revision theory and philosophy of science both aspire to shed light on the dynamics of knowledge – on how our view of the world changes (typically) in the light of new evidence. Yet these two areas of research have long seemed strangely detached from each other, as witnessed by the small number of cross-references and researchers working in both domains. One may speculate as to what has brought about this surprising, and perhaps unfortunate, state of affairs. One factor may be that while belief revision theory has traditionally been pursued in a bottom-up manner, focusing on the endeavors of single inquirers, philosophers of science, inspired by logical empiricism, have tended to be more interested in science as a multi-agent or agent-independent phenomenon.

Contents

Fields of interest
Philosophy of Science; Logic

Target groups
Research

Type of publication
Contributed volume

Available

Bioethics with Liberty and Justice
Themes in the Work of Joseph M. Boyle

Joseph M. Boyle Jr. has been a major contributor to the development of Catholic bioethics over the past thirty five years. Boyle’s contribution has had an impact on philosophers, theologians, and medical practitioners, and his work has in many ways come to be synonymous with analytically rigorous philosophical bioethics done in the Catholic intellectual tradition. Four main themes stand out as central to Boyle’s contribution: the sanctity of life and bioethics: Boyle has elaborated a view of the ethics of killing at odds with central tenets of the euthanasia mentality, double effect and bioethics: Boyle is among the pre-eminent defenders of a role for double effect in medical decision making and morality, the right to health care: Boyle has moved beyond the rhetoric of social justice to provide a natural law grounding for a political right to health care; and the role of natural law and the natural law tradition in bioethics: Boyle’s arguments have been grounded in a particularly fruitful approach [...]

Fields of interest
Ethics; Theory of Medicine / Bioethics; Quality of Life Research; Philosophy of Religion; Religious Studies; Philosophy of Medicine

Target groups
Research

Type of publication
Contributed volume

Available
99,95 €
Classic Issues in Islamic Philosophy and Theology Today

This collection of classic issues in Islamic theology and philosophy, authored by young Islamic scholars, is for Islamic and Occidental readers alike. While the questions are classic, these studies are not focused on historical matters. They proceed from the authors’ personal quest, prompted by contemporary concerns as they seek to understand the old themes afresh as relevant to inherited Islamic wisdom. These studies strike us as initiating its contribution to the New Enlightenment, which emerges from the technolo-pragmatic turn of today’s universal situation, loosening its grip. Firstly, by their response to the present day call to revivify metaphysics, benefitting from the evolution of knowledge. Secondly, the search for renewed Islamic illumination is manifested in our authors’ sharing their reflection in encounters with Occidental thinkers, renewing the precious ties between East and West that were formed in the Middle Ages and then disrupted.

Features
This collection of studies in classic issues of Islamic theology and philosophy, authored primarily by young Islamic scholars, is directed to Islamic and Occidental readers alike. While the questions here explored are classic, these studies are definitely not narrowly focused on historical matters or the delineation of the filiation of ideas. Rather they proceed from the personal quest of each of the [...]}

Contents

Fields of interest
Philosophy of Religion; Religious Studies; Non-Western Philosophy; Metaphysics; Ethics

Target groups
Research

Type of publication
Contributed volume

Available

49,95 €
ISBN 978-94-007-0537-1

Continental Philosophy and Philosophy of Religion

This is the first book that provides access to twelve Continental philosophers and the consequences of their thinking for the philosophy of religion. Basically, in the second half of the twentieth century, it has been treated from within the Anglo-American school of philosophy, which deals mainly with proofs and truths, and questions of faith. This approach is more concerned with human experience, and pays more attention to historical context and cultural influences. As such, it provides challenging questions about the way forward for philosophy of religion in the twenty-first century.

Features
This book is a survey of the work of twentieth-century Continental philosophy and its potential impact on philosophy of religion as it is has been practiced predominantly in English-speaking countries. Major French thinkers such as Ricoeur, Levinas, Derrida, Foucault and Marion are included, as well as Luce Irigaray and Julia Kristeva. The influence of [...]}

Contents

Fields of interest
Philosophy of Religion; Religious Studies; Phenomenology; Modern Philosophy; Ontology

Target groups
Research

Type of publication
Contributed volume

Available

99,95 €
ISBN 978-94-007-0658-1

Diagrammatology

Diagrammatology investigates the role of diagrams for thought and knowledge. Based on the general doctrine of diagrams in Charles Peirce’s mature work, Diagrammatology claims diagrams to constitute a centerpiece of epistemology. The book reflects Peirce’s work on the issue in Husserl’s contemporaneous doctrine of ‘categorial intuition’ and charts the many unnoticed similarities between Peircean semiotics and early Husserlian phenomenology. Diagrams, on a Peircean account, allow for observation and experimentation with ideal structures and objects and thus furnish the access to the synthetic a priori of the regional and formal ontology of the Husserlian tradition. The second part of the book focuses on three regional branches of semiotics: biosemiotics, picture analysis, and the theory of literature. Based on diagrammatology, these domains appear as accessible for a diagrammatological approach which leaves the traditional relativism and culturalism of semiotics behind and hence constitutes a realist[...]

Features
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Contents

Fields of interest
Epistemology; Pragmatism; Phenomenology; Comparative Literature; Philosophy of Biology

Target groups
Research

Type of publication
Monograph

Available

69,95 €
ISBN 978-94-007-0531-9
Genomics, Obesity and the Struggle over Responsibilities

This volume addresses the overlapping aspects of the fields of genomics, obesity and (non-) medical ethics. It is unique in its examination of the implications of genomics for obesity from an ethical perspective. Genomics covers the sciences and technologies involved in the pathways that DNA takes until the organism is completely built and sustained: the range of genes (DNA), transcription factors, enhancers, promoters, RNA (copy of DNA), proteins, metabolism of cell, cellular interactions, and organisms. Genomics offers a holistic approach, which, when applied to obesity, can have surprising and disturbing implications for the existing networks tackling this phenomenon. The ethical concerns and considerations presented are inspired by the interaction between the procedural perspective emphasizing the necessity of consultative and participatory organizational relationships in the new gray zones between medicine and food, and the substantive perspective that both cherishes individual autonomy and embeds [...] Features

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Content. - Contributors. - Acknowledgements. - Editor’s Preface. - Part I Introduction. - 1 Challenges of Genomics to Obesity and Traditional Ethics, Michiel Korthals. - Part II Concepts of Obesity and Genomics; what can Genomics imply for Society? - 2 Behaviour, Environment or Body: Three Discourses on Obesity, Tjalling Swierstra. - 3 Tableaus and Decision Procedures for a Spectrum of Well-behaved Proof Systems, J. van den Belt. - 4 Contesting the Obesity ‘Epidemic’: Elements of a Counter Discourse, Henk van den Belt. - 5 Three Main Areas of Concern, Four Trends in Genomics and Existing Deficiencies in Academia [...] Fields of interest

Ethics; Human Genetics; Public Health Target groups

Research Type of publication

Monograph Available

2011. VI, 366 p. 20 illus. Hardcover

79,95 € ISBN 978-94-007-0239-4

Globalization and the Good Corporation

Recent trends in globalization have conclusively demonstrated that economic and socio-political problems of the 21st century would need to be confronted in the context of the inter-dependent nature of the world and its inhabitants. The emerging global economic order has once again brought capitalism and its principal actor, the large multinational corporation, to the apex of social institutions. The 23 papers represent a diversity of viewpoints and are indicative of one of the major goals, i.e., to create a meaningful discourse that goes beyond rhetoric. Instead, it investigates a search for feasible solutions in the context of real world problems, resource constraints, and human frailties. Previously Published in the Journal of Business Ethics, Volume 87 Supplement 1, 2009 Features

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Ethics; Economics; Philosophy (general) Target groups

Research Type of publication

Monograph Available

2011. VI, 366 p. 20 illus. Hardcover

79,95 € ISBN 978-94-007-0239-4

Hybrid Logic and its Proof-Theory

This is the first book-length treatment of hybrid logic and its proof-theory. Hybrid logic is an extension of ordinary modal logic which allows explicit reference to individual points in a model (where the points represent times, possible worlds, states in a computer, or something else). This is useful for many applications, for example when reasoning about time one often wants to formulate a series of statements about what happens at specific times. There is little consensus about proof-theory for ordinary modal logic. Many modal-logical proof systems lack important properties and the relationships between proof systems for different modal logics are often unclear. In the present book we demonstrate that hybrid-logical proof-theory remedies these deficiencies by giving a spectrum of well-behaved proof systems (natural deduction, Gentzen, tableau, and axiomatic systems) for a spectrum of different hybrid logics (propositional, first-order, intensional first-order, and intuitionistic). Features

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Logic; Mathematical Logic and Formal Languages; Mathematical Logic and Foundations Target groups

Research Type of publication

Monograph Available


99,95 € ISBN 978-94-007-0001-7
Impact of Network Ethics on Business Practices

This book on network ethics offers 15 scholarly chapters from a variety of disciplines and fields of study, all aimed at exploring some important aspect of how networks develop, enact, and enforce ethical norms. The chapters are ordered according to the levels of analysis each deals with, ranging from the cognitive/intrapersonal to the systemic/societal. Taken together, these chapters provide a fresh look at how networks are changing the way business is done and the way we think about ethics. Earlier versions of some chapters in this book were presented at the Conference “Network Ethics: The New Challenge in Business, ICT and Education,” hosted by the Center for Ethics, Business and Economics of the School of Business and Economics of the Catholic University of Portugal, in collaboration with Carnegie Mellon University and the University of Northern Iowa. Previously Published in the Journal of Business Ethics, Volume 90 Supplement 4, 2009

Features
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Contents
Introduction to the Special Issue on the Impact of Network Ethics on Business Practices; Antonio Vaccaro, Adele Santana and Donna J. Wood. - Adam Smith’s Vision of the Ethical Manager; George Bragues. - Hierarchical Motive Structures and Their Role in Moral Choices; Richard P. Bagozzi, Leslie E. Sekora, Vanessa Hill. - The Practice of Networking: An Ethical Approach; Doménech Melé. - Web 2.0 Social Networks: The Role of Trust; Sonja Grabner-Kräuter. - Corporate Responsibilities in Internet-Enabled Social Networks; Stephen Chen. - Deception in Business Networks: Is It Easier to Lie Online? [...]

Fields of interest
Ethics; Business & Economics (general); Philosophy (general)

Target groups
Research

Type of publication
Contributed volume

Available
2011, VI, 242 p. 10 illus. Hardcover
79.95 €
ISBN 978-94-007-0379-7

Kant’s Idealism
New Interpretations of a Controversial Doctrine

This key collection of essays sheds new light on long-debated controversies surrounding Kant’s doctrine of idealism and is the first book in the English language that is exclusively dedicated to the subject. Well-known Kantians Karl Ameriks and Manfred Baum present their considered views on this most topical aspect of Kant’s thought. Several essays by acclaimed Kant scholars broach a vastly neglected problem in discussions of Kant’s idealism, namely the relation between his conception of logic and idealism: The standard view that Kant’s logic and idealism are wholly separable comes under scrutiny in these essays. A further set of articles addresses multiple facets of the notorious notion of the thing in itself, which continues to hold the attention of Kant scholars. The volume also contains an extensive discussion of the often overlooked chapter in the Critique of Pure Reason on the Transcendental Ideal. Together, the essays provide a whole new outlook on Kantian idealism. No one with a serious [...]

Contents

Fields of interest
History of Philosophy; Epistemology; Metaphysics; Modern Philosophy; Ontology

Target groups
Research

Type of publication
Contributed volume

Available
99.95 €

Leonardo’s Choice
Genetic Technologies and Animals

Leonardo’s Choice: Genetic Technologies and Animals is an edited collection of twelve essays and one dialogue focusing on the profound affect the use of animals in biotechnology is having on both humans and other species. Communicating crucial understandings of the integrated nature of the human and non-human world, these essays, unlike the majority of discussions of biotechnology, take seriously the impact of these technologies on animals themselves. This collection’s central questions revolve around the disassociation Western ideas of creative freedom have from the impacts those ideas and practices have on the non-human world. This transdisciplinary collection includes perspectives from the disciplines of philosophy, cultural theory, art and literary theory, history and theory of science, environmental studies, law, landscape architecture, history, and geography. Included authors span three continents and four countries. Included essays contribute significantly to a growing scholarship surrounding [...]

Features
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Contents

Fields of interest
Ethics; Genetic Engineering; Interdisciplinary Studies; Humanities; Philosophy of Science

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XXVIII, 256 p. Softcover
49.95 €
ISBN 978-94-007-0523-4
The papers that comprise this book could hardly have been conceived of 10 years ago. The idea of commercial republics having a positive impact on peaceful international relations was, of course, not new. Kant and Montesquieu argued for the idea and the idea that trade and peace might be linked has been standard political rhetoric in the west for decades. These were macro-level analyses of commerce and peace. This remains a field in its infancy and this book provides a foundation for further in-depth analysis and inquiry. Previously published in the Journal of Business Ethics, Volume 89 Supplement 4, 2009

Features
The papers that comprise this book could hardly have been conceived of 10 years ago. The idea of commercial republics having a positive impact on peaceful international relations was, of course, not new. Kant and Montesquieu argued for the idea and the idea that trade and peace might be linked has been standard political rhetoric in the west for decades. These were macro-level analyses of [...]
Reason, Spirit and the Sacral in the New Enlightenment

Islamic Metaphysics Revived and Recent Phenomenology of Life

Rationality in its various expressions and innumerable applications sustains understanding and our sense of reality. It is traditionally differentiated according to its sources in the soul: in consciousness, in reason, in experience, and in elevation. Such a functional approach, however, leaves us searching for the common foundation harmonizing these rationalities. The perennial quest to resolve the aporias of rationality is finding in contemporary science’s focus on origins, on the generative roots of reality, tantalizing hints as to how this may be accomplished. This project is enhanced by the wave of recent phenomenology/ontopoiesis of life, which reveals the workings of the logos at the root of beingness and all rationality, whereby we gaze upon the prospect of a New Enlightenment. In the rays of this vision the revival of the intuitions of classical Islamic metaphysics, particularly intuition of the continuity of beingness in the gradations of life, receive fresh confirmation.

Features

Rationality in its various expressions and innumerable applications sustains understanding and our sense of reality. It is traditionally differentiated according to its sources in the soul: in consciousness, in reason, in experience, and in elevation. Such a functional approach, however, leaves us searching for the common foundation harmonizing these rationalities. The perennial quest to resolve the aporias of [...]

Contents


Fields of interest

Philosophy (general); Non-Western Philosophy; Metaphysics; Philosophy of Religion; Ethics

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €

Science in the Context of Application

We increasingly view the world around us as a product of science and technology. Accordingly, we have begun to appreciate that science does not take its problems only from nature and then produces technological applications, but that the very problems of scientific research themselves are generated by science and technology. Simultaneously, problems like global warming, the toxicology of nanoparticles, or the use of renewable energies are constituted by many factors that interact with great complexity. Science in the context of application is challenged to gain new understanding and control of such complexity—it cannot seek shelter in the ivory tower or simply pursue its internal quest for understanding and gradual improvement of grand theories. Science in the Context of Application will identify, explore and assess these changes. Part I considers the "Changing Conditions of Scientific Research" and part II "Science, Values, and Society". Examples are drawn from pharmaceutical research, the[...]

Features

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Contents


Fields of interest

Philosophy of Science; History of Science; Sociology

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €
Scientific Structuralism

Recently there has been a revival of interest in structuralist approaches to science. Taking their lead from scientific structuralists such as Henri Poincaré, Ernst Cassirer, and Bertrand Russell, some contemporary philosophers and scientists have argued that the most fruitful approach to solving many problems in the philosophy of science lies in focusing on the structural features of our scientific theories. Much of the work in scientific structuralism to date has been focused on the problem of scientific realism, where it has been argued that even in cases of radical theory change the most important structural features of predecessor theories are preserved. These structural realists argue that what our most successful theories get right about the world is these abstract structural features, rather than any particular ontological claims. More recently, philosophers of science have adopted structuralist approaches to many other issues in the philosophy of science, such as scientific explanation. [...] 

Contents

STRUCTURAL REALISM: A NEO-KANTIAN PERSPECTIVE, Michela Massimi IN DEFENCE OF ONTIC STRUCTURAL REALISM, Steven French and James Ladyman STRUCTURALIST APPROACHES TO PHYSICS: OBJECTS, MODELS, AND MODALITY, Katherine Brading MATHEMATICAL STRUCTURAL REALISM, Katherine Brading AND MODALITY, Katherine Brading MATHEMATICAL STRUCTURAL REALISM, Christo-

Fields of interest

Philosophy of Science

Target groups

Research

Type of publication

Contributed volume

Available

99,95 €


This book is meant for observers who see a deep-sky object – either by star-hopping or by using a Go-To telescope – but do not observe it in detail because they don’t know what to look for. It provides photographic images of all the objects discussed... not just images, but images that look exactly like the visual view through the eyepiece of telescopes of various apertures. Visually, deep-sky objects almost always look quite unlike the usual CCD images published in astronomical guides. The human eye doesn’t see color at such low light levels, and the contrast of extended objects (such as nebulae and galaxies) is completely different. The author lives in a less than ideal location for visual observing, with the city of London only about twenty miles to the south. He uses this to advantage, and amateur astronomers will find this book invaluable because it shows them what they will actually see from a typical suburban location, not a rare view under perfect skies.

Features

How many times have you ‘found’ a deep-sky object (DSO), ticked it off the list, and moved on, or used the ‘tour’ function on your GO-TO ‘scope and said, ‘Oh that’s just a smudge’ or ‘Can’t see it – I’ll move on to the next one’. If this has happened to you, then this book is for you. It will challenge you to go back to the ‘smudge’ and really look. Can you see the faint wisps or the detail in the [...] 

Contents


Fields of interest

Astronomy, Observations and Techniques; Popular Science in Astronomy; Photography

Target groups

Popular/general

Type of publication

Popular science

Available

44,95 €

Astronomers’ Observing Guides provide up-to-date information for amateur astronomers who want to know all about what it is they are observing. This is the basis of the first part of the book. The second part details observing techniques for practical astronomers, working with a range of different [...] 

Contents


Fields of interest

Astronomy, Observations and Techniques

Target groups

Popular/general

Type of publication

Popular science

Available

2010. XIII, 248 p. 152 illus., 30 in color. (Astronomers’ Observing Guides) Softcover
39,95 €
ISBN 978-1-4419-6438-0
Atoms, Molecules and Photons
An Introduction to Atomic, Molecular and Quantum Physics

This introduction to Atomic and Molecular Physics explains how our present model of atoms and molecules has been developed over the last two centuries, both by many experimental discoveries and, from the theoretical side, by the introduction of quantum physics to the adequate description of micro-particles. It illustrates the wave model of particles by many examples and shows the limits of classical description. The interaction of electromagnetic radiation with atoms and molecules and its potential for spectroscopy is outlined in great detail and, in particular, lasers as modern spectroscopic tools are discussed thoroughly. Many examples and problems with solutions are offered to encourage readers to actively participate in applying and adapting the fundamental physics presented in this textbook to specific situations.

Features
This introduction to Atomic and Molecular Physics explains how our present model of atoms and molecules has been developed over the last two centuries both by many experimental discoveries and, from the theoretical side, by the introduction of quantum physics to the adequate description of micro-particles. It illustrates the wave model of particles by many examples and shows the limits of classical [..]

Contents

Fields of interest
Atomic, Molecular, Optical and Plasma Physics; Condensed Matter Physics; Physical Chemistry; Quantum Physics

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2010. XVI, 589 p. (Graduate Texts in Physics) Hardcover
89,95 €
ISBN 978-3-642-10297-4

Beyond Einstein Gravity
A Survey of Gravitational Theories for Cosmology and Astrophysics

Beyond Einstein’s Gravity is a graduate level introduction to extended theories of gravity and cosmology, including variational principles, the weak-field limit, gravitational waves, mathematical tools, exact solutions, as well as cosmological and astrophysical applications. The book provides a critical overview of the research in this area and unifies the existing literature using a consistent notation. Although the results apply in principle to all alternative gravities, a special emphasis is on scalar-tensor and $f(R)$ theories. They were studied by theoretical physicists from early on, and in the 1980s they appeared in attempts to renormalize General Relativity and in models of the early universe. Recently, these theories have seen a new lease of life, in both their metric and metric-affine versions, as models of the present acceleration of the universe without introducing the mysterious and exotic dark energy. The dark matter problem can also be addressed in extended gravity. These applications[..]

Features
Beyond Einstein’s Gravity is a graduate level introduction to extended theories of gravity and cosmology, including variational principles, the weak-field limit, gravitational waves, mathematical tools, exact solutions, as well as cosmological and astrophysical applications. The book provides a critical overview of the research in this area and unifies the existing literature using a consistent notation. [..]

Contents

Fields of interest
Astronomy, Astrophysics and Cosmology; Classical and Quantum Gravitation, Relativity Theory; Applications of Mathematics

Target groups
Research

Type of publication
Monograph

Available
2010. XVI, 340 p. 110 illus., 10 in color. (Fundamental Theories of Physics, Vol. 170) Hardcover
119,95 €
ISBN 978-3-642-12531-7

Biomaterials
A Tantalus Experience

Replacement of a failing hip joint or other defective organs in the human body by artificial ‘spare parts’ has significantly improved our quality of life. These spare parts have to meet a wide spectrum of mechanical, chemical and design requirements. In this book, the properties and selection of materials for such ‘spare parts’ are deduced from case studies at the start of each chapter. Hard tissue replacements (joints, long bones, dental, soft tissue (heart valves) and tissue engineering are included. The chapters also detail the three generic classes of materials: alloys (including shape memory alloys), ceramics & glasses and polymers. Separate chapters are devoted to the toxicity of implants, the metals zirconium(-zirconium oxide), tantalum, niobium and metallic glasses, soluble metals and Rapid Prototyping techniques for the fabrication of custom made prostheses. The book concludes by a chapter on water as water is always ‘there’ and conditions the interaction between body and implant. Water[..]

Features
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Contents
The failing human machine. - A total hip joint replacement. - A heart valve. - Artificial blood vessels. - Tissue engineering. - Dental implants and shape memory alloys. - Other applications. - Summary and outlook

Fields of interest
Biophysics and Biological Physics; Biomaterials; Biomedical Engineering; Orthopedics; Life Sciences (general)

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 448 p. (Fundamental Theories of Physics, Vol. 170) Hardcover
119,95 €
ISBN 978-94-007-0164-9
Biophysics of Human Hair

This book presents the biophysics of hair. It deals with the structure of hair, its mechanical properties, the nanomechanical characterization, tensile deformation, tribological characterization, the thickness distribution and binding interactions on hair surface. It is the first book on the biophysical properties of hair.

Features
This book presents the biophysics of hair. It deals with the structure of hair, its mechanical properties, the nanomechanical characterization, tensile deformation, tribological characterization, the thickness distribution and binding interactions on hair surface. Another important topic of the book is the health of hair, human hair and skin, hair care, cleaning and conditioning treatments and damaging [...]

Contents
Introduction.- Experimental.- Structural characterization using an AFM.- Nanomechanical characterization using nanoindentation, nanoscratch, and AFM.- Multi-scale tribological characterization.- Conditioner thickness distribution and binding interactions on hair surface.- Surface potential studies of human hair using Kelvin Probe Microscopy.- Closure.

Fields of interest
Biophysics and Biological Physics; Biomaterials; Nanoscale Science and Technology; Biomedical Engineering; Nanotechnology and Microengineering; Dermatology

Target groups
Graduate

Type of publication
Monograph

Available
2010. IX, 192 p. 100 illus. (Biological and Medical Physics, Biomedical Engineering) Hardcover

99,95 €
ISBN 978-3-642-15900-8

Computational Physics

Simulation of Classical and Quantum Systems

This book encapsulates the coverage for a two-semester course in computational physics. The first part introduces the basic numerical methods while omitting mathematical proofs but demonstrating the algorithms by way of numerous computer experiments. The second part specializes in simulation of classical and quantum systems with instructive examples spanning many fields in physics, from a classical rotor to a quantum bit. All program examples are realized as Java applets ready to run in your browser and do not require any programming skills.

Features
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Contents

Fields of interest
Numerical and Computational Physics; Statistical Physics; Dynamical Systems and Complexity; Theoretical and Computational Chemistry; Computational Mathematics and Numerical Analysis; Physical Chemistry

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available

69,95 €
ISBN 978-3-642-13989-5

Deciphering the Ancient Universe with Gamma-Ray Bursts

 Gamma-ray bursts (GRBs) are the most luminous and violent explosions detectable out to the edge of the observable Universe. As soon as their cosmological origin was established, it became apparent that GRBs can serve as powerful probes of the high-redshift Universe. The association of long GRBs with the deaths of massive stars imply that they trace the sites and history of massive star formation. Their optical and near-infrared afterglows reveal spectral imprints of their environments, including the interstellar medium of their host galaxies as well as the intergalactic medium during cosmic reionization. With the Swift Observatory in orbit, such expectations are now being materialized. With GRB 090423 at $z \approx 8.2$, the most distant astrophysical object known to date, clearly demonstrates that in the coming years, GRBs will offer us an unprecedented view into the mysterious era of cosmic reionization and the [...]
High-Tc Superconductors Based on FeAs Compounds

Physical properties and models of electronic structure are analyzed for a new class of high-Tc superconductors which belong to iron-based layered compounds. Despite their variable chemical composition and differences in the crystal structure, these compounds possess similar physical characteristics, due to electron carriers in the FeAs layers and the interaction of these carriers with fluctuations of the magnetic order. A tremendous interest towards these materials is explained by the prospects of their practical use. In this monograph, a full picture of the formation of physical properties of these materials, in the context of existing theory models and electron structure studies, is given. The book is aimed at a broad circle of readers: physicists who study electronic properties of the FeAs compounds, chemists who synthesize them and specialists in the field of electronic structure calculations in solids. It is helpful not only to researchers active in the fields of superconductivity and [...] Features

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This book will address the advances, applications, research results, and emerging areas of optics, photonics, computational approaches, nano-photonics, bio-photonics, with applications in information systems. The objectives are to bring together novel approaches, analysis, models, and technologies that enhance sensing, measurement, processing, interpretation, and visualization of information. The book will concentrate on new approaches to information systems, including integration of computational algorithms, bio-inspired models, photonics technologies, information security, bio-photonics, and nano-photonics. Applications include bio-photonics, digitally enhanced sensing and imaging systems, multi-dimensional optical imaging and image processing, bio-inspired imaging, 3D visualization, 3D displays, imaging on nano-scale, quantum optics, super resolution imaging, photonics for biological applications, microscopy, information optics, and holographic information systems. Features

This book addresses applications, recent advances, and emerging areas in fields with applications in information optics and photonics systems. The objective of this book is to illustrate and discuss novel approaches, analytical techniques, models, and technologies that enhance sensing, measurement, processing, interpretation, and visualization of information using free space optics and photonics. The material [...] Features

This textbook sets out to enable readers to understand fundamental aspects underlying quantum macroscopic phenomena in solids, primarily through the modern experimental techniques and results. The classic independent-electrons approach for describing the electronic structure in terms of energy bands helps explain the occurrence of metals, insulators and semiconductors. It is underlined that superconductivity and magnetism can only be understood by taking into account the interactions between electrons. The text recounts the experimental observations that have revealed the main properties of the superconductors and were essential to track its physical origin. While fundamental concepts are underlined, those which are required to describe the high technology applications, present or future, are emphasized as well. Problem sets involve experimental approaches and tools which support a practical understanding of the materials and their behaviour. Features

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Laser Refractography

This book describes the basic principles of laser refractography, a flexible new diagnostic tool for measuring optically inhomogeneous media and flows. Laser refractography is based on digital imaging and computer processing of structured laser beam refraction (SLR) in inhomogeneous transparent media. Laser refractograms provide both qualitative and quantitative measurements and can be used for the study of fast and transient processes. In this book, the theoretical basis of refractography is explored in some detail, and experimental setups are described for measurement of transparent media using either 2D (passed radiation) or 3D (scattered radiation) refractograms. Specific examples and applications are discussed, including visualization of the boundary layer near a hot or cold metallic ball in water, and observation of edge effects and micro layers in liquids and gases. As the first book to describe this new and exciting technique, this monograph has broad cross-disciplinary appeal and will be [...]

Features
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Contents

Fields of interest
Laser Technology and Physics, Photonics; Engineering Fluid Dynamics; Image Processing and Computer Vision; Fluid- and Aerodynamics; Signal, Image and Speech Processing

Target groups
Research

Type of publication
Monograph

Available
99.95 €
ISBN 978-3-642-16548-1

Linear Isentropic Oscillations of Stars

Theoretical Foundations

The study of stellar oscillations is the preeminent way to investigate the stability of stars and to interpret their variability. The theory of the linear, isentropic oscillations of isolated gaseous stars, and thus of compressible spherically symmetric equilibrium configurations, has largely been developed from the viewpoint of the hypothesis of the physical radial pulsations of stars. Written for doctoral students and researchers, this monograph aims to provide a systematic and consistent survey of the fundamentals of the theory of free, linear, isentropic oscillations in spherically symmetric, gaseous equilibrium stars. The first part of the book presents basic concepts and equations, the distinction between spheroidal and toroidal normal modes, the solution of Poisson’s differential equation for the perturbation of the gravitational potential, and Hamilton’s variational principle. The second part is devoted to the possible existence of waves propagating in the radial direction, the origin and [...] Features

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Introduction. 1 Basic Concepts. 2 The Equations governing Linear Perturbations in a quasi-Static Star. 3 Deviations from the Hydrostatic and Thermal Equilibrium in a quasi-Static Star. 4 Eigenvalue Problem of the Linear, Isentropic Normal Modes in a quasi-Static Star. 5 Spheroidal and Toroidal Normal Modes. 6 Determination of Spheroidal Normal Modes. Mathematical Aspects. 7 The Eulerian Perturbation of the Gravitational Potential. 8 The Variational Principle of Hamilton. 9 Radial Propagation of Waves. 10 Classification of the Spherical Normal Modes. 11 Classification of the [...] Fields of interest
Astrophysics and Astroparticles; Mechanics; Thermodynamics; Acoustics

Target groups
Research

Type of publication
Monograph

Available
119.95 €
ISBN 978-3-642-13029-8

Localized States in Physics: Solitons and Patterns

Systems driven far from thermodynamic equilibrium can create dissipative structures through the spontaneous breaking of symmetries. A particularly fascinating feature of these pattern-forming systems is their tendency to produce spatially confined states. These localized wave packets can exist as propagating entities through space and/or time. Various examples of such systems will be dealt with in this book, including localized states in fluids, chemical reactions on surfaces, neural networks, optical systems, granular systems, population models, and Bose-Einstein condensates. This book should appeal to all physicists, mathematicians and electrical engineers interested in localization in far-from-equilibrium systems. The authors - all recognized experts in their fields - strive to achieve a balance between theoretical and experimental considerations thereby giving an overview of fascinating physical principles, their manifestations in diverse systems, and the novel technical applications on the horizon.

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Contents

Fields of interest
Statistical Physics, Dynamical Systems and Complexity, Quantum Optics, Quantum Electrodynamics, Nonlinear Optics, Phase Transitions and Multiphase Systems, Soft and Granular Matter, Complex Fluids and Microfluidics

Target groups
Research

Type of publication
Monograph

Available
99.95 €
ISBN 978-3-642-16548-1
Magnetothermal Properties near Quantum Criticality in the Itinerant Metamagnet Sr3Ru2O7

The compound Sr3Ru2O7 of the strontium ruthenate family has been intensely studied because experimental evidence suggests that quantum fluctuations dominate the magnetic phase diagram in the vicinity of a novel low-temperature phase. In order to understand the interplay between the quantum critical fluctuations and the phase formation, comprehensive thermodynamic information is essential. This thesis reports the results of both specific-heat and magnetocaloric experiments carried out with a bespoke experimental apparatus whose design particularly addresses the demanding constraints of the low-temperature, high-magnetic-field environment. The experimental data give evidence for unusual thermodynamic properties of the novel phase and its bounding phase transitions. Furthermore they show that the phase formation takes place against a background of strongly peaking entropy, suggesting that quantum criticality plays a key role in the physics of this system.

Features

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Proceedings of the 2009 Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists

The Joint Annual Conferences of the National Society of Black Physicists and National Society of Hispanic Physicists brings together over 500 African American and Hispanic American physics students and professionals. This conference has a cutting-edge scientific program as well as a student professional development program that includes mentor-protégé match-making and a recruiting fair. The scientific program includes over 120 oral and poster presentations covering the following topics: Astronomy and Astrophysics; Atomic and Molecular Physics; Chemical and Biological Physics; Mathematical and Computational Physics; Condensed Matter and Materials Physics; Cosmology, Gravitation and Relativity; Fluid and Plasma Physics; Physics Education Research; Photonics and Optics; Health Physics; Medical Physics; Space and Earth Systems Physics; Nuclear and Particle Physics; Physics in Africa, Latin America and the Caribbean; Physics and Public Policy; Technology Transfer.

Features
The Joint Annual Conferences of the National Society of Black Physicists and National Society of Hispanic Physicists brings together over 500 African American and Hispanic American physics students and professionals. This conference has a cutting-edge scientific program as well as a student professional development program that includes mentor-protégé match-making and a recruiting fair. [...]
Stochastic Methods and Models of Social Interaction Processes

This new edition of Quantitative Sociodynamics presents a general strategy for interdisciplinary model building and its application to a quantitative description of behavioral changes based on social interaction processes. Originally, the crucial methods for the modeling of complex systems (stochastic methods and nonlinear dynamics) were developed in physics and mathematics, but they have very often proven their explanatory power in chemistry, biology, economics and the social sciences as well. Quantitative Sociodynamics provides a unified and comprehensive overview of the different stochastic methods, their interrelations and properties. In addition, it introduces important concepts from nonlinear dynamics (e.g. synergetics, chaos theory). The applicability of these fascinating concepts to social phenomena is carefully discussed. By incorporating decision-theoretical approaches, a fundamental dynamic model is obtained, which opens new perspectives in the social sciences. It includes many

Features
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Contents

Fields of interest
Socio- and Econophysics, Population and Evolutionary Models; Operation Research / Decision Theory; Game Theory, Economics, Social and Behavioral Sciences; Probability Theory and Stochastic Processes; Social Sciences (general)

Target groups
Research

Type of publication
Monograph

Available

2011. XII, 150 p. 20 illus. (Fundamental Theories of Physics, Vol. 169) Hardcover

99,95 €

Rational Reconstructions of Modern Physics

Newton’s classical physics and its underlying ontology are loaded with several metaphysical hypotheses that cannot be justified by rational reasoning nor by experimental evidence. Furthermore, it is well known that some of these hypotheses are not contained in the great theories of modern physics, such as the theory of relativity and quantum mechanics. This book shows that, on the basis of Newton’s classical physics and by rational reconstruction, the theory of relativity as well as quantum mechanics can be obtained by partly eliminating or attenuating the metaphysical hypotheses. Moreover, it is shown that these reconstructions do not require additional hypotheses or new experimental results.

Features
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Contents
Introduction. - Chapter 1: Rise and Fall of Physical Theories - The evolution of Modern Physics from the classical world - Intuitive truth and truth of Modern Physics - The new approach: Reduction of metaphysical hypotheses. - Chapter 2: Recontruction of Special and General Relativity - Historical Development versus rational reconstruction - Reconstruction of Special Relativity - Space-time intervals and Relativistic Mechanics - The non-locality of the constant c - Could Special Relativity have been discovered already by Newton? - A pseudo-historical digression - The attempt to

Fields of interest
History and Philosophical Foundations of Physics; Philosophy of Science; Theoretical, Mathematical and Computational Physics

Target groups
Research

Type of publication
Monograph

Available

2011. XII, 150 p. 20 illus. (Fundamental Theories of Physics, Vol. 169) Hardcover

99,95 €

Synergies between Solar and Stellar Modelling

This work is intended to give a comprehensive overview of the current state of knowledge in solar and stellar modelling. The aim of the work is to compare and extend what is known from detailed solar modelling, made possible by helioseismic tools and by recent analysis of the solar spectrum, to modelling and understanding of generic stellar structures and their evolution. The book focuses on how the tools developed for the Sun are applied to other stars. The emphasis is mainly on the role of the input physics, and its relevant uncertainties, in the construction of stellar models, and on the resulting predictions for general observable quantities, and for asteroseismology.

Features
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Contents

Fields of interest
Astronomy, Astrophysics and Cosmology; Astronomy, Observations and Techniques; Atomic/Molecular Structure and Spectra; Particle and Nuclear Physics; Thermodynamics

Target groups
Research

Type of publication
Proceedings

Available

2010. XVI, 368 p. Hardcover

189,95 €
ISBN 978-90-481-9197-0
The Dynamics of Heat
A Unified Approach to Thermodynamics and Heat Transfer

Based on courses for students of science, engineering, and systems science at the Zurich University of Applied Sciences at Winterthur, this text approaches the fundamentals of thermodynamics from the point of view of continuum physics. By describing physical processes in terms of the flow and balance of physical quantities, the author achieves a unified approach to hydraulics, electricity, mechanics and thermodynamics. In this way, it becomes clear that entropy is the fundamental property that is transported in thermal processes (i.e., heat), and that temperature is the corresponding potential. The resulting theory of the creation, flow, and balance of entropy provides the foundation of a dynamical theory of heat. This extensively revised and updated second edition includes new material on dynamical chemical processes, thermoelctricity, and explicit dynamical modeling of thermal and chemical processes. To make the book more useful for courses on thermodynamics and physical chemistry at different[-]\[...

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Contents

Fields of interest
Thermodynamics; Engineering Thermodynamics; Heat and Mass Transfer; Classical Continuum Physics; Physical Chemistry

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2010. XI, 734 p. 229 illus. (Graduate Texts in Physics) Hardcover
99,95 €
ISBN 978-1-4419-7603-1
Theoretical Mechanics

This book is the first of a series covering the major topics that are taught in university courses in Theoretical Physics: Mechanics, Electrodynamics, Quantum Theory and Statistical Physics. After an introduction to basic concepts of mechanics more advanced topics build the major part of this book. Interspersed is a discussion of selected problems of motion. This is followed by a concise treatment of the Lagrangian and the Hamiltonian formulation of mechanics, as well as a brief excursion on chaotic motion. The last chapter deals with applications of the Lagrangian formulation to specific systems (coupled oscillators, rotating coordinate systems, rigid bodies). The level of the last sections is advanced. The text is accompanied by an extensive collection of online material, in which the possibilities of the electronic medium are fully exploited, e.g. in the form of applets, 2D- and 3D-animations. It contains: A collection of 74 problems with detailed step-by-step guidance towards the solutions, a [...]  

Features

After an introduction to basic concepts of mechanics more advanced topics build the major part of this book. Interspersed is a discussion of selected problems of motion. This is followed by a concise treatment of the Lagrangian and the Hamiltonian formulation of mechanics, as well as a brief excursion on chaotic motion. The last chapter deals with applications of the Lagrangian formulation to specific [...]  

Contents


Fields of interest

Mechanics; Theoretical and Applied Mechanics  

Target groups

Graduate  

Type of publication

Graduate/advanced undergraduate textbook  

Available

2010 IX, 602 p. With online files/update. (Graduate Texts in Physics) Hardcover  

69,95 €  

ISBN 978-3-642-11137-2

Theory of Particle and Cluster Emission

Nowadays experimental nuclear physics pushes its limits towards highly unstable nuclei. The theoretical description of proton- and neutron-rich nuclei or superheavy elements has become an important part of the modern nuclear physics. The main tool to investigate such unstable nuclei concerns radioactive decays, from proton emission to fission processes. We review the main theoretical methods describing decay processes induced by the strong interaction, like Coupled channels method for Gamow resonances, R-matrix theory, Distorted wave approach, semiclassical approach, Multi step and Two center shell model. Thus, most of the book is addressed to a broad audience within the nuclear physics community. Secondly, this book is an attempt to clarify some fundamental aspects connected with the fine structure or anisotropy in alpha decay and ternary cold fission. Finally, the self consistent microscopic theory of the alpha decay is analyzed.  

Features

Nowadays experimental nuclear physics pushes its limits towards highly unstable nuclei. The theoretical description of proton- and neutron-rich nuclei or superheavy elements has become an important part of the modern nuclear physics. The main tool to investigate such unstable nuclei concerns radioactive decays, from proton emission to fission processes. We review the main theoretical methods describing [...]  

Contents


Fields of interest

Nuclear Physics, Heavy Ions, Hadrons  

Target groups

Research  

Type of publication

Monograph  

Available

2010, X, 320 p. (Lecture Notes in Physics, Vol. 819) Softcover  

69,95 €  

ISBN 978-3-642-14405-9

Mastering Your PhD

"Mastering Your PhD: Survival and Success in the Doctoral Years and Beyond" helps guide PhD students through their graduate student years. Filled with practical advice on getting started, communicating with your supervisor, staying the course, and planning for the future, this book is a handy guide for graduate students who need that extra bit of help getting started and making it through. While mainly directed at PhD students in the sciences, the book’s scope is broad enough to encompass the obstacles and hurdles that almost all PhD students face during their doctoral training. Who should read this book? Students of the physical and life sciences, computer science, math, and medicine who are thinking about entering a PhD program; doctoral students at the beginning of their research; and any graduate student who is feeling frustrated and stuck. It’s never too early – or too late! This second edition contains a variety of new material, including additional chapters on how to communicate better with [...]  

Contents


Fields of interest

Science, math, and medicine who are thinking about entering a PhD program; doctoral students at the beginning of their research; and any graduate student who is feeling frustrated and stuck. It’s never too early – or too late! This second edition contains a variety of new material, including additional chapters on how to communicate better with [...]  

Features

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Fields of interest

Popular Science in Mathematics / Natural Science / Technology; Popular Science in Astronomy; Popular Science in Medicine and Health; Popular Science in Nature and Environment; Science  

Target groups

Popular/general  

Type of publication

Popular science  

Available

2011, X, 239 p. 7 illus. Softcover
Star Clusters
A Pocket Field Guide

The Pocket Field Guide to Star Clusters is written for practical astronomers and is intended for use at the telescope (or binoculars). It is a succinct, easy to understand guide with some good information in a concise yet easily understood format suited to actually using the book while observing. Thus this book is principally about observing star clusters – how to see them, how to find them, and how to image them. The first half dozen pages contain a brief outline in simple terms as to what star clusters are, and in the next approximately 150 pages there are two-page spreads for each star cluster that include concise, easy to read descriptions, observing notes, and facts, as well as photography/imaging notes, and suggested instruments. ‘Finder’ star charts help observers easily locate the cluster. Digital images (by the renowned digital imager Jan Wisniewski) illustrate the book throughout.

Features
Star clusters are some of the most beautiful objects in the night sky and are prime targets for observational astronomers as well as astrophotographers. Using some of the newer technologies and larger and more powerful telescopes available today to amateur astronomers, many more of these dazzling groupings of stars can now be located and viewed throughout the year. In this field guide that will help you to...

Contents

Fields of interest
Popular Science in Astronomy; Astronomy, Observations and Techniques

Target groups
Popular/general

Type of publication
Popular science

Available
2010. XIV, 174 p. 130 illus., 33 in color. (Astronomer's Pocket Field Guide) Softcover

39,95 €
ISBN 978-1-4419-7039-8

The Radio Sky and How to Observe It

Radio astronomy is far from being beyond the scope of amateurs astronomers, and this practical, self-contained guide for the newcomer to practical radio astronomy is an ideal introduction. This guide is a must for anyone who wants to join the growing ranks of 21st Century backyard radio astronomers. The first part of the book provides background material and explains (in a non-mathematical way) our present knowledge of the stronger radio sources – those observable by amateurs – including the Sun, Jupiter, Meteors, Galactic and extra-galactic sources. The second part of the book deals not only with observing, but – assuming no prior technical knowledge of electronics or radio theory – takes the reader step-by-step through the process of building and using a backyard radio telescope. There are complete, detailed plans and construction information for a number of amateur radio telescopes, the simplest of which can be put together and working – using only simple tools – in a weekend. For other...

Features
We have learned a great deal about our universe not only by looking at the sky through optical telescopes but also by listening to it! Although in the past most of the great discoveries have been made by professional radio astronomers using large radio telescopes built for institutions, today even amateurs can build and use small radio telescopes and make discoveries that can contribute to the general store...

Contents
A Practical Guide to Building Professional Competencies in School Psychology

Designed as a research-based yet matter-of-fact guide for beginning and future scientist-practitioners, A Practical Guide to Building Professional Competencies in School Psychology skillfully augments the reader’s training, supervision, and experience by providing a framework for honing essential skills in the field. This reader-friendly, evidence-based text encourages the continuing development of expertise in communication and collaborative skills, diversity awareness, technical knowledge, and other domains critical to building and maintaining an ethical, meaningful practice. Each chapter in this must-have volume examines a core area of expertise in depth, and provides checklists (linked to competencies set out in NASP’s Blueprint III) and the Development and Enhancement of Competencies Assessment Form are included to enable readers to gain a more complete understanding of their professional strengths and needs. The skill sets covered include: Developing cross-cultural competencies. Evaluating...

Features

- It used to be called noncompliance, and the patients themselves referred to as difficult. But regardless of the terminology, children’s reluctance or failure to commit to prescribed regimens reduces the effectiveness of treatment, often leading to additional care, higher costs, and serious, even deadly, complications.
- Reflecting a single, authoritative voice, the Second Edition of Adherence to Pediatric Medical Regimens analyzes in comprehensive clinical detail the factors that affect children’s and teens’ commitment to treatment – from developmental issues to the influence of parents, peers, and others in their orbit – and offers empirically sound guidelines for encouraging adherence. It cautions against viewing young clients as miniature grownups or scaling down adult data, advocating instead for a more nuanced understanding of the population and a collaborative relationship between practitioner and client. Critical areas of interest to clinicians and researchers in pediatrics are brought into...

Contents

- Definitions, Types, and Prevalence of Nonadherence.
- Consequences, and Correlates.
- Adherence Theories: Review, Critique, and Clinical Implications.
- Assessing Adherence.
- Assessing Disease and Health Status.
- Strategies for Improving Adherence to Pediatric Medical Regimens.
- Review of Adherence Intervention Studies and Recommendations for Research in Clinical Practice.
- References.
- Appendix.
- Index.

Fields of interest

- Child and School Psychology; Pediatrics; Clinical Psychology; Health Psychology; Psychiatry

Target groups

- Research

Type of publication

- Monograph

Available

- 39.95 €
  ISBN 978-1-4419-8143-1
Avoiding Treatment Failures in the Anxiety Disorders

Extensive studies have shown cognitive-behavioral therapy to be highly effective in treating anxiety disorders, improving patients' social functioning, job performance, and quality of life. Yet every CBT clinician faces some amount of client resistance, whether in the form of "This won't work", "I'm too depressed", or even "You can't make me!" Avoiding Treatment Failures in the Anxiety Disorders analyzes the challenges presented by non-compliance, and provides disorder- and population-specific guidance in addressing the barriers and removing the obstacles that derail therapy. Making use of extensive clinical expertise and current empirical findings, expert contributors offer cutting-edge understanding of the causes of treatment complications—and innovative strategies for their resolution—in key areas, including: The therapeutic alliance The full range of anxiety disorders (i.e., panic, PTSD, GAD) Comorbidity issues (i.e., depression, personality disorders, eating disorders, substance abuse,[…]

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Contents

Fields of interest
Clinical Psychology; Psychotherapy

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2010. XIV, 405 p. (Series in Anxiety and Related Disorders) Softcover
59.95 €
ISBN 978-1-4419-8169-1

Developing and Evaluating Educational Programs for Students with Autism

Recent years have witnessed a marked increase both in the number of children diagnosed with autism spectrum disorders (ASDs) and those placed alongside their typically developing peers in general education classrooms. These events bring with them a plethora of challenges, particularly in the areas of program design and educational practices. Developing and Evaluating Educational Programs for Students with Autism offers systematic, evidence-based guidelines—as well as tools, checklists, and other resources—for creating effective learning environments for students across the autism spectrum and the grade span. Planning, development, implementation, and continuous evaluation are examined in detail in this practical volume, which features:

- An overview of the ASDs, with an emphasis on effective educational practice.
- In-depth discussion of the ASD Program Development and Evaluation Protocol. A staff training model for personnel working with students with ASD: A detailed framework for student support teams and[…]

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Contents

Fields of interest
Child and School Psychology; Medicine (general); Developmental Psychology; Education (general); Personality and Social Psychology; Community & Environmental Psychology

Target groups
Research

Type of publication
Monograph

Available
2011. XXIV, 250 p. (Advancing Responsible Adolescent Development) Hardcover
89.95 €

Digital Youth

Youth around the world are fittingly described as digital natives because of their comfort and skill with technological hardware and content. Recent studies indicate that an overwhelming majority of children and teenagers use the Internet, cell phones, and other mobile devices. Equipped with familiarity and unprecedented access, it is no wonder that adolescents consume, create, and share copious amounts of content. But is there a cost? Digital Youth: The Role of Media in Development recognizes the important role of digital tools in the lives of teenagers and presents both the risks and benefits of these new interactive technologies. From social networking to instant messaging to text messaging, the authors create an informative and relevant guidebook that goes beyond description to include developmental theory and implications. Also woven throughout the book is an international sensitivity and understanding that clarifies how, despite the widespread popularity of digital communication, technology use[…]

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Fields of interest
Child and School Psychology; Medicine (general); Developmental Psychology; Education (general); Personality and Social Psychology; Community & Environmental Psychology

Target groups
Research

Type of publication
Monograph

Available
2011. XXIV, 250 p. (Advancing Responsible Adolescent Development) Hardcover
89.95 €
Disability and Aging Discrimination
Perspectives in Law and Psychology

Two things are certain in the contemporary workplace: the aging of employees, and negative attitudes toward them—especially those with disabilities—by younger colleagues and supervisors. Yet related phenomena seem less clear: how do negative stereotypes contribute to discrimination on the job? And how are these stereotypes perceived in legal proceedings? Bringing theoretical organization to an often unfocused literature, Disability and Aging Discrimination offers research in these areas at the same level of rigor as research into racial and gender discrimination. The book applies Social Analytic Jurisprudence, a framework for testing legal assumptions regarding behavior, and identifies controversies and knowledge gaps in age-discrimination and disability law. Chapters provide historical background or present-day context for the prevalence of age and disability prejudices, and shed light on the psychosocial concepts that must be understood, in addition to medical considerations, to make [...]"
**Encyclopedia of Child Behavior and Development**

This major reference work will break new ground as an electronic resource for students, educators, researchers and professionals. Encyclopedic in breadth Child Behavior and Development will serve as a reference repository of knowledge in the field as well as a frequently updated conduit of new knowledge long before such information trickles down from research to standard textbooks. Child Behavior and Development will consist of three volumes divided by the major conceptual areas of child development: Learning, Behavior, and Emotions. Taking advantage of the techniques offered by the electronic medium, Child Behavior and Development will offer an extensive cross referencing system facilitating search and retrieval of information.

**Features**
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**Fields of interest**
Child and School Psychology; Learning and Instruction; Education (general); Developmental Psychology

**Target groups**
Professional/practitioner

**Type of publication**
Encyclopedia

**Available**

**699,00 €**
ISBN 978-0-387-77579-1

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**Financial Planning and Counseling Scales**

The personal, household, and consumer finance field is growing quite rapidly, especially as universities and policy makers see the need for additional research and clinical application in this dynamic area of study. Currently, the profession is advancing towards the stage where professional practice becomes increasingly evidenced-based. Financial Planning and Counseling Scales provides educators, researchers, students, and practitioners with a much needed review of reliable and valid personal assessment scales and instruments that can be used for both research and clinical practice. In addition to presenting actual scales and instruments with applicable psychometric details, the book also includes an overview of measurement issues and psychometric evaluation.

**Features**
A salient trend during the current economic crisis is the increasing number of consumers paying closer attention to their spending and saving habits in efforts to control their finances. Not surprisingly, these same uncertain times are witnessing the growth not only of financial planning services, but of financial counseling and therapy. Accompanying the move toward professional standards and an academic...[

**Contents**
Psychotherapy and Counseling

**Target groups**
Research

**Type of publication**
Monograph

**Available**
2011. XVIII, 647 p. 5 illus. Hardcover

**119,95 €**
ISBN 978-1-4419-6907-1

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**Group-Centered Prevention Programs for At-Risk Students**

School psychologists, counselors, and educators in the K-12 setting face the daunting responsibility of finding balance between mandated testing, students’ mental-health concerns, and additional academic help for at-risk students. One solution to this dilemma is to implement a school-based mental health approach that combines learning and counseling needs into a single program. Several types of successful programs are available, though week-long intensive programs have recently increased in popularity. Group-Centered Prevention Programs for At-Risk Students focuses on the development of such a week-long prevention program, and provides professionals with step-by-step directions to create their own program. It also focuses on the use of group-centered interventions as an opportunity to prevent at-risk behaviors as a means of correcting or changing dysfunctional behavior. This highly readable volume addresses such challenging issues as: Using self-reflection to teach writing skills. Increasing...[

**Features**
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**Contents**

**Fields of interest**
Child and School Psychology; Educational Psychology; Social Work; Clinical Psychology; Psychotherapy and Counseling

**Target groups**
Research

**Type of publication**
Monograph

**Available**
2011. XX, 155 p. Hardcover

**89,95 €**
ISBN 978-1-4419-7247-7
Measuring Race and Ethnicity

Racial and ethnic issues stand at the core of social, political, and economic concerns in an increasingly diverse America. Accordingly, how individuals from the various ethnic groups regard themselves—and others—is a salient focus of research studies across the disciplines. Measuring Race and Ethnicity gathers psychological measures of common phenomena such as racial identity, acculturation, and intra- and intergroup relations enabling researchers to compare concepts across groups and better evaluate differences and disparities. Researchers in psychology, social work, and public health examining cultural and race-related topics will find an immediately relevant source of valid and reliable scales in Measuring Race and Ethnicity.

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Contents


Fields of interest

Personality and Social Psychology

Target groups

Research

Type of publication

Monograph

Available

2011. XVIII, 198 p. Hardcover
89,95 €
ISBN 978-1-4419-6696-4

Personality and Psychopathology

Critical Dialogues with David Shapiro

With his penetrating theory of personality and his nuanced understanding of the psychotherapeutic relationship, David Shapiro has influenced clinicians across the theoretical spectrum since the publication of Neurotic Styles in 1965. This influence is on vivid display in Personality and Psychopathology, as noted contemporary theorists critically evaluate his work in a fascinating dialogue with Shapiro himself. Starting with a crucial therapeutic observation—the centrality of the relationship between what the client says in session and how it is said—contributors revisit his core concepts regarding personality development, the prevelational aspects of psychopathology, the limits to self-understanding, and the defensive uses of self-deception in light of current psychodynamic, evolutionary, and systems theory. Shapiro’s replies, and the contributors’ rejoinders, highlight points of departure and agreement and provide further clarification and extension of his ideas on a wide range of salient topics.[…]

Features

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Contents

Introduction.- Autobiographical Notes.- Contributors.- Section I—Comparative Analysis.- Another View of Psychotherapy?—Reply to Herbert Schlesinger.- Response to David Shapiro.- Personality in Context: Reflections on the Contributions of David Shapiro.—Reply to Paul Wachtel.- Convergences: Response to David Shapiro’s Reply.— A New Developmental Foundation for David Shapiro’s Work on Autonomy and Character.— Reply to Virginia Demos.— Continuing the Discussion.— Section II—Personality, Personality Disorders and Psychosis.— Two Configurations of Personality Development and […]

Fields of interest

Personality and Social Psychology; Psychotherapy; Psychoanalysis

Target groups

Research

Type of publication

Monograph

Available

89,95 €

Psychological and Political Strategies for Peace Negotiation

A Cognitive Approach

Peace is one of the most sought after commodities around the world, and as a result, individuals and countries employ a variety of tactics to obtain it. One of the most common practices used to accomplish peace is negotiation. With its elevated role in the dialogue surrounding peace, negotiation is often steeped in politics and focused on managing parties in conflict. However, the art and science of negotiation can and should be viewed more broadly to include a psychological and cognitive approach. Psychological and Political Strategies for Peace Negotiation gathers the foremost authors in the field and combines their expertise into a volume which addresses the complexity of peace negotiation strategies. To further underscore the importance of successful negotiation strategies, the editors have also included the unique perspective of authors with personal experience with political upheaval in Serbia and Lebanon. Though each chapter focuses on a different topic, they are integrated to create a […]

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Contents


Fields of interest

Cross Cultural Psychology; Clinical Psychology; Political Science

Target groups

Research

Type of publication

Contributed volume

Available

2011. XXVIII, 258 p. Hardcover
89,95 €
Risk and Resilience in U.S. Military Families

War-related separations challenge military families in many ways. The worry and uncertainty associated with absent family members exacerbates the challenges of personal, social, and economic resources on the home front. U.S. military operations in Iraq and Afghanistan have sent a million service personnel from the U.S. alone into conflict areas leaving millions of spouses, children, and others in stressful circumstances. This is not a new situation for military families, but it has taken a toll of magnified proportions in recent times. In addition, medical advances have prolonged the life of those who might have died of injuries. As a result, more families are caring for those who have experienced amputation, traumatic brain injury, and profound psychological wounds. The Department of Defense has launched unprecedented efforts to support service members and families before, during, and after deployment in all locations of the country as well as in remote locations. Stress in U.S. Military-[..]

Contents
U.S. Military Families Under Stress: What We Know and What We Need to Know.- I. Marital Functioning.- Introduction.- Does Deployment Keep Marriages Together or Break Them Apart? Evidence from Afghanistan and Iraq.- Couple Functioning and PTSD in Returning OIF Soldiers: Preliminary Findings from the Readiness and Resilience in National Guard Soldiers Project.- Distress in Spouses of Combat Veterans with PTSD: The Importance of Interpersonally Based Cognitions and Behaviors.- Empirically Guided Community Intervention for Partner Abuse, Child Maltreatment, Suicidality, and Substance-[..]

Fields of interest
Psychotherapy and Counseling

Target groups
Research

Type of publication
Monograph

Available
119.95 €

Self-Help in Mental Health
A Critical Review

They’re fast, cheap, and promise amazing results—no wonder more people seek mental health advice from self-help books and sites rather than seeking therapy. Complicating this picture: many resources are inappropriate, ineffective, even dangerous. For the clinicians who would gladly recommend self-help for their clients, the challenge is finding reliable, evidence-based sources of help among the vast quantities available. Self-Help in Mental Health: A Critical Review guides readers through this plethora of materials, organizing it into useful order, evaluating popular approaches and trends, and recommending clinically valid, science-based resources for specific clinical and sub-clinical problems. Its authors explain how and why such methods work, offering innovative uses for self-help in prevention and promotion, therapy and rehabilitation, including strengthening therapeutic gains (akin to homework in cognitive-behavioral therapy) and encouraging self-reliance. While some may be tempted to write-off-[..]

Features
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Contents
Part I: Introduction to the field of self-help in mental health.- What constitutes self-help in mental health and what can be done to improve it.- The self-help movement in mental health: from passivity to interactivity.- Part II: Self-support approaches: Initiated, Guided, Maintained, and monitored by professionals (for participants).- Distance writing: helping without seeing participants.- Bibliotherapy.- Online support groups and therapy.- Manuals for practitioners.- Part III: Self-help and self-change approaches for specific conditions: initiated, administered, guided, main-tained-[..]

Fields of interest
Clinical Psychology; Psychotherapy; Social Work

Target groups
Research

Type of publication
Monograph

Available
2010. XXIV, 312 p. Softcover
69.95 €

Systems of Psychotherapy
Dialectical Tensions and Integration

Psychotherapy today encompasses a broad spectrum of approaches that focus to a varying extent on psychophysiological, behavioral, environmental, or other aspects of human problems. Despite the overlap that exists between many of these approaches, there is no method that integrates more than a few of these aspects. It is therefore important to understand the inherent advantages and disadvantages of each therapy system, and how each helps people to solve their problems. Systems of Psychotherapy: Dialectical Tensions and Integration provides an in-depth overview of the major therapeutic systems in practice today and outlines the philosophical differences and opportunities for integration among them. This volume also considers the new ideas and approaches to therapy stemming from the postmodernist and integrative movements. By highlighting the unique merits of each system, readers are encouraged to combine factors present in the various systems to create a comprehensive view of human nature and-[..]

Features
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Contents

Fields of interest
Clinical Psychology; Psychotherapy; Social Work

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XIX, 550 p. Hardcover
119.95 €
ISBN 978-1-4419-7307-8
The Cinematic Mirror for Psychology and Life Coaching

Cinema both reflects life and contours life—that is its psychological power. And for decades, clinicians and educators have recognized the value of this power, using it to respectively heal in therapy and educate in the classroom. The Cinematic Mirror for Psychology and Life Coaching mines the illustrative value of cinema, offering therapists and life coaches access to ideas that can motivate and enlighten clients. Although many movie guides exist, this volume complements the available literature by adding positive psychology, mental health, and wellness perspectives to the clinical/educational/coaching mix. The serious intent to cull from cinema its underlying psychological value has motivated noted clinicians, life coaches, and cultural critics to offer science-based analysis and intervention strategies. Readers may add their own movie insights and professional expertise to this rich foundation. The volume covers international as well as domestic cinema in a variety of genres, providing a range off...[

Features
Cinema both reflects life and contours life—that is its psychological power. And for decades, clinicians and educators have recognized the value of this power, using it to respectively heal in therapy and educate in the classroom. The Cinematic Mirror for Psychology and Life Coaching mines the illustrative value of cinema, offering therapists and life coaches access to ideas that can motivate and [...]

Fields of interest
Clinical Psychology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
59,95 €
ISBN 978-1-4419-8156-1

The Concept of Race and Psychotherapy

Is our society color-blind? Trans-racial? Post-racial? And what—if anything—should this mean to professionals in clinical practice with diverse clients? The ambitious volume The Concept of Race and Psychotherapy probes these questions, compelling readers to look differently at their clients (and themselves), and offering a practical framework for more effective therapy. By tracing the racial “folk taxonomies” of eight cultures in the Americas and the Caribbean, the author elegantly defines race as a fluid construct, dependent on local social, political, and historical context for meaning but meaningless in the face of science. This innovative perspective informs the rest of the book, which addresses commonly held assumptions about problem behavior and the desire to change, and presents a social-science-based therapy model, applicable to a wide range of current approaches, that emphasizes both cultural patterns and client uniqueness. Among the highlights of the coverage: Common elements in therapy and...[

Features
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Contents

Fields of interest
Clinical Psychology; Psychotherapy; Cross Cultural Psychology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XVI, 225 p. Hardcover
89,95 €
ISBN 978-1-4419-7575-1

Confronting Genocide

“Never again” stands as one the central pledges of the international community following the end of the Second World War, upon full realization of the massive scale of the Nazi extermination programme. Genocide stands as an intolerable assault on a sense of common humanity embodied in the Universal Declaration of Human Rights and other fundamental international instruments, including the Convention on the Prevention and Punishment of the Crime of Genocide and the United Nations Charter. And yet, since the Second World War, the international community has proven incapable of effectively preventing the occurrence of more genocides in places like Cambodia, Yugoslavia, Rwanda and Sudan. Is genocide actually preventable, or is “ever again” a more accurate catchphrase to capture the reality of this phenomenon? The essays in this volume explore the complex nature of genocide and the relative promise of various avenues identified by the international community to attempt to put a definitive end to it...[

Features
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Contents
Moving From Repression to Prevention of Genocide; Payam Akhavan and René Provost.- PART I: RECONCEPTUALIZING GENOCIDE.- 1 From Irish Famine to Congo Reform: Nineteenth-Century Roots of International Human Rights Law and Activism; Ben Kiernan.- 2 Parfurs: Genocidal Theory and Practical Atrocities; Gérard Prunier.- 3 Sovereignty as Responsibility for the Prevention of Genocide; Francis M. Deng.- 4 Citizenship, National Identity, and Genocide; Douglas Greenberg.- 5 Incitement, Prevention and Media Rights; Mark Thompson.- PART II: UN/PREVENTED GENOCIDE.- 6 Some Problems of Genocide...[

Fields of interest
Political Science; Criminology & Criminal Justice; International & Foreign Law

Target groups
Research

Type of publication
Contributed volume

Available
2011. XX, 374 p. (Ius Gentium: Comparative Perspectives on Law and Justice, Vol. 7) Hardcover
99,95 €
Contested Cultural Heritage

Cultural heritage is material – tangible and intangible – that signifies a culture’s history or legacy. It has become a venue for contestation, ranging in scale from protests to violently claimed and destroyed. But who defines what is to be preserved and what is to be erased? As cultural heritage becomes increasingly significant across the world, the number of issues for critical analysis and, hopefully, mediation, arise. The issue stems from various groups: religious, ethnic, national, political, and others come together to claim, appropriate, use, exclude, or erase markers and manifestations of their own and others’ cultural heritage as a means for asserting, defending, or denying claims to power, land, and legitimacy. Can cultural heritage be well managed and promoted while at the same time kept within parameters so as to diminish contestation? The cases herein range from Greece, Spain, Egypt, the UK, Syria, Zimbabwe, Italy, the Balkans, Bénin, and Central America.

Features

Cultural heritage is material – tangible and intangible – that signifies a culture’s history or legacy. It has become a venue for contestation, ranging in scale from protesting to violently claimed and destroyed. But who defines what is to be preserved and what is to be erased? As cultural heritage becomes increasingly significant across the world, the number of issues for critical analysis and, hopefully, [...]
Hazardous Child Labour in Latin America

In order to bridge the lack of information on child labour and to stimulate policy interventions the IRED-WOC Foundation (International Research on Working Children) has undertaken action-based research in the field of the worst forms of child labour in Latin America. In 2006 and 2007 a comparative study on the Worst Forms of Child Labour was carried out in 7 different economic sectors in Bolivia, Guatemala and Peru focussing on the hazardous worst forms. The central research objectives were as follows: • to map the working and living situations of children who are working in specific economic sectors and what the consequences of this work are for their physical and emotional wellbeing, • to investigate the reasons why these children are working in these worst forms sectors. The research results were expected to give important insights into the current polarised debate between those who state child labour is above all related to cultural considerations and those who state that economic reasons are [...] Features

From children working on Bolivian sugar cane plantations to child miners in Peru, child labour lingers on in many parts of the world, including Latin America. There are various reasons as to why child labour continues to be such a tenuous social problem. There is disagreement on its causes and thus disagreement on the extent of the problem. In order to [...] Contents


Quality of Life Research; Labor Economics; Ethics; Maternal and Child Health

Target groups

Research

Type of publication

Contributed volume

Available

2011. 200 p. Hardcover

99,95 €


The Indirect Estimation of Migration

Methods for Dealing with Irregular, Inadequate, and Missing Data

This unique book introduces an essential element in applied demographic analysis: a tool-kit for describing, smoothing, repairing and - in instances of totally missing data - inferring directional migration flows. Migration rates combine with fertility and mortality rates to shape the evolution of human populations. Demographers have found that all three generally exhibit persistent regularities in their age and spatial patterns, when changing levels are controlled for. Drawing on statistical descriptions of such regularities, it is often possible to improve the quality of the available data by smoothing irregular data, imposing the structures of borrowed and related data on unreliable data, and estimating missing data by indirect methods. Model migration schedules and log-linear models are presented as powerful methods for helping population researchers, historical demographers, geographers, and migration analysts work with the data available to them. Features

This unique book introduces an essential element in applied demographic analysis: a tool-kit for describing, smoothing, repairing and - in instances of totally missing data - inferring directional migration flows. Migration rates combine with fertility and mortality rates to shape the evolution of human populations. Demographers have found that all three generally exhibit persistent regularities in their [...] Contents

Chapter 1: Introduction - Chapter 2: Describing age structures of migration - Chapter 3: Describing Spatial Structures of Migration - Chapter 4: Smoothing age and spatial patterns - Chapter 5: Imposing age and spatial structures - Chapter 6: Inferring age and spatial patterns - Chapter 7: Conclusion. Fields of interest

Migration; Demography; Quantitative Geography; Statistics for Social Science, Behavioral Science, Educational Policy, and Law; Sociology

Target groups

Research

Type of publication

Monograph

Available


49,95 €

ISBN 978-94-007-0451-0

Methodological Choice and Design

Scholarship, Policy and Practice in Social and Educational Research

Beginning and well-seasoned researchers alike face significant challenges in understanding the complexities of research designs arising from both within and across methodological paradigms, and in applying them in ways that maximise impact on knowledge, practice, and policy. This volume engages educational and social researchers in a scholarly debate offering some crucial re-interpretations of established research methodologies in light of contemporary conditions and critical introduction to some contemporary research approaches yet to gain general recognition. This book is a contemporary vademecum for researchers, practitioners and graduate students on research methodologies and designs for educational and social change in today’s world. The chapters chart and analyse the conceptual and practical complexities of a variety research designs for contemporary educational and social work research. This anthology, taken overall, provides readers with the knowledge and understanding needed not only to [...] Features

Beginning and well-seasoned researchers alike face major challenges in understanding the complexities of research designs arising from within and across methodological paradigms as well as in applying them in ways that maximise impact on knowledge, practice and policy. This volume offers crucial re-interpretations of established research methodologies in light of contemporary conditions. It also presents [...] Contents


Methodology of the Social Sciences; Education (general); Social Work; Social Sciences (general); Psychological Methods / Evaluation

Target groups

Research

Type of publication

Contributed volume

Available

2011. XII, 311 p. (Methodos Series, Vol. 9) Hardcover

139,95 €

Trade Policy in the Asia-Pacific
The Role of Ideas, Interests, and Domestic Institutions

East Asian countries are now pursuing greater formal economic institutionalization, weaving a web of bilateral and multilateral preferential trade agreements. Scholarly analysis of “formal” East Asian regionalism focuses on international political and economic factors such as the end of the Cold War, the Asian financial crisis, or the rising Sino-Japanese rivalry. Yet this work pays inadequate attention to the strategies of individual government agencies, business groups, labor unions, and NGOs across the region. Moreover, most studies also fail to adequately characterize different types of trade arrangements, often lumping together bilateral accords with multilateral ones, and transregional agreements with those within the region. To fully understand this cross-national variance, this book argues that researchers must give greater attention to the domestic politics within East Asian countries and the U.S., involving the interplay of these subnational players. With contributions from leading[...]

Features
East Asian countries are now pursuing greater formal economic institutionalization, weaving a web of bilateral and multilateral preferential trade agreements. Scholarly analysis of “formal” East Asian regionalism focuses on international political and economic factors such as the end of the Cold War, the Asian financial crisis, or the rising Sino-Japanese rivalry. Yet this work pays inadequate attention to[...]

Contents

Fields of interest
Political Science; International Economics

Target groups
Research

Type of publication
Contributed volume

Available
2011. XVI, 250 p. 4 illus. (The Political Economy of the Asia Pacific) Hardcover
99,95 €
ISBN 978-1-4419-6832-6

T.R. Machan, Chapman University, Orange, CA, USA

Why Is Everyone Else Wrong?
Explorations in Truth and Reason

Especially when there is a lot of political rhetoric in the air, those of us with strong political convictions are inclined to reflect on just why we hold certain views even as others who are basically like us hold very different ones. Social scientists and other thinkers struggle to explain it, but the puzzle remains—in part because they, too, disagree so much with one another. Whether the arena is politics, religion, business, scientific research, or education, individuals who operate in the same environment and experience the same conditions may have radically different interpretations of the facts and diametrically opposed convictions about how to react to them. When faced with a fundamental disagreement, we ask ourselves: Why are these folks so wrong? And how can they be so convinced that we are wrong? In this provocative monograph, Tibor Machan explores the principles of truth, reason, and ideology, with particular respect to the profound political, economic, and social crises gripping the[...]

Features
Especially when there is a lot of political rhetoric in the air, those of us with strong political convictions are inclined to reflect on just why we hold certain views even as others who are basically like us hold very different ones. Social scientists and other thinkers struggle to explain it, but the puzzle remains—in part because they, too, disagree so much with one another. Whether the arena is[...]

Available
2011. XII, 29 p. (SpringerBriefs in Political Science) Softcover
49,95 €

Statistics
M.T. Wells, Cornell University, Ithaca, NY, USA; A. SenGupta, Applied Statistics Unit, Indian Statistical Institute, Kolkata, India (Eds.)

Advances in Directional and Linear Statistics
A Festschrift for Sreenivasa Rao Jammalamadaka

The present volume consists of papers written by students, colleagues and collaborators of Sreenivasa Rao Jammalamadaka from various countries, and covers a variety of research topics which he enjoys and contributed immensely to.

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Contents

Fields of interest
Statistical Theory and Methods

Target groups
Research

Type of publication
Contributed volume

Available
2011. XX, 331 p. Hardcover
99,95 €
ISBN 978-3-7908-2627-2
Introduction to Modeling and Analysis of Stochastic Systems

This is an introductory-level text on stochastic modeling. It is suited for undergraduate students in engineering, operations research, statistics, mathematics, actuarial science, business management, computer science, and public policy. It employs a large number of examples to teach the students to use stochastic models of real-life systems to predict their performance, and use this analysis to design better systems. The book is devoted to the study of important classes of stochastic processes: discrete and continuous time Markov processes, Poisson processes, renewal and regenerative processes, semi-Markov processes, queueing models, and diffusion processes. The book systematically studies the short-term and the long-term behavior, cost/reward models, and first passage times. All the material is illustrated with many examples, and case studies. The book provides a concise review of probability in the appendix. The book emphasizes numerical answers to the problems. A collection of MATLAB programs.[...]

Features
This is an introductory-level text on stochastic modeling. It is suited for undergraduate students in engineering, operations research, statistics, mathematics, actuarial science, business management, computer science, and public policy. It employs a large number of examples to teach the students to use stochastic models of real-life systems to predict their performance, and use this analysis to design better[...]

Contents
Statistics (general); Probability Theory and Stochastic Processes; Operation Research / Decision Theory

Target groups
Upper undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Available

Mathematical and Statistical Models and Methods in Reliability

Applications to Medicine, Finance, and Quality Control

This book is a selection of invited chapters, all of which deal with various aspects of mathematical and statistical models and methods in reliability. Written by renowned experts in the field of reliability, the contributions cover a wide range of applications, reflecting recent developments in areas such as survival analysis, aging, lifetime data analysis, artificial intelligence, medicine, carcinogenesis studies, nuclear power, financial modeling, aircraft industry, quality control, and transportation. The volume is thematically organized into four major sections: Reliability Models, Methods, and Optimization; Statistical Methods in Reliability; Applications; and Computer Tools for Reliability. Mathematical and Statistical Models and Methods in Reliability is an excellent reference text for researchers and practitioners in applied probability and statistics, industrial statistics, engineering, medicine, finance, transportation, the oil and gas industry, and artificial intelligence.

Features
An outgrowth of the sixth conference on “Mathematical Methods in Reliability: Theory, Methods, and Applications,” this book is a selection of invited chapters, all of which deal with various aspects of mathematical and statistical models and methods in reliability. Written by recognized experts in the field of reliability, the contributions cover a wide range of models, methods, and applications.[...]

Contents

Fields of interest
Statistical Theory and Methods; Quality Control, Reliability, Safety and Risk; Applications of Mathematics; Statistics for Life Sciences, Medicine, Health Sciences; Probability Theory and Stochastic Processes; Mathematical Modeling and Industrial Mathematics

Target groups
Research

Available
Proceedings of COMPSTAT’2010


Proceedings of the 19th international symposium on computational statistics, held in Paris august 22-27, 2010. Togethe with 3 keynote talks, there were 14 invited sessions and more than 100 peer-reviewed contributed communications.

Features
Proceedings of the 19th international symposium on computational statistics, held in Paris august 22-27, 2010. Togethe with 3 keynote talks, there were 14 invited sessions and more than 100 peer-reviewed contributed communications.

Contents

Fields of interest
Statistics and Computing / Statistics Programs

Target groups
Research

Available
Proceedings

2010. XXX, 621 p. Softcover
139,95 € ISBN 978-3-7908-2603-6
Statistics and Data Analysis for Financial Engineering

Statistical Methods for Data Analysis

Features
Financial engineers have access to enormous quantities of data but need powerful methods for extracting quantitative information, particularly about volatility and risks. Key features of this textbook are: illustration of concepts with financial markets and economic data, R Labs with real-data exercises, and integration of graphical and analytic methods for modeling and diagnosing modeling errors. Despite some overlap with the author’s undergraduate textbook, this book differs from that earlier volume in several important aspects: it is graduate-level; computations and graphics are done in R; and many advanced topics are covered, for example, multivariate distributions, copulas, Bayesian computations, VaR and expected shortfall, and cointegration. The prerequisites are basic statistics and probability, matrices and linear algebra, and...[...]

Contents
Introduction... Returns... Fixed income securities... Exploratory data analysis... Modeling univariate distributions... Resampling... Multivariate statistical models... Copulas... Time series models: basics... Time series models: further topics... Portfolio theory... Regression: basics... Regression: troubleshooting... Regression: advanced topics... Cointegration... The capital asset pricing model... Factor models and principal components... GARCH models... Risk management... Bayesian data analysis and MCMC... Non-parametric regression and splines.

Fields of interest
Statistics for Business, Economics, Mathematical Finance, Insurance

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
89.95 €
ISBN 978-1-4419-7786-1

Statistics of Financial Markets

An Introduction

Statistics of Financial Markets offers a vivid yet concise introduction to the growing field of statistical application in finance. The reader will learn the basic methods of evaluating option contracts, analysing financial time series, selecting portfolios and managing risks making realistic assumptions of the market behaviour. The focus is both on the fundamentals of mathematical finance and financial time series analysis and on applications to given problems of financial markets, thus making the book the ideal basis for lecturers, seminars and crash courses on the topic. For the third edition the book has been updated and extensively revised. Several new aspects have been included: new chapters on long memory models, copulae and CDO valuation. Practical exercises have been added, the solutions of which are provided in the book by S. Borak, W. Härdle and B. López Cabrera (2010) ISBN 978-3-642-11133-4. Both R and Matlab Code, together with the data, can be downloaded at www.springer.com/978-3-642-16520-7

Features
Statistics of Financial Markets offers a vivid yet concise introduction to the growing field of statistical application in finance. The reader will learn the basic methods of evaluating option contracts, analysing financial time series, selecting portfolios and managing risks making realistic...[...]

Contents
Option Pricing... Statistical Models of Financial Time Series... Selected Financial Applications... Technical Appendix... Appendix... Frequently Used Notations... Index.

Fields of interest
Statistics for Business, Economics, Mathematical Finance, Insurance; Quantitative Finance; Finance / Banking

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XXII, 599 p. (Universitext) Softcover
74.95 €
ISBN 978-3-642-16520-7

Time Series Analysis and Its Applications

With R Examples

Time Series Analysis and Its Applications presents a balanced and comprehensive treatment of both time and frequency domain methods with accompanying theory. Numerous examples using non-trivial data illustrate solutions to problems such as discovering natural and anthropogenic climate change, evaluating pain perception experiments using functional magnetic resonance imaging, and monitoring a nuclear test ban treaty. The book is designed to be useful as a text for graduate level students in the physical, biological and social sciences and as a graduate level text in statistics. Some parts may also serve as an undergraduate introductory course. Theory and methodology are separated to allow presentations on different levels. In addition to coverage of classical methods of time series regression, ARIMA models, spectral analysis and state-space models, the text includes modern developments including categorical time series analysis, multivariate spectral...[...]

Features
Time Series Analysis and Its Applications presents a balanced and comprehensive treatment of both time and frequency domain methods with accompanying theory. Numerous examples using non-trivial data illustrate solutions to problems such as discovering natural and anthropogenic climate change, evaluating pain perception experiments using functional magnetic resonance imaging, and monitoring a nuclear test ban treaty. The book is designed to be useful as a text for graduate level...[...]

Contents
Characteristics of time series... Time series regression and exploratory data analysis... ARIMA models... Spectral analysis and filtering... Additional time domain topics... State-space models... Statistical methods in the frequency domain.

Fields of interest
Statistical Theory and Methods; Statistics for Life Sciences, Medicine, Health Sciences

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

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