Just Released New Books March 2011

English Titles

“Sorted by author and title within the main subject”
Antiviral RNAi

Concepts, Methods, and Applications

Viruses and RNAi share an intricate relationship at many levels. RNAi is an important antiviral defense mechanism in plants and invertebrates, microRNAs – of viral or cellular origin – affect many aspects of virus biology, and replication of many, if not all, mammalian viruses can be suppressed by RNAi.

Antiviral RNAi: Concepts, Methods, and Applications provides a collection of protocols for the analysis of viral small RNAs and natural antiviral RNAi responses as well as for the development and optimization of RNAi-based antiviral drugs. As RNAi is a central regulatory mechanism in the cell, the methods in this volume can also be applied out of the context of a virus infection. Divided into five convenient parts, this detailed volume reviews important basic concepts in the field of antiviral RNAi, provides experimental and bio-informatic tools for the analysis of small silencing RNAs, covers methods to biochemically dissect RNAi-based antiviral defense and viral counter-defense mechanisms.

Features

- Viruses and RNAi share an intricate relationship at many levels. RNAi is an important antiviral defense mechanism in plants and invertebrates, microRNAs – of viral or cellular origin – affect many aspects of virus biology, and replication of many, if not all, mammalian viruses can be suppressed by RNAi.
- Antiviral RNAi: Concepts, Methods, and Applications provides a collection of protocols for the analysis of viral small RNAs and natural antiviral RNAi responses as well as for the development and optimization of RNAi-based antiviral drugs. As RNAi is a central regulatory mechanism in the cell, the methods in this volume can also be applied out of the context of a virus infection. Divided into five convenient parts, this detailed volume reviews important basic concepts in the field of antiviral RNAi, provides experimental and bio-informatic tools for the analysis of small silencing RNAs, covers methods to biochemically dissect RNAi-based antiviral defense and viral counter-defense mechanisms.

Contents

Defense and counter-defense in the RNAi-based antiviral immune system in insects. - RNAi and cellular miRNAs in infections by mammalian viruses. - Viral miRNAs. - Progress in RNAi-based antiviral therapeutics. - Chemical modification of small interfering RNA. - Viral small RNA cloning and sequencing. - Visitor, an informatic pipeline for analysis of viral siRNA sequencing datasets. - Computational prediction of viral miRNAs. - Detection of Viral microRNAs by Northern Blot Analysis. - Detection of viral microRNA with S1 Nuclease Protection assay. - Characterization of RISC associated adenoviral...

Fields of interest

- Human Genetics; Virology

Target groups

- Professional/practitioner

Type of publication

Contributed volume

Available


109.95 €

Cancer Cytogenetics

Methods and Protocols

Cytogenetic studies of malignancy have become an essential tool in the clinical management of cancer patients. Cancer Cytogenetics: Methods and Protocols presents eminently practical key cytogenetic and FISH techniques for every stage of diagnostic service. Experts in the field describe detailed cytogenetic analysis methods, fluorescence in situ hybridization and array methods currently being applied to investigate and diagnose different varieties of cancer. Written in the highly successful Methods in Molecular Biology series format, chapters contain introductions to their respective topics, lists of the necessary materials and reagents, and step-by-step, readily reproducible laboratory protocols. The authors of the various chapters have also provided extensive notes to guide individuals who are new to these methods through the pitfalls that bedevil all such testing.Authoritative and accessible, Cancer Cytogenetics: Methods and Protocols serves as an ideal guide to scientists of all backgrounds.

Features

- Cytogenetic studies of malignancy have become an essential tool in the clinical management of cancer patients. Cancer Cytogenetics: Methods and Protocols presents eminently practical key cytogenetic and FISH techniques for every stage of diagnostic service. Experts in the field describe detailed cytogenetic analysis methods, fluorescence in situ hybridization and array methods.

Contents

Introduction. - Evolution of Cytogenetic Methods in the Study of Cancer. - Fluorescence In Situ Hybridization Methods and Troubleshooting. - Applied to Fixed Cell Suspensions. - Chronic Myeloid Leukemia: Cytogenetic Methods and Applications for Diagnosis and Treatment. - Cytogenetic Analysis in Acute Myeloid Leukemia. - Cytogenetics in Myelodysplastic Syndromes. - Cytogenetics of Myeloproliferative Disorders. - Acute Lymphoblastic Leukemia. - Cytogenetics Methods in Chronic Lymphocytic Leukemia (CLL). - Genetic Abnormalities in Non-Hodgkin’s Lymphoma as Revealed by Conventional and Molecular...

Fields of interest

- Cancer Research; Cytogenetics

Target groups

- Professional/practitioner

Type of publication

Contributed volume

Available


94.95 €
ISBN 978-1-61779-073-7

Cell Culture Techniques

Societal, ethical, and cost-related issues, not to mention the need for sound scientific methods, have led to new and refined methods for the evaluation of health risks associated with neurotoxic compounds, relevant and predictive of exposure, relatively inexpensive, and ideally amenable to high throughput analysis and a reduction in animal use. Cell Culture Techniques presents thorough traditional chapters, such as those on various cell culture methods that have evolved over the years, as well as innovative approaches to neurotoxicologic testing. Accordingly, this detailed volume describes how stem cells, computational biology, and other novel powerful methods can now be applied to address the challenges of neurotoxic testing. As part of the Neuromethods series, this work provides the kind of intensive description and implementation advice that is crucial for getting optimal results in the laboratory. Practical and authoritative, Cell Culture Techniques serves both the novice and the experienced.

Features

- Societal, ethical, and cost-related issues, not to mention the need for sound scientific methods, have led to new and refined methods for the evaluation of health risks associated with neurotoxic compounds, relevant and predictive of exposure, relatively inexpensive, and ideally amenable to high throughput analysis and a reduction in animal use. Cell Culture Techniques presents thorough traditional...

Contents

- Guidance on Good Cell Culture Practice (GCCP). - Induced Pluripotent Stem Cells (iPSCs): An Emerging Model System for the Study of Human Neurotoxicology. - Neural Stem Cells. - Primary Cultures for Neurotoxicity Testing. - Preparation and Use of Serum-Free Aggregating Brain Cell Cultures for Routine Neurotoxicity Screening. - Cell Culture to Investigate Neurotoxicity and Neurodegeneration Utilizing Caenorhabditis elegans. - Modeling the Blood-Brain Barrier. - In vitro Models of the Blood-Cerebrospinal Fluid Barrier and Their Use in Neurotoxicological Research. - Introducing Cloned Genes into...

Fields of interest

- Neurosciences; Neurochemistry

Target groups

- Professional/practitioner

Type of publication

Contributed volume

Available

2011. XIV, 497 p. 84 illus. (Neuromethods, Vol. 56) Hardcover

124.95 €
ISBN 978-1-61779-076-8
Cell Fusion in Health and Disease

I: Cell Fusion in Health

Although cell fusion is an omnipresent process in life, to date considerably less is still known about the mechanisms and the molecules being involved in this biological phenomenon in higher organisms. In Cell Fusion in Health and Disease Vol 1 & Vol 2 leading experts will present up-to-date overviews about cell fusion in physiological and pathological processes, which further covers the current knowledge about cell fusion-mediating molecules. Volume 1 deals with Cell Fusion in Health and will cover aspects of cell fusion in fertilization, placentaion, in C. elegans, in skeletal muscle development and tissue repair, and the use of cell fusion for cellular reprogramming and cancer vaccine development. Volume 2 focuses on Cell Fusion in Disease with a particular emphasis on the role of cell fusion in cancer development and progression. Thus, Cell Fusion in Health and Disease Vol 1 & Vol 2 represents a state-of-the-art work for researchers, physicians or professionals being interested in the...[]

Features

Although cell fusion is an omnipresent process in life, to date considerably less is still known about the mechanisms and the molecules being involved in this biological phenomenon in higher organisms. In Cell Fusion in Health and Disease Volume 1 international leading experts will present up-to-date overviews about the current knowledge about cell fusion-mediating molecules in C. elegans and mammalian...[ ]

Contents

Preface, Thomas Dittmar, Kurt S. Zänker; 1 Introduction, Thomas Dittmar, Kurt S. Zänker; 2 Heterochronic control of AFF-1-mediated cell-to-cell fusion in C. elegans, Liläch Friedlander-Shani, Benjamin Podbilewicz; 3 Role of SNAREs in membrane fusion, Bahnu P. Jena; 4 Molecular and cellular mechanisms of mammalian cell fusion, Xiaofeng Zhou, Jeffrey L. Platt; 5 Membrane fusions during mammalian fertilization, B.M. Gadella, Janice P. Evans; 6 Trophoblast fusion, Berthold Huppertz, Martin Gauster; 7 Macrophage fusion and multinoce-}
ed giant cells of inflammation, Amy K. McNally, James M. [...]

Fields of interest

Biomedicine (general); Cell Biology; Membrane Biology

Target groups

Research

Type of publication

Contributed volume

Available


139,95 €

ISBN 978-94-007-0762-7

Cellular Effects of Heavy Metals

The term “heavy metals” is used as a group name of toxic metals and metalloids (semimetal)s causing contaminations and ecotoxicity. In strict chemical sense the density of heavy metals is higher than 5 g/cm³. From biological point of view as microelements they can be divided into two major groups. a. For their physiological function organisms and cells require essential microelements such as iron, chromium (III), cobalt, copper, manganese, molybdenium, zinc. b. The other group of heavy met-
als is toxic to the health or environment. Of high-
est concern are the emissions of As, Cd, Co, Cu, Hg, Mn, Ni, Pb, Sn, Tl. The toxicity of heavy metals is well known at organizational level, while less attention has been paid to their cellular effects. This book describes the toxicity of heavy metals on microorganism,
isms, yeast, plant and animal cells. Other chapters of the book deal with their genotoxic, mutagenic and carcinogenic effects. The toxicity of several metals touch upon the aspects of environmental...[ ]

Features

The term “heavy metals” is used as a group name of toxic metals and metalloids (semimetal)s causing contaminations and ecotoxicity. In strict chemical sense the density of heavy metals is higher than 5 g/cm³. From biological point of view as microelements they can be divided into two major groups. a. For their physiological function organisms and cells require essential microelements such as iron, chromium...[ ]

Contents

Introduction. Chapter 1. Heavy Metals, Trace Ele-
ments, Adducts.- Chemical Carcinogenesis: Modulation by Botanical Natural Products. Heterocyclic Amines: Potential Human Carcinogens.- Alkylating and Hepatocellular Carcinoma.- Metabolic Activation of Chemical Carcinogens. - Detoxication of Chemical Carcinogens and Chemoprevention.- Covalent Polycyclic Aromatic Hydrocarbon-DNA Adducts, Carcinogenicity, Structure and Function.- Oxidation and Deamination of DNA by Endogenous Sources.- Lipid Peroxide-DNA Adducts. - Chemical...

Fields of interest

Biomedicine (general); Cell Biology; Oxidative Stress; Apoptosis; Ecotoxicology; Inorganic Chemistry

Type of publication

Contributed volume

Available

2011. XV, 348 p. Hardcover

149,95 €


Chemical Carcinogenesis

This volume will provide a contemporary account of advances in chemical carcinogenesis. It will promote the view that it is chemical alteration of the DNA that is a route cause of many cancers. The multi-
stage model of chemical carcinogenesis, exposure to major classes of human carcinogens and their mode-of-action will be a focal point. The balance between metabolic activation to form biological reactive intermediates and their detoxification, ensuring DNA lesions and their repair will be profiled. It will describe the chemical changes that occur in DNA that result from endogenous insults including epigenetic changes that lead to gene silencing. It will describe major mechanisms of mutagenesis, affects on tumor suppressor genes and proto-oncogenes, and how cell-cycle check points can be by-passed by the “stealth-like” properties of chemical carcinogens. Environmental agents that can promote tumor for-
mation will be discussed. The monograph will have wide appeal as a knowledge base for graduate...[ ]

Features

This monograph provides a contemporary account of advances in chemical carcinogenesis. It promotes the view that it is alteration of the DNA by endogenous and exogenous carcinogens that ultimately leads to sporadic mutations which are a root cause of many human cancers. It deals with the metabolic activation of common classes of chemical carci-
gen (tobacco carcinogens, heterocyclic amines, polycyclic...[ ]

Contents


Fields of interest

Cancer Research, Pharmacology / Toxicology

Target groups

Research

Type of publication

Contributed volume

Available

2011. XV, 440 p. Hardcover

139,95 €

Diabetes - Perspectives in Drug Therapy

The chapters of this book report cutting-edge research on molecular events in adiposity and type 2 diabetes, thus opening the way for innovative drug-based therapeutic strategies. It addresses all those who wish to keep in touch with recent developments in the field.

Features
Every 5 seconds someone somewhere is diagnosed with diabetes, and every 10 seconds someone dies of it. Even worse, worldwide incidence rates still inexorably escalate. Thus, it is pressing to envisage the extent of the diabetes problem and ensure synergistic approaches aiming in alleviation of its ghastly toll. The chapters of this book report cutting-edge research on molecular events in adiposity and type 2 diabetes. Inhibition of ganglioside biosynthesis as and its potential role in inflammation and type 2 diabetes. Inhibition of 11β-hydroxysteroid dehydrogenase type 1 in adipostic therapy, such as Chinese and English names, physical and international journals. A chemical structure with stereo-chemistry bonds is provided for each chemical component, in addition to conventional information, such as Chinese and English names, physical and chemical properties. It includes a name list of medicinal plants from which the chemical component was isolated. Furthermore, abundant pharmacological data for nearly 8,000 chemical components are presented, including experimental method, experimental animal, cell type, quantitative data, as well as control compound data. The seven indexes allow for complete cross-indexing. Regardless whether one searches for the molecular formula of a compound, the pharmacological activity of a compound, or the English name of a plant, the information in the book can be retrieved in multiple ways.

Contents
High-Throughput Next Generation Sequencing

Methods and Applications

Due to their novel concepts and extraordinary high-throughput sequencing capacity, the "next generation sequencing" methods allow scientists to grasp system-wide landscapes of the complex molecular events taking place in various biological systems, including microorganisms and microbial communities. These methods are now being recognized as essential tools for a more comprehensive and deeper understanding of the mechanisms underlying many biological processes. In High-Throughput Next Generation Sequencing: Methods and Applications, experts in the field explore the most recent advances in the applications of next generation sequencing technologies with an emphasis on microorganisms and their communities; however, the methods described in this book will also offer general applications relevant to the study of any living organisms. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials, etc.

Features

Due to their novel concepts and extraordinary high-throughput sequencing capacity, the "next generation sequencing" methods allow scientists to grasp system-wide landscapes of the complex molecular events taking place in various biological systems, including microorganisms and microbial communities. These methods are now being recognized as essential tools for a more comprehensive and deeper understanding, etc.

Contents


Fields of interest

Human Genetics; Microbial Genetics and Genomics; Gene Expression

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available


149,95 € ISBN 978-94-007-0291-2

Liver Metastasis: Biology and Clinical Management

Liver metastases are a frequent and often fatal occurrence in cancer patients, particularly those with malignancies of the gastrointestinal (GI) tract. While recent improvements in surgical techniques and a more aggressive approach to resection of liver metastases have improved long term survival for some patients, most patients with hepatic metastases still succumb to their disease. To improve these dismal statistics, a better understanding of the biology of liver metastasis, particularly the early stages that can be targeted for prevention, is essential. Once cancer cells enter the liver, several different scenarios may occur. The cancer cells may be immediately destroyed by local defence mechanisms, they may enter a state of dormancy as solitary cells and never produce a metastasis, initiate a short-lived process of proliferation that is aborted before a metastasis is established or actively proliferate to form macro metastases. The chapters in Part I of this book provide insight into the...
Molecular Determinants of Radiation Response

Molecular Determinants of Radiation Response includes chapters by expert authors who detail the present understanding of key DNA damage response pathways and proteins. The chapters include comprehensive discussions on where and how specific alterations in function of these pathways and proteins result in substantive modifications of cellular response to DNA injury. Given the importance of therapies that induce DNA injury in the management of human disease, this book is timely and relevant for basic and translational researchers, as well as clinicians alike.

Contents
Molecular Basis of the DNA Damage Responses.- ATM signaling and DNA Damage.- H2AX in DNA Damage Response.- Dynamic Imaging of DNA Damage Foci.- DNA Damage Signaling Downstream of ATM: Checkpoint Control and Radiation.- Chromatin Responses to DNA Damage.- DNA Damage Response and Senescence.- C. elegans and DNA Damage.- Modulation of Radiation Responses - Opportunities for Therapeutic Exploitation.- The Stem Cell and Radiation.- Role of the Cell Membrane in Signaling Radiation Injury.- Hypoxia and Modulation of Cellular Radiation Response.- Role of PARP and PARP Inhibition in Cellular...[

Features
The DNA of mammalian cells is constantly under assault from both endogenous and exogenous sources. Ionizing radiation is one of the most important sources of genomic injury because of its ability to inflict substantial cellular damage that is both therapeutic as well as mutagenic. Mammalian cells have evolved an impressive array of DNA damage response mechanisms that are called upon to respond to and [...]
Supramolecular Structure and Function 10

The book is based on lectures presented on the International Summer School on Biophysics held in Croatia in September 2009. The advantage of the School is that it provides advanced training in very broad scope of areas related to biophysics contrary to other similar schools or workshops that are centered mainly on one topic or technique. In this volume, tenth in the row, the papers in the field of biophysics are presented. The topics are biological phenomena from single protein to macromolecular aggregations structure by using variant physical methods (NMR, EPR, FTIR, Mass Spectrometry, etc.). The interrelationship of supramolecular structures and their functions is enlightened by applications of principals of these physical methods in the biological and molecular biology context.

Features
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Contents

Fields of interest
Biomedicine (general); Life Sciences (general); Biophysics and Biological Physics; Spectroscopy and Microscopy; Bioinformatics; Cancer Research

Target groups
Research

Type of publication
Proceedings

Available
139,95 €
ISBN 978-94-007-0892-1

The Myelodysplastic Syndromes

Myelodysplastic syndromes (MDS) are the most common hematological malignancies involving mostly the elderly population. The major morbidity relates to patients’ symptomatic cytopenias. MDS was previously named as “preleukemia” or “smoldering leukemia” as the lack of terminal cells in MDS and because about 25% of all cases progresses into acute myeloid leukemia. According to various reports the annual incidence of MDS ranges widely from 2-12 per 100,000, increasing to 30-50 cases per 100,000 among persons aged 70 or older. It is believed that the true incidence of MDS have been underestimated however it seems to be comparable to that for multiple myeloma and chronic lymphocytic leukemia. In the past decade much progress had been made; we know more on the disease pathology, there is more emphasis on the care and more targeted therapy had been invested. Authors provide updated knowledge in this book on all clinically important aspects of the disease. Hot topics of our days are discussed in chapters[...]

Features
Myelodysplastic syndromes (MDS) are the most common hematological malignancies involving mostly the elderly population. The major morbidity relates to patients’ symptomatic cytopenias. MDS was previously named as “preleukemia” or “smoldering leukemia” as the lack of terminal cells in MDS and because about 25% of all cases progresses into acute myeloid leukemia. According to various reports the [...] 

Contents

Fields of interest
Biomedicine (general); Hematology; Medicine (general)

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XIII, 286 p. Hardcover
169,95 €
ISBN 978-94-007-0343-8

Tumors of the Central Nervous System, Volume 1

Gliomas: Glioblastoma (Part 1)

The most recent developments in diagnostic and therapeutic aspects of gliomas (Glioblastoma) in the brain are presented. The importance of personalized medicine and clinical validation for targeted therapy are discussed. The identification of various types of biomarkers is included. The identification and validation of brain cancer (glioblastoma) genes are discussed. Role of cancer stem cells in the initiation, progression, and persistence of malignant gliomas is explained. The use of surgical resection, chemotherapy (e.g., temozolomide), immunotherapy, and radiotherapy for malignant glioblastoma are pointed out. Standard (established) as well as newer imaging modalities (proton magnetic resonance spectroscopy) are discussed.

Features
The most recent developments in diagnostic and therapeutic aspects of gliomas (Glioblastoma) in the brain are presented. The importance of personalized medicine and clinical validation for targeted therapy are discussed. The identification of various types of biomarkers is included. The identification and validation of brain cancer (glioblastoma) genes are discussed. Role of cancer stem cells in the [...] 

Contents
Introduction. 1. introduction. 2. molecular classification of gliomas. i.biomarkers and diagnosis. 3. glioblastoma: endosialin marker for precytes. 4. glioma grading using cerebral blood volume heterogeneity. 5. the role of ectonucleotidases in glioma cell proliferation. 6. gliomas: role of monoamine oxidase in diagnosis. 7. role of integrin in pathogenesis and therapy. 8. proton magnetic resonance spectroscopy intracranial

Fields of interest
Cancer Research; Neuroradiology; Neurosurgery; Oncology; Pathology; Surgery

Target groups
Research

Type of publication
Contributed volume

Available
149,95 €
ISBN 978-94-007-0343-8
## CDNA Libraries

**Methods and Applications**

The numerous vital applications of complementary DNA (cDNA) technology have changed dramatically as the technology has advanced over recent years. In CDNA Libraries: Methods and Protocols, expert researchers provide current techniques that reflect the latest advances in the construction and application of CDNA libraries. The first half of the volume covers improved approaches to some of the most basic elements of creating CDNA libraries, while the second half casts a much wider net and includes vision applications of CDNA technology which were either unforeseen or technically impractical until recently. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and cutting-edge, CDNA Libraries: Methods and Protocols serves as an ideal guide...[1]

### Features

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### Contents


### Fields of interest

- Human Genetics
- Gene Expression

### Target groups

- Professional/practitioner

### Type of publication

- Contributed volume

### Available


94,95 €

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## Agile Business Rule Development

**Process, Architecture, and JRules Examples**

Business rules are everywhere. Every enterprise process, task, activity, or function is governed by rules. However, some of these rules are implicit and thus poorly enforced, others are written but not enforced, and still others are perhaps poorly written and obscurely enforced. The business rule approach looks for ways to elicit, communicate, and manage business rules in a way that all stakeholders can understand, and to enforce them within the IT infrastructure in a way that supports their traceability and facilitates their maintenance. Boyer and Mili will help you to adopt the business rules approach effectively. While most business rule development methodologies put a heavy emphasis on up-front business modeling and analysis, agile business rule development (ABRD) introduced in this book is incremental, iterative, and test-driven. Rather than spending weeks discovering and analyzing rules for a complete business function, ABRD puts the emphasis on producing executable, tested rule sets early...[4]

### Features

Business rules are everywhere. Every enterprise process, task, activity, or function is governed by rules. However, some of these rules are implicit and thus poorly enforced, others are written but not enforced, and still others are perhaps poorly written and obscurely enforced. The business rule approach looks for ways to elicit, communicate, and manage business rules in a way that all stakeholders can...[5]

### Contents


### Fields of interest

- Economic Theory
- Socio- and Econophysics
- Population and Evolutionary Models
- Ethics

### Target groups

- Professional/practitioner

### Type of publication

- Contributed volume

### Available

2011. XIII, 272 p. 98 illus. Hardcover

99,95 €
ISBN 978-3-7908-2617-3

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## Complexities of Production and Interacting Human Behaviour

As the real world is rapidly becoming more and more complicated, economists need to venture beyond the boundaries of mainstream economics and integrate philosophical thought and complexity into their analytical frameworks. In this context, this volume brings together papers on economic theory and its related issues, exploring complex production systems and heterogeneously interacting human behavior. The author challenges economists to integrate economic theory and moral science anew by referring to evolutionary economics and socio-econophysics. The three parts of the book focus on the complexities of production and social interaction, the moral science of heterogeneous economic interaction, and the Avatamsaka’s dilemma of the two-person game with only positive spillovers.

### Features

As the real world is rapidly becoming more and more complicated, economists need to venture beyond the boundaries of mainstream economics and integrate philosophical thought and complexity into their analytical frameworks. In this context, this volume brings together papers on economic theory and its related issues, exploring complex production systems and heterogeneously interacting human behavior. The author...[6]

### Contents


### Fields of interest

- Economic Theory
- Socio- and Econophysics
- Population and Evolutionary Models
- Ethics

### Target groups

- Research

### Type of publication

- Contributed volume

### Available

2011. XII, 272 p. 98 illus. Hardcover

99,95 €
ISBN 978-3-7908-2617-3
Computational Methods in Economic Dynamics

This volume is centered around the issue of market design and resulting market dynamics. The economic crisis of 2007–2009 has once again highlighted the importance of a proper design of market protocols and institutional details for economic dynamics and macroeconomics. Papers in this volume capture institutional details of particular markets, behavioral details of agents' decision making as well as spillovers between markets and effects to the macroeconomy. Computational methods are used to replicate and understand market dynamics emerging from interaction of heterogeneous agents, and to develop models that have predictive power for complex market dynamics. Finally treatments of overlapping generations models and differential games with heterogeneous actors are provided.

Features
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Enterprise Information Systems

12th International Conference, ICEIS 2010, Funchal-Madeira, Portugal, June 8-12, 2010, Revised Selected Papers

This book contains substantially extended and revised versions of the best papers from the 12th International Conference on Enterprise Information Systems (ICEIS 2010), held in Funchal, Madeira, Portugal, June 8-12, 2010. Two invited papers are presented together with 39 contributions, which were carefully reviewed and selected from 62 full papers presented at the conference (out of 448 submissions). They reflect state-of-the-art research work that is often driven by real-world applications, thus successfully relating the academic with the industrial community. The topics covered are: databases and information systems integration, artificial intelligence and decision support systems, information systems analysis and specification, software agents and internet computing, and human-computer interaction.

Features
This book contains substantially extended and revised versions of the best papers from the 12th International Conference on Enterprise Information Systems (ICEIS 2010), held in Funchal, Madeira, Portugal, June 8-12, 2010. Two invited papers are presented together with 39 contributions, which were carefully reviewed and selected from 62 full papers presented at the conference (out of 448 submissions). […]

Fields of interest
Business & Economics (general); Information Systems Applications (incl. Internet); Artificial Intelligence (incl. Robotics); User Interfaces and Human Computer Interaction

Target groups
Research

Type of publication
Proceedings

Available
79,00 €
ISBN 978-3-642-19801-4

Enterprise Interoperability


This book constitutes the proceedings of the Third International IFIP Working Conference on Enterprise Interoperability (IWEI 2011), held in Stockholm, Sweden, March 23-24, 2011. The special theme chosen for IWEI 2011 was “Interoperability and Future Internet for Next-Generation Enterprises”. Thus special attention was given to how the interoperability needs of enterprises will be shaped and supported by the emerging Future Internet. The 15 papers presented in this volume were carefully selected from 47 submissions, based on a thorough reviewing process in which each paper was scrutinized by at least three experts in the field. The papers cover a wide spectrum of enterprise interoperability issues, ranging from foundational theories, frameworks, architectures, methods and guidelines to applications and case studies. This volume also includes the abstracts of the two invited talks on challenges for future networked enterprise systems.

Features
This book constitutes the proceedings of the Third International IFIP Working Conference on Enterprise Interoperability (IWEI 2011), held in Stockholm, Sweden, March 23-24, 2011. The special theme chosen for IWEI 2011 was “Interoperability and Future Internet for Next-Generation Enterprises”. Thus special attention was given to how the interoperability needs of enterprises will be shaped and […]

Fields of interest
Business & Economics (general); Computer Appl. in Administrative Data Processing; Information Systems Applications (incl. Internet); Software Engineering

Target groups
Research

Type of publication
Proceedings

Available
60,00 €
ISBN 978-3-642-19679-9

Essence of a Manager

What makes a “good” manager? This is a book by a manager about managers but it is not just for managers. It is for anyone and for everyone who is interested in the way people – and not just managers - behave and function around the world. Based on actual experience the title “Essence of a Manager” is a succinct distillation of what this book is about. It is not a management manual and yet it is a map for navigating and a guide for behavior which can be valuable for practicing managers at all levels. It formulates a sound thesis to describe the qualities needed in a “good” manager and builds up from elementary qualities to develop a holistic view of a good manager. Nine fundamental attributes are proposed as being necessary and sufficient to describe a “good” manager. It is applied management philosophy for a thinking manager and deals with the fundamental drivers which lie deeper than language or culture and which control human behavior.

Features
What makes a “good” manager? This is a book by a manager about managers but it is not just for managers. It is for anyone and for everyone who is interested in the way people – and not just managers - behave and function around the world. Based on actual experience the title “Essence of a Manager” is a succinct distillation of what this book is about. It is not a management manual and yet it is a map for […]

Contents

Fields of interest
Management/ Business for Professionals; Personnel Management; Business & Economics (general)

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XVI, 175 p. Hardcover
89,95 €
ISBN 978-3-642-17580-0

K. Pillai, Finspang, Sweden
Guide to Supply Chain Management

This guide brings supply chain theory to life. Written for people with a business interest in supply chain management, the book covers the key topics in eleven chapters, including plan, source, make, deliver and return as well as strategy, people, finance, customer service and outsourcing. Each chapter starts with a brief summary and learning objectives that guide the reader through the text. The book is written in a clear and simple way, featuring a variety of figures, tables and recommended further readings. The chapters conclude with real-life case studies for best practice. During their work, the authors have met professionals all over the world who are passionate about their business achievements. By including their vivid examples, the guide brings theory to life enabling readers to understand the concepts and ideas presented in the guide. Colin Scott, Henriette Lundgren and Paul Thompson are experts in supply chain management and have worked with practitioners in businesses across the globe.[…]

Features
This guide brings supply chain theory to life. Written for people with a business interest in supply chain management, the book covers the key topics in eleven chapters, including plan, source, make, deliver and return as well as strategy, people, finance, customer service and outsourcing. Each chapter starts with a brief summary and learning objectives that guide the reader through the text. The book is […]

Contents

Fields of interest
Production / Logistics; Management / Business for Professionals; Procurement; Business Information Systems; Marketing; Organization / Planning

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XVIII, 189 p. 85 illus. Hardcover
49,95 €
ISBN 978-3-642-19362-0

Handbook of Terminal Planning

Container Terminals (CT) operate as central nodes in worldwide hub-and-spoke networks and link ocean-going vessels with smaller feeder vessels as well as with inbound and outbound hinterland transportation systems using road, rail, or inland waterways. The volume of transcontinental container flows has gained appreciably over the last five decades -- throughput figures of CT reached new records, frequently with double-digit annual growth rates. Stimulated by throughput requirements and stronger competition between terminals settled in the same region or serving a similar hinterland, respectively, cost efficiency and throughput capabilities become more and more important. Nowadays, both terminal capacity and costs have to be regarded as key indicators for CT competitiveness. In respect of this steady growth, this handbook focuses on planning activities being aimed at “order of magnitude improvements” in terminal performance and economic viability. On the one hand the book is intended to provide […]

Features
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Contents

Fields of interest
Operation Research / Decision Theory; Production / Logistics; Regional Science; Appl. Mathematics / Computational Methods of Engineering

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
39,95 €
ISBN 978-3-642-17675-3

In-Memory Data Management

An Inflection Point for Enterprise Applications

In the last 50 years the world has been completely transformed through the use of IT. We have now reached a new inflection point. Here we present, for the first time, how in-memory computing is changing the way businesses are run. Today, enterprise data is split into separate databases for performance reasons. Analytical data resides in warehouses, synchronized periodically with transactional systems. This separation makes flexible, real-time reporting on current data impossible. Multi-core CPUs, large main memories, cloud computing and powerful mobile devices are serving as the foundation for the transition of enterprises away from this restrictive model. We describe techniques that allow analytical and transactional processing at the speed of thought and enable new ways of doing business. The book is intended for university students, IT professionals and IT-managers, but also for senior management who wish to create new business processes by leveraging in-memory computing.

Features
In the last 50 years the world has been completely transformed through the use of IT. We have now reached a new inflection point. Here we present, for the first time, how in-memory computing is changing the way businesses are run. Today, enterprise data is split into separate databases for performance reasons. Analytical data resides in warehouses, synchronized periodically with transactional systems. This […]

Contents
Foreword by Prof. John L. Hennessy (Stanford University, California, USA) and Prof. David A. Patterson (University of California at Berkeley, USA). - Preface. – Introduction. – PART I – An Inflation Point for Enterprise Applications. – 1 Desirability, Feasibility, Viability – The Impact of In-Memory. – 2 Why Are Enterprise Applications So Diverse? – 3 SanssouciDB – Blueprint for an In-Memory Enterprise Database System. – PART II – SanssouciDB – A Single Source of Truth through In-Memory. – 4 The Technical Foundations of SanssouciDB. – 5 Organizing and Accessing Data in […]

Fields of interest
Business Information Systems; Management of Computing and Information Systems; Computer Hardware; Computer Imaging, Vision, Pattern Recognition and Graphics; Appl. Mathematics / Computational Methods of Engineering

Target groups
Upper undergraduate

Type of publication
Monograph

Available
2011. XVIII, 236 p. 75 illus. Hardcover
39,95 €
ISBN 978-3-642-19362-0
Mineral Resources Science and Technology in China: A Roadmap to 2050

As one of the eighteen field-specific reports comprising the comprehensive scope of the strategic general report of the Chinese Academy of Sciences, this sub-report addresses long-range planning for developing science and technology in the field of mineral resources science. They each craft a roadmap for their sphere of development to 2050. In their entirety, the general and sub-group reports analyze the evolution and laws governing the development of science and technology, describe the decisive impact of science and technology on the modernization process, predict that the world is on the eve of an impending S&T revolution, and call for China to be fully prepared for this new round of S&T advancement. Based on the detailed study of the demands on S&T innovation in China’s modernization, the reports draw a framework for eight basic and strategic systems of socio-economic development with the support of science and technology, work out China’s S&T roadmaps for the relevant eight basic and strategic systems.

Contents
Situation of Mineral Resources in China. - Roadmap for the Development of Science & Technology until 2050. - Policies Required to Attain Objectives. - Conclusion. - Fields of interest - Research - Type of publication Monograph - Available

2011. Approx. 85 p. 22 illus. in color. Softcover
69,95 €
ISBN 978-3-642-05343-6

Oil and Gas Resources in China: A Roadmap to 2050

As one of the eighteen field-specific reports comprising the comprehensive scope of the strategic general report of the Chinese Academy of Sciences, this sub-report addresses long-range planning for developing science and technology in the field of oil and gas resources. They each craft a roadmap for their sphere of development to 2050. In their entirety, the general and sub-group reports analyze the evolution and laws governing the development of science and technology, describe the decisive impact of science and technology on the modernization process, predict that the world is on the eve of an impending S&T revolution, and call for China to be fully prepared for this new round of S&T advancement. Based on the detailed study of the demands on S&T innovation in China’s modernization, the reports draw a framework for eight basic and strategic systems of socio-economic development with the support of science and technology, work out China’s S&T roadmaps for the relevant eight basic and strategic systems.

Features
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Contents

Fields of interest - Research - Type of publication Monograph - Available

2011. XXIV, 111 p. 17 illus. in color. Softcover
69,95 €
ISBN 978-3-642-13903-1

Planning Production and Inventories in the Extended Enterprise

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.

Contents

Fields of interest - Research - Type of publication Monograph - Available

2011. Approx. 320 p. 44 illus. in color. Softcover
69,95 €
ISBN 978-3-642-05343-6

Target groups - Professional/practitioner
What are the random-like phenomena that can be found everywhere in real-life world? When carrying out a random sampling survey on the traffic situation, we often obtain some descriptive results such as approximately expedite, a little crowded and so on, therefore, the average level should be regarded as the random fuzzy phenomenon, which is one of the random-like phenomena. Decision makers usually need to make the decision for these problems with random-like phenomena. Which model should be constructed for them? How should we handle these models to find the optimal strategy? How can we apply these models to solve real-life problems with random-like phenomena? In order to answer these questions, this book provides an up-to-date methodology system 5MRP for random-like multiple objective decision making, which includes problem system with random-like phenomena, model system with random-like coefficients, research system with random-like uncertain methods. Some practical applications are also provided.

Features
What are the random-like phenomena that can be found everywhere in real-life world? When carrying out a random sampling survey on the traffic situation, we often obtain some descriptive results such as approximately expedite, a little crowded and so on, therefore, the average level should be regarded as the random fuzzy phenomenon, which is one of the random-like phenomena. Decision makers usually need to [..]

Contents

Fields of interest
Operation Research / Decision Theory; Operations Research, Mathematical Programming

Target groups
Research

Type of publication
Monograph

Available

69,95 €
ISBN 978-3-642-13994-9
Supply Chain Finance Solutions

The book “Supply Chain Finance Solutions” offers orientation in the new discipline of Supply Chain Finance (SCF) by investigating the need for and nature of SCF, along with its characteristics and enablers. Due to the novelty of the Supply Chain Finance approach, there are still many knowledge gaps. This lack of research leads to uncertainties about the successful implementation of SCF solutions within companies as there is little quantified evidence on the achievable cost savings and other potential benefits. The authors close this gap by providing the latest information on business concepts and the SCF market. Based on a sample SCF model, the worldwide market size for such solutions and potential cost savings to companies engaged in SCF are analyzed. The work underlines the generally agreed-upon attractiveness and future relevance of SCF solutions by creating win-win situations; for all actors in the end-to-end supply chain as well as for external service providers.

Features

The book “Supply Chain Finance Solutions” offers orientation in the new discipline of Supply Chain Finance (SCF) by investigating the need for and nature of SCF, along with its characteristics and enablers. Due to the novelty of the Supply Chain Finance approach, there are still many knowledge gaps. This lack of research leads to uncertainties about the successful implementation of SCF solutions within [...]
Advanced Fluorescence Reporters in Chemistry and Biology III

**Applications in Sensing and Imaging**

The key element of any fluorescence sensing or imaging technology is the fluorescence reporter, which transforms the information on molecular interactions and dynamics into measurable signals of fluorescence emission. This book, written by a team of frontline researchers, demonstrates the broad field of applications of fluorescence reporters, starting from nanoscopic properties of materials, such as self-assembled thin films, polymers and ionic liquids, through biological macromolecules and further to living cell, tissue and body imaging. Basic information on obtaining and interpreting experimental data is presented and recent progress in these practically important areas is highlighted. The book is addressed to a broad interdisciplinary audience.

**Features**
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Catalytic Microreactors for Portable Power Generation

"Catalytic Microreactors for Portable Power Generation" addresses a problem of high relevance and increased complexity in energy technology. This thesis outlines an investigation into catalytic and gas-phase combustion characteristics in channel-flow, platinum-coated microreactors. The emphasis of the study is on microreactor/microturbine concepts for portable power generation and the fuels of interest are methane and propane. The author carefully describes numerical and experimental techniques, providing a new insight into the complex interactions between chemical kinetics and molecular transport processes, as well as giving the first detailed report of hetero-/homogeneous chemical reaction mechanisms for catalytic propane combustion. The outcome of this work will be widely applied to the industrial design of micro- and mesoscale combustors.

Features
"Catalytic Microreactors for Portable Power Generation" addresses a problem of high relevance and increased complexity in energy technology. This thesis outlines an investigation into catalytic and gas-phase combustion characteristics in channel-flow, platinum-coated microreactors. The emphasis of the study is on microreactor/microturbine concepts for portable power generation and the fuels of interest are [...]
Aerosols play a critical role in a broad range of scientific disciplines, such as atmospheric chemistry and physics, combustion science, drug delivery and human health. This thesis explores the fundamentals of a new technique for capturing single or multiple particles using light, and for characterising these particles by Raman or fluorescence spectroscopy. The outcome of this research represents a significant development in optical manipulation techniques, specifically in optical tweezing. These findings can be applied to studies of the mass accommodation of gas-phase water molecules adsorbing onto a water surface. Not only is this a fundamental process of interest to physical chemists, but it is important for understanding the role of aerosol particles in the atmosphere, including their ability to become cloud droplets. This new strategy for investigating aerosol dynamics is fundamental in helping us understand the indirect effect of aerosols on the climate.

### Features
Aerosols play a critical role in a broad range of scientific disciplines, such as atmospheric chemistry and physics, combustion science, drug delivery and human health. This thesis explores the fundamentals of a new technique for capturing single or multiple particles using light, and for characterising these particles by Raman or fluorescence spectroscopy. The outcome of this research represents a significant development in optical manipulation techniques, specifically in optical tweezing. These findings can be applied to studies of the mass accommodation of gas-phase water molecules adsorbing onto a water surface. Not only is this a fundamental process of interest to physical chemists, but it is important for understanding the role of aerosol particles in the atmosphere, including their ability to become cloud droplets. This new strategy for investigating aerosol dynamics is fundamental in helping us understand the indirect effect of aerosols on the climate.

### Contents
1. Introduction
2. Optical Tweezing
3. Aerosol Mass Transfer
4. Spectroscopy of Optically-Tweezed Aerosol Droplets
5. Summary

### Fields of interest
- Physical Chemistry
- Geophysics and Environmental Physics
- Climate Change

### Target groups
Research

### Type of publication
Monograph

### Available
2011. XII, 204 p. 170 illus., 54 in color. (Springer Theses) Hardcover
99,95 €
ISBN 978-3-642-16347-0
**Computer Science**

A. Dobnikar, University of Ljubljana, Slovenia; U. Lotrič, University of Ljubljana, Slovenia; B. Šter, University of Ljubljana, Slovenia (Eds.)

**Adaptive and Natural Computing Algorithms**

10th International Conference, ICANNGA 2011, Ljubljana, Slovenia, April 14-16, 2011, Proceedings, Part II

The two-volume set LNCS 6593 and 6594 constitutes the refereed proceedings of the 10th International Conference on Adaptive and Natural Computing Algorithms, ICANNGA 2010, held in Ljubljana, Slovenia, in April 2010. The 83 revised full papers presented were carefully reviewed and selected from a total of 144 submissions. The second volume includes 41 papers organized in topical sections on pattern recognition and learning, soft computing, systems theory, support vector machines, and bioinformatics.

**Features**

Computation by Abstract Devices; Algorithm Analysis and Problem Complexity; Software Engineering / Programming and Operating Systems; Programming Techniques; Computer Imaging, Vision, Pattern Recognition and Graphics; Artificial Intelligence (incl. Robotics)

**Target groups**

Research

**Type of publication**

Proceedings

**Available**


62.00 €

ISBN 978-3-642-20266-7

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**The Boundary Theory of Phase Diagrams and Its Application**

Rules for Phase Diagram Construction with Phase Regions and Their Boundaries

The Boundary Theory of Phase Diagrams and Its Application presents a novel theory of phase diagrams. Thoroughly revised on the basis of the Chinese edition and rigorously reviewed, this book probes the general feature and structure of phase diagrams, and reveals that there exist actually two categories of boundaries. This innovative boundary theory has solved many difficulties in understanding phase diagrams, and also finds its application in constructing multi-component phase diagrams or in calculating high-pressure phase diagrams. Researchers and engineers as well as graduate students in the areas of chemistry, metallurgy and materials science will benefit from this book. Prof. Muyu Zhao was the recipient of the 1998 Prize for Progress in Science and Technology (for his work on the boundary theory of phase diagrams) awarded by the National Commission of Education, China, and many other prizes.

**Features**

The Boundary Theory of Phase Diagrams and Its Application - Rules for Phase Diagram Construction with Phase Regions and Their Boundaries presents a novel theory of phase diagrams. Thoroughly revised on the basis of the Chinese edition and rigorously reviewed, this book probes the general feature and structure of phase diagrams, and reveals that there exist actually two categories of boundaries. This [...]
Agent-Oriented Software Engineering X

10th International Workshop, AOSE 2009, Budapest, Hungary, May 11-12, 2009, Revised Selected Papers

This volume constitutes the thoroughly refereed post-conference proceedings of the 10th International Workshop on Agent-Oriented Software Engineering, AOSE 2009, held in Budapest, Hungary, in May 2009 as part of AAMAS 2009, the 8th International Conference on Autonomous Agents and Multiagent Systems. The 10 revised full papers presented were carefully selected from numerous initial submissions during two rounds of reviewing and improvement. The papers have been organized into three sections on multi-agent organizations, concrete development techniques, and - one step higher - going beyond the concrete technique and proposing a development method for designing concrete types of systems. This state-of-the-art survey is rounded off by five additional lectures addressing key areas in development: agent-oriented modelling languages, implementation of MAS, testing of MAS, software processes, and formal methods for the development of MAS. They permit analysis of the current state in the generation of [...] features. This volume constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Agents and Artificial Intelligence, ICAART 2010, held in Valencia, Spain, in January 2010. The 17 revised full papers presented together with an invited paper were carefully reviewed and selected from 364 submissions. Same as the conference the papers are organized in two simultaneous tracks: Artificial Intelligence and Agents. The selected papers reflect the interdisciplinary nature of the conference. The diversity of topics is an important feature of this conference, enabling an overall perception of several important scientific and technological trends.

Features
This book constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Agents and Artificial Intelligence, ICAART 2010, held in Valencia, Spain, in January 2010. The 17 revised full papers presented together with an invited paper were carefully reviewed and selected from 364 submissions. Same as the conference the papers are organized in two simultaneous [...] features. This book constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Agents and Artificial Intelligence, ICAART 2010, held in Valencia, Spain, in January 2010. The 17 revised full papers presented together with an invited paper were carefully reviewed and selected from 364 submissions. Same as the conference the papers are organized in two simultaneous [...] features. 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Analysis for Computer Scientists

Foundations, Methods, and Algorithms

This textbook presents an algorithmic approach to mathematical analysis, with a focus on modelling and on the applications of analysis. Fully integrating mathematical software into the text as an important component of analysis, the book makes thorough use of examples and explanations using MATLAB, Maple, and Java applets. Mathematical theory is described alongside the basic concepts and methods of numerical analysis, supported by computer experiments and programming exercises, and an extensive use of figure illustrations. Features: thoroughly describes the essential concepts of analysis; provides summaries and exercises in each chapter, as well as computer experiments; discusses important applications of advanced topics; presents tools from vector and matrix algebra in the appendices, together with further information on continuity; includes definitions, propositions and examples throughout the text; supplementary software can be downloaded from the book’s webpage.

Contents

- Numbers.
- Real-Valued Functions.
- Trigonometry.
- Complex Numbers.
- Sequences and Series.
- Limits and Continuity of Functions.
- The Derivative of a Function.
- Applications of the Derivative.
- Fractals and L-Systems.
- Antiderivatives.
- Definite Integrals.
- Taylor Series.
- Numerical Integration.
- Curves.
- Scalar-Valued Functions of Two Variables.
- Vector-Valued Functions of Two Variables.
- Integration of Functions of Two Variables.
- Linear Regression.
- Differential Equations.
- Systems of Differential Equations.
- Numerical Solution of Differential Equations.

Fields of interest

Mathematical Applications in Computer Science; Computational Mathematics and Numerical Analysis; Appl. Mathematics / Computational Methods of Engineering; Discrete Mathematics in Computer Science

Target groups

Upper undergraduate

Type of publication

Undergraduate textbook

Available

2011. 341 p. (Undergraduate Topics in Computer Science, Vol.) Softcover

34,95 €

Change Management for Semantic Web Services

This book constitutes the thoroughly refereed proceedings of the COST 2101 International Workshop, BIOID 2011, held in Brandenburg (Havel), Germany, in March 2011. The 25 revised full papers presented were carefully reviewed and selected from numerous submissions and are completed by an introduction on COST. The papers are organized in topical main sections on theory and systems, handwriting authentication, speaker authentication, face recognition, multimodal authentication, and on biometrics and forensics.

Features

This book constitutes the thoroughly refereed proceedings of the COST 2101 International Workshop, BIOID 2011, held in Brandenburg (Havel), Germany, in March 2011. The 25 revised full papers presented were carefully reviewed and selected from numerous submissions and are completed by an introduction on COST. The papers are organized in topical main sections on theory and systems, handwriting authentication, speaker authentication, face recognition, multimodal authentication, and on biometrics and forensics.

Contents

- Introduction.
- Semantic Support for Change Management.
- A Supporting Infrastructure of a LCS.
- Top-down Change Language.
- Top-down Change Enactment and Change Optimization.
- Bottom-up Change Specification and Change Model.
- Bottom-up Change Management.
- Performance Study.
- Conclusion.
- References

Fields of interest

- Biometrics; Pattern Recognition; Computer Imaging.
- Vision; Pattern Recognition and Graphics.
- Image Processing and Computer Vision.
- Information Storage and Retrieval.
- Artificial Intelligence (incl. Robotics)

Target groups

Professional/practitioner

Type of publication

Proceedings

Available


54,00 €
ISBN 978-3-642-19529-7

Information Systems Applications (incl.Internet).
- Database Management.
- Information Systems and Communication Service.
- Information Storage and Retrieval.
- Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Monograph

Available


79,95 €
ISBN 978-1-4419-9328-1
Combinatorial Algorithms


This book constitutes the thoroughly refereed post-proceedings of the 21st International Workshop on Combinatorial Algorithms, IWOCA 2010, held in London, UK, in July 2010. The 31 revised full papers presented together with abstracts of 8 poster presentations were carefully reviewed and selected from a total of 85 submissions. A broad variety of combinatorial graph algorithms for the computations of various graph features are presented; also algorithms for network computation, approximation, computational geometry, games, and search are presented and complexity aspects of such algorithms are discussed.

Features
This book constitutes the thoroughly refereed post-proceedings of the 21st International Workshop on Combinatorial Algorithms, IWOCA 2010, held in London, UK, in July 2010. The 31 revised full papers presented together with extended abstracts of 8 poster presentations were carefully reviewed and selected from a total of 85 submissions. A broad variety of combinatorial graph algorithms for the computations of various graph features are presented; also algorithms for network computation, approximation, computational geometry, games, and search are presented and complexity aspects of such algorithms are discussed.

Fields of interest
Discrete Mathematics in Computer Science; Symbolic and Algebraic Manipulation; Algorithm Analysis and Problem Complexity; Data Structures; Algorithms; Coding and Information Theory

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

Communication Technologies for Vehicles


This book constitutes the joint refereed proceedings of the Third International Workshop on Communication Technologies for Vehicles, Nets4Cars 2011 and the First International Workshop on Communication Technologies for Vehicles in the Railway Transportation, Nets4Trains 2011, held in Oberpfaffenhofen, Germany, in March 2011. The 7 full papers of the rail track and 12 full papers of the road track presented together with a keynote were carefully reviewed and selected from 13 and 21 submissions respectively. They provide an overview over the latest technologies and research in the field of inter-vehicle communication and present original research results in areas relating to communication protocols and standards, mobility and traffic models, experimental and field operational testing, and performance analysis.

Features
This book constitutes the joint refereed proceedings of the Third International Workshop on Communication Technologies for Vehicles, Nets4Cars 2011 and the First International Workshop on Communication Technologies for Vehicles in the Railway Transportation, Nets4Trains 2011, held in Oberpfaffenhofen, Germany, in March 2011. The 7 full papers of the rail track and 12 full papers of the road track presented [...]
Computer Networks and Information Technologies


This book constitutes the refereed proceedings of the Second International Conference on Advances in Communication, Network, and Computing, CNC 2011, held in Bangalore, India, in March 2011. The 41 revised full papers, presented together with 50 short papers and 39 poster papers, were carefully reviewed and selected for inclusion in the book. The papers feature current research in the field of Information Technology, Networks, Computational Engineering, Computer and Telecommunication Technology, ranging from theoretical and methodological issues to advanced applications.

Features
This book constitutes the refereed proceedings of the Second International Conference on Advances in Communication, Network, and Computing, CNC 2011, held in Bangalore, India, in March 2011. The 41 revised full papers, presented together with 50 short papers and 39 poster papers, were carefully reviewed and selected for inclusion in the book. The papers feature current research in the field of Information Technology, Networks, Computational Engineering, Computer and Telecommunication Technology, ranging from theoretical and methodological issues to advanced applications.

Fields of interest
Computer Systems Organization and Communication Networks; Algorithm Analysis and Problem Complexity; Artificial Intelligence (incl. Robotics); Data Mining and Knowledge Discovery; Image Processing and Computer Vision; Multimedia Information Systems

Target groups
Research

Type of publication
Proceedings

Available
2011. XXI, 670 p. (Communications in Computer and Information Science, Vol. 142) Softcover
89,00 €
ISBN 978-3-642-19541-9

Computer Vision - ACCV 2010

The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2009. All together the four volumes present 206 revised papers selected from a total of 739 submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world’s geometry while preparing the higher level image and shape understanding. Novel geometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

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Fields of interest
Image Processing and Computer Vision; Pattern Recognition; Artificial Intelligence (incl. Robotics); Computer Graphics; Algorithm Analysis and Problem Complexity; Visualization

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
70,00 €
ISBN 978-3-642-19314-8

Computer Vision - ACCV 2010

The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2010. All together the four volumes present 206 revised papers selected from a total of 739 submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world’s geometry while preparing the higher level image and shape understanding. Novel geometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

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Fields of interest
Image Processing and Computer Vision; Pattern Recognition; Artificial Intelligence (incl. Robotics); Computer Graphics; Algorithm Analysis and Problem Complexity; Visualization

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
87,00 €
ISBN 978-3-642-19308-8
Computer Vision - ACCV 2010
10th Asian Conference on Computer Vision, Queenstown, New Zealand, November 8-12, 2010, Revised Selected Papers, Part III

The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2010. All together the four volumes present 206 revised papers selected from a total of 739 submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world’s geometry while preparing the higher level image and shape understanding. Novel geometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

Features
The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2010. All together the four volumes present 206 revised papers selected from a total of 739 submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world’s geometry while preparing the higher level image and shape understanding. Novel geometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

Fields of interest
Image Processing and Computer Vision; Pattern Recognition; Artificial Intelligence (incl. Robotics); Computer Graphics; Algorithm Analysis and Problem Complexity; Visualization

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
95,00 €
ISBN 978-3-642-19117-0

Computer Vision - ACCV 2010
10th Asian Conference on Computer Vision, Queenstown, New Zealand, November 8-12, 2010, Revised Selected Papers, Part IV

This unique text/reference discusses in depth the two integral components of reconstructive surgery; fracture detection, and reconstruction from broken bone fragments. In addition to supporting its application-oriented viewpoint with detailed coverage of theoretical issues, the work incorporates useful algorithms and relevant concepts from both graph theory and statistics. Topics and features: presents practical solutions for virtual craniofacial reconstruction and computer-aided fracture detection; discusses issues of image registration, object reconstruction, combinatorial pattern matching, and detection of salient points and regions in an image; investigates the concepts of maximum-weight graph matching, maximum-cardinality minimum-weight matching for a bipartite graph, determination of minimum cut in a flow network, and construction of automorphs of a cycle graph; examines the techniques of Markov random fields, hierarchical Bayesian restoration, Gibbs sampling, and Bayesian inference.

Features
Recent advances in both scanning instruments and supporting software have transitioned their impact from merely outside the operating room to inside the surgical theater, making intra-operative 3D imaging a reality. This unique text/reference examines the important application of computer vision and pattern recognition to medical science, with a specific focus on reconstructive craniofacial surgery. [-]

Contents

Fields of interest
Pattern Recognition; Imaging / Radiology

Target groups
Graduate

Type of publication
Monograph

Available
2011. XXIII, 168 p. (Advances in Computer Vision and Pattern Recognition, Vol. 0) Hardcover
79,95 €
Computing with Instinct
Rediscovering Artificial Intelligence

Simplicity in nature is the ultimate sophistication. The world’s magnificence has been enriched by the inner drive of instincts, the profound drive of our everyday life. Instinct is an inherited behavior that responds to environmental stimuli. Instinctive computing is a computational simulation of biological and cognitive instincts, which influence how we see, feel, appear, think and act. If we want a computer to be genuinely secure, intelligent, and to interact naturally with us, we must give computers the ability to recognize, understand, and even to have primitive instincts. This book, Computing with Instincts, comprises the proceedings of the Instinctive Computing Workshop held at Carnegie Mellon University in the summer of 2009. It is the first state-of-the-art survey on this subject. The book consists of three parts: Instinctive Sensing, Communication and Environments, including new experiments with in vitro biological neurons for the control of mobile robots, instinctive sound recognition, […]

Features
Simplicity in nature is the ultimate sophistication. The world’s magnificence has been enriched by the inner drive of instincts, the profound drive of our everyday life. Instinct is an inherited behavior that responds to environmental stimuli. Instinctive computing is a computational simulation of biological and cognitive instincts, which influence how we see, feel, appear, think and act. If we want a computer to be genuinely secure, intelligent, and to interact naturally with us, we must give computers the ability to recognize, understand, and even to have primitive instincts. This book, Computing with Instincts, comprises the proceedings of the Instinctive Computing Workshop held at Carnegie Mellon University in the summer of 2009. It is the first state-of-the-art survey on this subject. The book consists of three parts: Instinctive Sensing, Communication and Environments, including new experiments with in vitro biological neurons for the control of mobile robots, instinctive sound recognition, […]

Fields of interest
User Interfaces and Human Computer Interaction; Artificial Intelligence (incl. Robotics); Simulation and Modeling; Computation by Abstract Devices; Computers and Society; Developmental Biology

Target groups
Research

Type of publication
Proceedings

Available
2011. XII, 163 p. (Lecture Notes in Artificial Intelligence, Vol. 5897) Softcover
46,00 €
ISBN 978-3-642-19756-7

Digital Forensics and Cyber Crime
Second International ICST Conference, ICDF2C 2010, Abu Dhabi, United Arab Emirates, October 4-6, 2010, Revised Selected Papers

This book contains a selection of thoroughly refereed and revised papers from the Second International ICST Conference on Digital Forensics and Cyber Crime, ICDF2C 2010, held October 4-6, 2010 in Abu Dhabi, United Arab Emirates. The field of digital forensics is becoming increasingly important for law enforcement, network security, and information assurance. It is a multidisciplinary area that encompasses a number of fields, including law, computer science, finance, networking, data mining, and criminal justice. The 14 papers in this volume describe the various applications of this technology and cover a wide range of topics including law enforcement, disaster recovery, accounting frauds, homeland security, and information warfare.

Features
This book contains a selection of thoroughly refereed and revised papers from the Second International ICST Conference on Digital Forensics and Cyber Crime, ICDF2C 2010, held October 4-6, 2010 in Abu Dhabi, United Arab Emirates. The field of digital forensics is becoming increasingly important for law enforcement, network security, and information assurance. It is a multidisciplinary area that encompasses a number of fields, including law, computer science, finance, networking, data mining, and criminal justice. The 14 papers in this volume describe the various applications of this technology and cover a wide range of topics including law enforcement, disaster recovery, accounting frauds, homeland security, and information warfare.

Fields of interest
Legal Aspects of Computing; Management of Computing and Information Systems; Computers and Society; Image Processing and Computer Vision; Bioinformatics; Computer Communication Networks

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-19512-9

Discrete Geometry for Computer Imagery
16th IAPR International Conference, DGCI 2011, Nancy, France, April 6-8, 2011, Proceedings

This book constitutes the refereed proceedings of the 16th IAPR International Conference on Discrete Geometry for Computer Imagery, DGCI 2011, held in Nancy, France, in April 2011. The 20 revised full papers and 20 revised poster papers presented together with 3 invited lectures were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on models for discrete geometry, discrete and combinatorial topology, geometric transforms, discrete shape representation, recognition and analysis, discrete tomography, morphological analysis, as well as discrete and combinatorial tools for image segmentation and analysis.

Features
This book constitutes the refereed proceedings of the 16th IAPR International Conference on Discrete Geometry for Computer Imagery, DGCI 2011, held in Nancy, France, in April 2011. The 20 revised full papers and 20 revised poster papers presented together with 3 invited lectures were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on models for discrete geometry, discrete and combinatorial topology, geometric transforms, discrete shape representation, recognition and analysis, discrete tomography, morphological analysis, as well as discrete and combinatorial tools for image segmentation and analysis.

Fields of interest
Computer Graphics; Image Processing and Computer Vision; Computer Imaging, Vision, Pattern Recognition and Graphics; Pattern Recognition; Discrete Mathematics in Computer Science; Algorithm Analysis and Problem Complexity

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-19512-9
Energy-Efficient Computing and Networking

This book constitutes the postproceedings of the First International Conference on Energy-Efficient Computing and Networking, E-Energy, held in Passau, Germany in April 2010. The 23 revised papers presented were carefully reviewed and selected for inclusion in the post-proceedings. The papers are organized in topical sections on energy market and algorithms, ICT technology for the energy market, implementation of smart grid and smart home technology, microgrids and energy management, and energy efficiency through distributed energy management and buildings.

Features
This book constitutes the postproceedings of the First International Conference on Energy-Efficient Computing and Networking, E-Energy, held in Passau, Germany in April 2010. The 23 revised papers presented were carefully reviewed and selected for inclusion in the post-proceedings. The papers are organized in topical sections on energy market and algorithms, ICT technology for the energy market, [...] 

Fields of interest
Computers and Society; Management of Computing and Information Systems; Computer Communication Networks; Artificial Intelligence (incl. Robotics); Energy Economics; Renewable and Green Energy

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

46,00 €
ISBN 978-3-642-19321-7

Engineering Methods in the Service-Oriented Context

This book constitutes the refereed proceedings of the 4th IFIP WG 8.1 Working Conference on Method Engineering, ME 2011, held in Paris, France, in April 2011. The 13 revised full papers and 6 short papers presented together with the abstracts of two keynote talks were carefully reviewed and selected from 30 submissions. The papers are organized in topical sections on situated method engineering, method engineering foundations, customized methods, tools for method engineering, new trends to build methods, and method engineering services.

Features
This book constitutes the refereed proceedings of the 4th IFIP WG 8.1 Working Conference on Method Engineering, ME 2011, held in Paris, France, in April 2011. The 13 revised full papers and 6 short papers presented together with the abstracts of two keynote talks were carefully reviewed and selected from 30 submissions. The papers are organized in topical sections on situated method engineering, method [...] 

Fields of interest
Management of Computing and Information Systems; Software Engineering; Information Systems Applications (incl. Internet); User Interfaces and Human Computer Interaction; Business Information Systems

Target groups
Research

Type of publication
Proceedings

Available

78,00 €
ISBN 978-3-642-19996-7

Evolutionary Multi-Criterion Optimization
6th International Conference, EMO 2011, Ouro Preto, Brazil, April 5-8, 2011, Proceedings

This book constitutes the refereed proceedings of the 6th International Conference on Evolutionary Multi-Criterion Optimization, EMO 2011, held in Ouro Preto, Brazil, in April 2011. The 42 revised full papers presented were carefully reviewed and selected from 83 submissions. The papers deal with fundamental questions of EMO theory, such as the development of algorithmically efficient tools for the evaluation of solution-set quality, the theoretical questions related to solution archiving and others. They report on the continuing effort in the development of algorithms, either for dealing with particular classes of problems or for new forms of processing the problem information. Almost one third of the papers is related to EMO applications in a diversity of fields. Eleven papers are devoted to promote the interaction with the related field of Multi-Criterion Decision Making (MCDM).

Features
This book constitutes the refereed proceedings of the 6th International Conference on Evolutionary Multi-Criterion Optimization, EMO 2011, held in Ouro Preto, Brazil, in April 2011. The 42 revised full papers presented were carefully reviewed and selected from 83 submissions. The papers deal with fundamental questions of EMO theory, such as the development of algorithmically efficient tools for the [...] 

Fields of interest
Algorithm Analysis and Problem Complexity; Numeric Computing; Artificial Intelligence (incl. Robotics); Optimization; Computational Intelligence

Target groups
Research

Type of publication
Proceedings

Available

79,00 €
ISBN 978-3-642-19892-2
Formal Aspects of Security and Trust
7th International Workshop, FAST 2010, Pisa, Italy, September 16-17, 2010. Revised Selected Papers

This book constitutes the thoroughly refereed post-proceedings of the 7th International Workshop on Formal Aspects of Security and Trust, FAST 2010, held as part of the 8th IEEE International Conference on Software Engineering and Formal Methods, SEFM 2010 in Pisa, Italy in September 2010. The 14 revised full papers presented together with one invited paper were carefully reviewed and selected from 42 submissions. The papers focus of formal aspects in security and trust policy models, security protocol design and analysis, formal models of trust and reputation, logics for security and trust, distributed trust management systems, trust-based reasoning, digital assets protection, data protection, privacy and id issues, information flow analysis, language-based security, security and trust aspects in ubiquitous computing, validation/analysis tools, web service security/trust/privacy, grid security, security risk assessment, and case studies.

Features
This book constitutes the thoroughly refereed post-proceedings of the 7th International Workshop on Formal Aspects of Security and Trust, FAST 2010, held as part of the 8th IEEE International Conference on Software Engineering and Formal Methods, SEFM 2010 in Pisa, Italy in September 2010. The 14 revised full papers presented together with one invited paper were carefully reviewed and selected from 42 submissions. The papers focus of formal aspects in security and trust policy models, security protocol design and analysis, formal models of trust and reputation, logics for security and trust, distributed trust management systems, trust-based reasoning, digital assets protection, data protection, privacy and id issues, information flow analysis, language-based security, security and trust aspects in ubiquitous computing, validation/analysis tools, web service security/trust/privacy, grid security, security risk assessment, and case studies.

Fields of interest
Computer Communication Networks; Data Encryption; Systems and Data Security; Computers and Society; Management of Computing and Information Systems; Information Storage and Retrieval

Target groups
Research

Type of publication
Proceedings

Available

46,00 €
ISBN 978-3-642-19750-5

Formal Methods: Foundations and Applications
13th Brazilian Symposium on Formal Methods, SBMF 2010, Natal, Brazil, November 8-11, 2010, Revised Selected Papers

This book constitutes the thoroughly refereed post-conference proceedings of the 13th Brazilian Symposium on Formal Methods, SBMF 2010, held in Natal, Brazil, in November 2010. The 18 revised full papers were carefully reviewed and selected from 55 submissions. The papers presented cover a broad range of foundational and methodological issues in formal methods for the design and analysis of software and hardware systems as well as applications in various domains.

Features
This book constitutes the thoroughly refereed post-conference proceedings of the 13th Brazilian Symposium on Formal Methods, SBMF 2010, held in Natal, Brazil, in November 2010. The 18 revised full papers were carefully reviewed and selected from 55 submissions. The papers presented cover a broad range of foundational and methodological issues in formal methods for the design and analysis of software and hardware systems as well as applications in various domains.

Fields of interest
Software Engineering; Logics and Means of Programs; Programming Languages, Compilers, Interpreters; Programming Techniques; Mathematical Logic and Formal Languages; Management of Computing and Information Systems

Target groups
Research

Type of publication
Proceedings

Available

46,00 €
ISBN 978-3-642-19804-5

Foundations of Software Science and Computational Structures

This book constitutes the refereed proceedings of the 14th International Conference on Foundations of Software Science and Computational Structures, FOSSACS 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 30 revised full papers presented together with one full-paper length invited talk were carefully reviewed and selected from 100 submissions. The papers are organized in topical sections on coalgebra and computability, type theory, process calculi, automata theory, semantics, binding, security, and program analysis.

Features
This book constitutes the refereed proceedings of the 14th International Conference on Foundations of Software Science and Computational Structures, FOSSACS 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 30 revised full papers presented together with one full-paper length invited talk were carefully reviewed and selected from 100 submissions. The papers are organized in topical sections on coalgebra and computability, type theory, process calculi, automata theory, semantics, binding, security, and program analysis.

Fields of interest
Mathematical Logic and Formal Languages; Computation by Abstract Devices; Logics and Means of Programs; Programming Languages, Compilers, Interpreters; Software Engineering

Target groups
Research

Type of publication
Proceedings

Available

62,00 €
ISBN 978-3-642-19804-5
Fundamental Approaches to Software Engineering

14th International Conference, FASE 2011, Held as Part of the Joint European Conference on Theory and Practice of Software, ETAPS 2011, Saarbrücken, Germany, March 26–April 3, 2011, Proceedings

This book constitutes the refereed proceedings of the 14th International Conference on Fundamental Approaches to Software Engineering, FASE 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 29 revised full papers presented together with one full length invited talk were carefully reviewed and selected from 99 full paper submissions. The papers are organized in topical sections on verification, specification and modeling, reachability and model checking, model driven engineering, software development for QoS, testing: theory and new trends, testing in practice, code development and analysis, and empirical studies.

Features
This book constitutes the refereed proceedings of the 14th International Conference on Fundamental Approaches to Software Engineering, FASE 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 29 revised full papers presented together with one full length invited talk were carefully reviewed and [...]
Handbook of Conceptual Modeling
Theory, Practice, and Research Challenges

Conceptual modeling is about describing the semantics of software applications at a high level of abstraction in terms of structure, behavior, and user interaction. Embley and Thalheim start with a manifesto stating that the dream of developing information systems strictly by conceptual modeling – as expressed in the phrase “the model is the code” – is becoming reality. The subsequent contributions written by leading researchers in the field support the manifesto’s assertions, showing not only how to abstractly model complex information systems but also how to formalize abstract specifications in ways that let developers complete programming tasks within the conceptual model itself. They are grouped into sections on programming with conceptual models, structure modeling, process modeling, user interface modeling, and special challenge areas such as conceptual geometric modeling, information integration, and biological conceptual modeling. The Handbook of Conceptual Modeling collects in a single volume.[...]

Features
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Contents

Fields of interest
Software Engineering; Information Systems Applications (incl. Internet)

Target groups
Research

Type of publication
Handbook

Available
2011. XX, 587 p. Hardcover
99,95 €
ISBN 978-3-642-15864-3

Handbook of Natural Language Processing and Machine Translation

DARPA Global Autonomous Language Exploitation

This comprehensive handbook, written by leading experts in the field, details the groundbreaking research conducted under the breakthrough GALE program – The Global Autonomous Language Exploitation within the Defense Advanced Research Projects Agency (DARPA), while placing it in the context of previous research in the fields of natural language and signal processing, artificial intelligence and machine translation. The most fundamental contrast between GALE and its predecessor programs was its holistic integration of previously separate or sequential processes. In earlier language research programs, each of the individual processes was performed separately and sequentially: speech recognition, language recognition, transcription, translation, and content summarization. The GALE program employed a distinctly new approach by executing these processes simultaneously. Speech and language recognition algorithms now aid translation and transcription processes and vice versa. This combination of previously [...]

Features
This comprehensive handbook, written by leading experts in the field, details the groundbreaking research conducted under the breakthrough GALE program – The Global Autonomous Language Exploitation within the Defense Advanced Research Projects Agency (DARPA), while placing it in the context of previous research in the fields of natural language and signal processing, artificial intelligence and machine [...]

Contents

Fields of interest
Language Translation and Linguistics; Artificial Intelligence (incl. Robotics); Signal, Image and Speech Processing

Target groups
Research

Type of publication
Handbook

Available
2011. XXVI, 936 p. Hardcover
149,95 €
ISBN 978-1-4419-7712-0

Hardware and Software: Verification and Testing

6th International Haifa Verification Conference, HVC 2010, Haifa, Israel, October 4-7, 2010. Revised Selected Papers

This book constitutes the thoroughly refereed post-conference proceedings of the 6th International Haifa Verification Conference, HVC 2010, held in Haifa, Israel in October 2010. The 10 revised full papers presented together with 7 invited papers were carefully reviewed and selected from 30 submissions. The papers address all current issues, challenges and future directions of verification for hardware, software, and hybrid systems and have a research focus on hybrid methods and the migration of methods and ideas between hardware and software, static and dynamic analysis, pre- and post-silicon.

Features
This book constitutes the thoroughly refereed post-conference proceedings of the 6th International Haifa Verification Conference, HVC 2010, held in Haifa, Israel in October 2010. The 10 revised full papers presented together with 7 invited papers were carefully reviewed and selected from 30 submissions. The papers address all current issues, challenges and future directions of verification for [...]
This book constitutes the referred proceedings of the First IFIP WG 13.7 International Workshop on Human Aspects of Visualization, HCIV 2009, held in Uppsala, Sweden, in August 2009, as a satellite workshop of INTERACT 2009. The 11 revised full papers presented were carefully reviewed and selected from numerous submissions. These articles in this book give an overview of important issues concerning human-computer interaction and information visualization. They highlight the research required to understand what aspects of analysis match human capabilities most closely and how interactive visual support should be designed and adapted to make optimal use of human capabilities in terms of information perception and processing.

Features
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Fields of interest
User Interfaces and Human Computer Interaction; Computer Graphics; Image Processing and Computer Vision; Computer Appl. in Social and Behavioral Sciences

Target groups
Professional/practitioner

Type of publication
Collected works

Available
46,00 €
ISBN 978-3-642-19640-9

Human-Robot Personal Relationships

This book constitutes the thoroughly refereed post-conference proceedings of the Third International Conference on Human-Robot Personal Relationships, held in Leiden, The Netherlands, in June 2010. The 16 revised full papers presented together with 2 invited papers and 1 keynote lecture were carefully reviewed and selected from 22 submissions. The papers feature and discuss studies of personal relationships with artificial partners, their formation, their possibilities and their consequences. Such personal relationships are increasingly attracting attention from scientific fields as (social) robotics, human-computer interaction, artificial intelligence, psychology, philosophy, sociology.

Features
This book constitutes the thoroughly refereed post-conference proceedings of the Third International Conference on Human-Robot Personal Relationships, held in Leiden, The Netherlands, in June 2010. The 16 revised full papers presented together with 2 invited papers and 1 keynote lecture were carefully reviewed and selected from 22 submissions. The papers feature and discuss studies of personal relationships with artificial partners, their formation, their possibilities and their consequences. Such personal relationships are increasingly attracting attention from scientific fields as (social) robotics, human-computer interaction, artificial intelligence, psychology, philosophy, sociology.

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

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-19384-8

ICT Innovations 2010

This book constitutes the referred proceedings of the Second International Conference, ICT Innovations 2010, held in Ohrid, Macedonia, in September 2010. The 33 revised papers presented together with 5 invited papers were carefully reviewed and selected. The papers address the following topics: internet applications and services, artificial intelligence, bioinformatics, internet, mobile and wireless technologies, multimedia information systems, computer networks, computer security, e-business, cryptography, high-performance-computing, social networks, e-government, as well as GPU computing.

Features
This book constitutes the referred proceedings of the Second International Conference, ICT Innovations 2010, held in Ohrid, Macedonia, in September 2010. The 33 revised papers presented together with 5 invited papers were carefully reviewed and selected. The papers address the following topics: internet applications and services, artificial intelligence, bioinformatics, internet, mobile and wireless technologies, multimedia information systems, computer networks, computer security, e-business, cryptography, high-performance-computing, social networks, e-government, as well as GPU computing.

Fields of interest
Computer Communication Networks; Computerization by Abstract Devices; Artificial Intelligence (incl. Robotics); Algorithm Analysis and Problem Complexity; Information Systems Applications (incl.Internet); Information Storage and Retrieval

Target groups
Research

Type of publication
Proceedings

Available
2011. 378 p. (Communications in Computer and Information Science; Vol. 83) Softcover
64,00 €
ISBN 978-3-642-19324-8
Identity-Based Encryption

Identity Based Encryption (IBE) is a type of public key encryption and has been intensely researched in the past decade. Identity-Based Encryption summarizes the available research for IBE and the main ideas that would enable users to pursue further work in this area. This book will also cover a brief background on Elliptic Curves and Pairings, security against chosen Cipher text Attacks, standards and more. Advanced-level students in computer science and mathematics who specialize in cryptology, and the general community of researchers in the area of cryptology and data security will find Identity Based Encryption a useful book. Practitioners and engineers who work with real-world IBE schemes and need a proper understanding of the basic IBE techniques, will also find this book a valuable asset.

Features
None

Contents

Fields of interest
Data Structures, Cryptology and Information Theory; Data Encryption; Software Engineering; Coding and Information Theory; Discrete Mathematics in Computer Science; Algebra

Target groups
Research

Type of publication
Monograph

Available
79,95 €

Information Technology and Managing Quality Education

9th IFIP WG 3.7 Conference on Information Technology in Educational Management, ITEM 2010, Kasane, Botswana, July 26-30, 2010, Revised Selected Papers

This book constitutes the refereed post-proceedings of the 9th IFIP WG 3.7 Conference on Information Technology in Educational Management, ITEM 2010, held in Kasane, Botswana, in July 2010. The 22 revised full papers presented were carefully reviewed and selected. The papers cover a wide range of topics addressing the utilization of ICT at different levels of education from primary education to higher education, such as identifying and satisfying learning needs, strategic management, school management information systems, open source software, and the relationship between ICT and organizational performance.

Features
This book constitutes the refereed post-proceedings of the 9th IFIP WG 3.7 Conference on Information Technology in Educational Management, ITEM 2010, held in Kasane, Botswana, in July 2010. The 22 revised full papers presented were carefully reviewed and selected. The papers cover a wide range of topics addressing the utilization of ICT at different levels of education from primary education to higher [...]

Fields of interest
Computers and Education; Computers and Society; User Interfaces and Human Computer Interaction

Target groups
Research

Type of publication
Proceedings

Available
78,00 €
ISBN 978-3-642-19714-7

Introduction to Artificial Intelligence

This concise and accessible textbook supports a foundation or module course on A.I., covering a broad selection of the subdisciplines within this field. The book presents concrete algorithms and applications in the areas of agents, logic, search, reasoning under uncertainty, machine learning, neural networks and reinforcement learning. Topics and features: presents an application-focused and hands-on approach to learning the subject; provides study exercises of varying degrees of difficulty at the end of each chapter, with solutions given at the end of the book; supports the text with highlighted examples, definitions, and theorems; includes chapters on predicate logic, PROLOG, heuristic search, probabilistic reasoning, machine learning and data mining, neural networks and reinforcement learning; contains an extensive bibliography for deeper reading on further topics; supplies additional teaching resources, including lecture slides and training data for learning algorithms, at an associated website.

Features
The ultimate aim of artificial intelligence (A.I.) is to understand intelligence and to build intelligent software and robots that come close to the performance of humans. On their way towards this goal, A.I. researchers have developed a number of quite different subdisciplines. This concise and accessible Introduction to Artificial Intelligence supports a foundation or module course on A.I. [...]

Contents

Fields of interest
Artificial Intelligence (incl. Robotics)

Target groups
Lower undergraduate

Type of publication
Undergraduate textbook

Available
2011. XI, 316 p. (Undergraduate Topics in Computer Science) Softcover
34,95 €
ISBN 978-0-85729-298-8
Languages and Compilers for Parallel Computing

23rd International Workshop, LCPC 2010, Houston, TX, USA, October 7-9, 2010. Revised Selected Papers

This book constitutes the thoroughly refereed post-proceedings of the 23rd International Workshop on Languages and Compilers for Parallel Computing, LCPC 2010, held in Houston, TX, USA, in October 2010. The 18 revised full papers presented were carefully reviewed and selected from 47 submissions. The scope of the workshop spans foundational results and practical experience, and targets all classes of parallel platforms including concurrent, multithreaded, multicore, accelerated, multiprocessor, and cluster systems.

Features

This book constitutes the thoroughly refereed post-proceedings of the 23rd International Workshop on Languages and Compilers for Parallel Computing, LCPC 2010, held in Houston, TX, USA, in October 2010. The 18 revised full papers presented were carefully reviewed and selected from 47 submissions. The scope of the workshop spans foundational results and practical experience, and targets all classes of parallel platforms including concurrent, multithreaded, multicore, accelerated, multiprocessor, and cluster systems.

Fields of interest

Programming Languages, Compilers, Interpreters; Programming Techniques; Data Structures; Computing Methodologies; Models and Principles; Computer Communication Networks

Target groups

Research

Type of publication

Proceedings

Available

46,00 €
ISBN 978-3-642-19594-5

Migratory Interactive Applications for Ubiquitous Environments

Ubiquitous environments are important because they allow users to move about freely and continue the interaction with the available applications through a variety of interactive devices (including cell phones, PDAs, desktop computers, digital television sets, and intelligent watches). A frustrating limitation is that people have to start their session over again from the beginning at each interaction device change. This book reports results based on the work in the OPEN project. It provides solutions able to address three key aspects: device change, state persistence and content adaptation. There is a lack of migratory services technology for the migration of applications in different usage scenarios. This book offers a general and open migratory service platform solution based on a sound and innovative scientific approach developed by a multi-disciplinary consortium combining the expertise of three technological world leaders, three well-known research organizations and one SME.

Features

Ubiquitous environments should provide users with the ability to freely move about while interacting through a variety of interactive devices (including cell phones, PDAs, desktop computers, digital television sets, and intelligent watches) without losing continuity. A big source of frustration for users is having to start a session over again from the beginning at each interaction device change.

Contents

Introduction.- State of the Art in Migration.- Migration Opportunities.- The OPEN Migration Platform Architecture.- User Interface Migration based on the Use of Logical Descriptions.- Service Migration Network Support.- Dynamic Reconfiguration of Application Logic during Application Migration.- Design and Development of a Migratory Application based on OPEN Migration Service Platform.- Next-Generation Migratory Emergency Management Applications.- Integration of User Interface and Application Logic Reconfiguration: An Example in the Game Domain.- The Usability Evaluation and the...
**Passive and Active Measurement**


This book constitutes the refereed proceedings of the 12th International Conference on Passive and Active Measurement, PAM 2011, held in Atlanta, GA, USA, in March 2011. The 24 revised full papers presented were carefully reviewed and selected from 56 submissions. The papers were arranged into seven sessions covering passive measurement, wireless models, bandwidth, automated bots, route avoidance, interdomain protocols, timing, and diagnosis.

Features

This book constitutes the refereed proceedings of the 12th International Conference on Passive and Active Measurement, PAM 2011, held in Atlanta, GA, USA, in March 2011. The 24 revised full papers presented were carefully reviewed and selected from 56 submissions. The papers were arranged into seven sessions covering passive measurement, wireless models, bandwidth, automated bots, route avoidance, interdomain [-]...

**Fields of interest**

Computer Communication Networks; Information Systems Applications (incl.Internet); Software Engineering; Computers and Society; Management of Computing and Information Systems; Algorithm Analysis and Problem Complexity

**Target groups**

Professional/practitioner

**Type of publication**

Proceedings

**Available**


46,00 €
ISBN 978-3-642-19259-3

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**Privacy and Security Issues in Data Mining and Machine Learning**

International ECML/PKDD Workshop, PSDML 2010, Barcelona, Spain, September 24, 2010. Revised Selected Papers

This book constitutes the refereed proceedings of the International ECML/PKDD Workshop on Privacy and Security Issues in Data Mining and Machine Learning, PSDML 2010, held in Barcelona, Spain, in September 2010. The 11 revised full papers presented were carefully reviewed and selected from 21 submissions. The papers range from data privacy to security applications, focusing on detecting malicious behavior in computer systems.

Features

This book constitutes the refereed proceedings of the International ECML/PKDD Workshop on Privacy and Security Issues in Data Mining and Machine Learning, PSDML 2010, held in Barcelona, Spain, in September 2010. The 11 revised full papers presented were carefully reviewed and selected from 21 submissions. The papers range from data privacy to security applications, focusing on detecting malicious behavior [-]...

**Fields of interest**

Artificial Intelligence (incl. Robotics); Database Management; Management of Computing and Information Systems; Computers and Society

**Target groups**

Research

**Type of publication**

Proceedings

**Available**

2011, VIII, 141 p. (Lecture Notes in Artificial Intelligence, Vol. 6549) Softcover

46,00 €
ISBN 978-3-642-19895-3

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**Programming Languages and Systems**

20th European Symposium on Programming, ESOP 2011, Held as Part of the Joint European Conference on Theory and Practice of Software, ETAPS 2011, Saarbrücken, Germany, March 26—April 1, 2011, Proceedings

This book constitutes the refereed proceedings of the 20th European Symposium on Programming, ESOP 2011, held in Saarbrücken, Germany, March 30—April 1, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 24 revised full papers presented together with one full length invited talk were carefully reviewed and selected from 93 full paper submissions. Papers were invited on all aspects of programming language research including: programming paradigms and styles, methods and tools to write and specify programs and languages, methods and tools for reasoning about programs, methods and tools for implementation, and concurrency and distribution.

Features

This book constitutes the refereed proceedings of the 20th European Symposium on Programming, ESOP 2011, held in Saarbrücken, Germany, March 30—April 1, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 24 revised full papers presented together with one full length invited talk were carefully reviewed and selected from 93 full paper submissions. [-]...

**Fields of interest**

Software Engineering; Computer Communication Networks; Logics and Meanings of Programs; Programming Techniques; Programming Languages; Compilers, Interpreters; Artificial Intelligence (incl. Robotics)

**Target groups**

Research

**Type of publication**

Proceedings

**Available**


70,00 €
ISBN 978-3-642-19717-8
Recent Advances in Constraints
14th Annual ERCIM International Workshop on Constraint Solving and Constraint Logic Programming, CSCLP 2009, Barcelona, Spain, June 15-17, 2009, Revised Selected Papers

This book constitutes the thoroughly refereed post-proceedings of the 14th Annual ERCIM International Workshop on Constraint Solving and Constraint Logic Programming, CSCLP 2009, held in Barcelona, Spain, in June 2009. The 9 revised full papers presented were carefully reviewed and selected for inclusion in this post-proceedings. The papers in this volume present original research results and applications of constraint solving and constraint logic programming in several domains. Among the issues addressed are solving argumentation frameworks, software consistency, modeling languages, static design routing, dynamic constraint satisfaction, and constraint-based modeling.

Features
This book constitutes the thoroughly refereed post-proceedings of the 14th Annual ERCIM International Workshop on Constraint Solving and Constraint Logic Programming, CSCLP 2009, held in Barcelona, Spain, in June 2009. The 9 revised full papers presented were carefully reviewed and selected for inclusion in this post-proceedings. The papers in this volume present original research results and applications of [...]
Research in Computational Molecular Biology

This book constitutes the refereed proceedings of the 15th Annual International Conference on Research in Computational Molecular Biology, RECOMB 2011, held in Vancouver, Canada, in March 2011. The 43 revised full papers were carefully reviewed and selected from 153 submissions. The papers cover a wide range of topics including molecular sequence analysis; recognition of genes and regulatory elements; molecular evolution; gene expression; biological networks; sequencing and genotyping technologies; genomics; population, statistical genetics; systems biology; imaging; computational proteomics; molecular structural biology.

Features
This book constitutes the refereed proceedings of the 15th Annual International Conference on Research in Computational Molecular Biology, RECOMB 2011, held in Vancouver, Canada, in March 2011. The 43 revised full papers were carefully reviewed and selected from 153 submissions. The papers cover a wide range of topics including molecular sequence analysis; recognition of genes and regulatory elements; molecular evolution; gene expression; biological networks; sequencing and genotyping technologies; genomics; population, statistical genetics; systems biology; imaging; computational proteomics; molecular structural biology.

Fields of interest
Algorithm Analysis and Problem Complexity; Computational Biology / Bioinformatics; Database Management; Computation by Abstract Devices; Artificial Intelligence (incl. Robotics); Computer Science (general)

Target groups
Research

Type of publication
Proceedings

Available

70,00 €
ISBN 978-3-642-20035-9

Search Computing
Trends and Developments

Search computing, which has evolved from service computing, focuses on building the answers to complex search queries by interacting with a constellation of cooperating search services, using the ranking and joining of results as the dominant factors for service composition. The field is multi-disciplinary in nature and takes advantage of contributions from other research areas such as knowledge representation, human-computer interfaces, psychology, sociology, economics, and legal sciences. This book, the second in the Search Computing series, describes the evolution of theories, technologies, and methods related to search computing. The book has been divided into eight parts, reflecting the main research directions within the Search Computing project. The parts focus on: search as an information exploration task; interaction design issues when dealing with multi-domain search results; modeling and semantic description of search services; the rank-join problem; query processing techniques and [...] Features
Search computing, which has evolved from service computing, focuses on building the answers to complex search queries by interacting with a constellation of cooperating search services, using the ranking and joining of results as the dominant factors for service composition. The field is multi-disciplinary in nature and takes advantage of contributions from other research areas such as knowledge [...] Contents
Information Systems Applications (incl.Internet); Software Engineering; Algorithm Analysis and Problem Complexity; Programming Techniques; Data Mining and Knowledge Discovery; Theory of Computation

Target groups
Research

Type of publication
Proceedings

Available

46,00 €
ISBN 978-3-642-19667-6

Selected Areas in Cryptography
17th International Workshop, SAC 2010, Waterloo, Ontario, Canada, August 12-13, 2010. Revised Selected Papers

This book constitutes the thoroughly refereed post-proceedings of the 17th Annual International Workshop on Selected Areas in Cryptography, SAC 2010, held in Waterloo, Ontario, Canada in August 2010. The 24 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 90 submissions. The papers are organized in topical sections on hash functions, stream ciphers, efficient implementations, coding and combinations, block ciphers, side channel attacks, and mathematical aspects.

Features
This book constitutes the thoroughly refereed post-proceedings of the 17th Annual International Workshop on Selected Areas in Cryptography, SAC 2010, held in Waterloo, Ontario, Canada in August 2010. The 24 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 90 submissions. The papers are organized in topical sections on [...] Fields of interest
Data Encryption; Operating Systems; Algorithm Analysis and Problem Complexity; Computer Communication Networks; Information Systems Applications (incl.Internet)

Target groups
Research

Type of publication
Proceedings

Available

62,00 €
ISBN 978-3-642-19573-0
This book constitutes the joint post-proceedings of four topical workshops held as satellite meetings of the 8th International Conference on service-oriented computing, ICSOC 2010, held in San Francisco, CA, USA in December 2010. The 23 revised papers presented together with four introductory descriptions are organized in topical sections corresponding to the individual workshops: performance assessment and auditing in service computing (PAASC 2010), engineering service-oriented applications (WESOA 2010), services, energy and ecosystems (SEE 2010), and service-oriented computing in logistics (SOC-LOG 2010).

Features
This book constitutes the joint post-proceedings of four topical workshops held as satellite meetings of the 8th International Conference on service-oriented computing, ICSOC 2010, held in San Francisco, CA, USA in December 2010. The 23 revised papers presented together with four introductory descriptions are organized in topical sections corresponding to the individual workshops: performance assessment and auditing in service computing (PAASC 2010), engineering service-oriented applications (WESOA 2010), services, energy and ecosystems (SEE 2010), and service-oriented computing in logistics (SOC-LOG 2010).

Fields of interest
Computers and Society; Computer Appl. in Social and Behavioral Sciences; Management of Computing and Information Systems; Data Mining and Knowledge Discovery; Computer Communication Networks; Information Systems Applications (incl.Internet); Information Storage and Retrieval; Multimedia Information Systems; Business Information Systems

Target groups
Research

Type of publication
Proceedings

Available
54.00 € ISBN 978-3-642-19655-3

Social Computing, Behavioral-Cultural Modeling and Prediction


This book constitutes the refereed proceedings of the 4th International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction, held in College Park, MD, USA, March 29-31, 2011. The 48 papers and 3 keynotes presented in this volume were carefully reviewed and selected from 88 submissions. The papers cover a wide range of topics including social network analysis; modeling; machine learning and data mining; social behaviors; public health; cultural aspects; and effects and search.

Features
This book constitutes the refereed proceedings of the 4th International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction, held in College Park, MD, USA, March 29-31, 2011. The 48 papers and 3 keynotes presented in this volume were carefully reviewed and selected from 88 submissions. The papers cover a wide range of topics including social network analysis; modeling; machine [...]
Social Network Data Analytics

Social network analysis applications have experienced tremendous advances within the last few years due in part to increasing trends towards users interacting with each other on the internet. Social networks are organized as graphs, and the data on social networks takes on the form of massive streams, which are mined for a variety of purposes. Social Network Data Analytics covers an important niche in the social network analytics field. This edited volume, contributed by prominent researchers in this field, presents a wide selection of topics on social network data mining such as Structural Properties of Social Networks, Algorithms for Structural Discovery of Social Networks and Content Analysis in Social Networks. This book is also unique in focusing on the data analytical aspects of social networks in the internet scenario, rather than the traditional sociology-driven emphasis prevalent in the existing books, which do not focus on the unique data-intensive characteristics of online social...[—]

Contents

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Social network analysis applications have experienced tremendous advances within the last few years due in part to increasing trends towards users interacting with each other on the internet. Social networks are organized as graphs, and the data on social networks takes on the form of massive streams, which are mined for a variety of purposes. Social Network Data Analytics covers an important niche in the social network analytics field. This edited volume, contributed by prominent researchers in this field, presents a wide selection of topics on social network data mining such as Structural Properties of Social Networks, Algorithms for Structural Discovery of Social Networks and Content Analysis in Social Networks. This book is also unique in focusing on the data analytical aspects of social networks in the internet scenario, rather than the traditional sociology-driven emphasis prevalent in the existing books, which do not focus on the unique data-intensive characteristics of online social...[—]

Specification of Software Systems

This extensively revised and updated new edition of Specification of Software Systems builds upon the original focus on software specification with added emphasis on the practice of formal methods for specification and verification activities for different types of software systems and at different stages of developing software systems. Topics and features: provides a wide coverage of formal specification techniques and a clear writing style, supported by end-of-chapter bibliographic notes for further reading; presents a logical structure, with sections devoted to specification fundamentals, basics of formalism, logic, set theory and relations, property-oriented specification methods, and model-based specification techniques; contains end-of-chapter exercises and numerous case studies, with potential course outlines suggested in the Preface; covers Object-Z, B-Method, and Calculus of Communicating Systems offers material that can be taught with tool-supported laboratory projects.

Features
Recent advances in software specification methods, model checking, and theorem proving have generated new tools for the use of formal methods in both industry and academia. Yet, in order to choose the techniques most appropriate for a specific application, it is necessary to have a good understanding and expertise in formal methods. Software engineers now have several case studies to learn from, and are[—]

Contents
Theory of Cryptography

This book constitutes the thoroughly refereed proceedings of the 8th Theory of Cryptography Conference, TCC 2011, held in Providence, Rhode Island, USA, in March 2011. The 35 revised full papers are presented together with 2 invited talks and were carefully reviewed and selected from 108 submissions. The papers are organized in topical sections on hardness amplification, leakage resilience, tamper resilience, encryption, composable security, secure computation, privacy, coin tossing and pseudorandomness, black-box constructions and separations, and black-box separations.

Features
This book constitutes the thoroughly refereed proceedings of the 8th Theory of Cryptography Conference, TCC 2011, held in Providence, Rhode Island, USA, in March 2011. The 35 revised full papers are presented together with 2 invited talks and were carefully reviewed and selected from 108 submissions. The papers are organized in topical sections on hardness amplification, leakage resilience, encryption, composable security, secure computation, privacy, coin tossing and pseudorandomness, black-box constructions and separations, and black-box separations.

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

Target groups
Research

Type of publication
Proceedings

Available
79,00 €
ISBN 978-3-642-19570-9

Tools and Algorithms for the Construction and Analysis of Systems
17th International Conference, TACAS 2011, Held as Part of the Joint European Conference on Theory and Practice of Software, ETAPS 2011, Saarbrücken, Germany, March 26—April 3, 2011; Proceedings

This book constitutes the refereed proceedings of the 17th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, TACAS 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 32 revised full papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in topical sections on memory models and consistency, invariants and termination, timed and probabilistic systems, interpolations and SAT-solvers, learning, model checking, games and automata, verification, and probabilistic systems.

Features
This book constitutes the refereed proceedings of the 17th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, TACAS 2011, held in Saarbrücken, Germany, March 26—April 3, 2011, as part of ETAPS 2011, the European Joint Conferences on Theory and Practice of Software. The 32 revised full papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in topical sections on memory models and consistency, invariants and termination, timed and probabilistic systems, interpolations and SAT-solvers, learning, model checking, games and automata, verification, and probabilistic systems.

Fields of interest
Software Engineering; Logics and Meanings of Programs; Computer Communication Networks; Programming Languages, Compilers, Interpreters; Artificial Intelligence (incl. Robotics); Programming Techniques

Target groups
Research

Type of publication
Proceedings

Available
62,00 €
ISBN 978-3-642-19834-2

Transactions on Computational Systems Biology XIII

The LNCS journal Transactions on Computational Systems Biology is devoted to interdisciplinary research in the fields of computer science and life sciences and supports a paradigmatic shift in the techniques from computer and information science to cope with the new challenges arising from the systems-oriented point of view of biological phenomena. This, the 13th Transactions on Computational Systems Biology volume, guest edited by Ralph-Johan Back, Ion Petre, and Erik de Vink, focuses on Computational Models for Cell Processes and features a number of carefully selected and enhanced contributions initially presented at the CompMod workshop, which took place in Eindhoven, The Netherlands, in November 2009. From different points of view and following various approaches, the papers cover a wide range of topics in systems biology, addressing the dynamics and the computational principles of this emerging field.

Features
The LNCS journal Transactions on Computational Systems Biology is devoted to interdisciplinary research in the fields of computer science and life sciences and supports a paradigmatic shift in the techniques from computer and information science to cope with the new challenges arising from the systems-oriented point of view of biological phenomena. This, the 13th Transactions on Computational Systems Biology volume, guest edited by Ralph-Johan Back, Ion Petre, and Erik de Vink, focuses on Computational Models for Cell Processes and features a number of carefully selected and enhanced contributions initially presented at the CompMod workshop, which took place in Eindhoven, The Netherlands, in November 2009. From different points of view and following various approaches, the papers cover a wide range of topics in systems biology, addressing the dynamics and the computational principles of this emerging field.

Fields of interest
Computational Biology / Bioinformatics; Simulation and Modeling; Computation by Abstract Devices; Artificial Intelligence (incl. Robotics); Algorithm Analysis and Problem Complexity; Probability and Statistics in Computer Science

Target groups
Research

Type of publication
Contributed volume

Available
63,00 €
ISBN 978-3-642-19747-5
Triadic Game Design
Balancing Reality, Meaning and Play

Many designers, policy makers, teachers, and other practitioners are beginning to understand the usefulness of using digital games beyond entertainment. Games have been developed for teaching, recruiting and to collect data to improve search engines. This book examines the fundamentals of designing any game with a serious purpose and provides a way of thinking on how to design one successfully. The reader will be introduced to a design philosophy called “Triadic Game Design.”; a theory that all games involve three worlds: the worlds of Reality, Meaning, and Play. Each world is affiliated with aspects. A balance needs to be found within and between the three worlds. Such a balance is difficult to achieve, during the design many tensions will arise, forcing designers to make trade-offs. To deal with these tensions and to ensure that the right decisions are made to create a harmonic game, a frame of reference is needed. This is what Triadic Game Design offers.

Features
Many designers, policy makers, teachers, and other practitioners are beginning to understand the usefulness of using digital games beyond entertainment. This has led to an increasing number of attempts to apply games meaningfully. Games have been developed from teaching students about history, making patients adhere in taking their medicine, to recruiting personnel for the military and collecting data to improve search engines. The reader will be introduced to a design philosophy called “Triadic Game Design.”; a theory that all games involve three worlds: the worlds of Reality, Meaning, and Play. Each world is affiliated with aspects. A balance needs to be found within and between the three worlds. Such a balance is difficult to achieve, during the design many tensions will arise, forcing designers to make trade-offs. To deal with these tensions and to ensure that the right decisions are made to create a harmonic game, a frame of reference is needed. This is what Triadic Game Design offers.

Features

Types of publication
Monograph

Available
2011. XVI, 316 p. 89 illus., 84 in color. Hardcover
99.95 €
ISBN 978-1-84996-156-1
Computational Paleontology

Computational paleontology is simply a term applied to using computers and its facilities in the field of paleontology. However, we should be exactly precise in describing the term through explaining the main themes of this motivating and attractive scientific field. The uppermost aim of this book is to explain how computation could be competent in fetching fossils to life and the past to present. Computers for paleontologists save time and costs, interpret mysterious events precisely and accurately, visualize the ancient life definitely and undeniably.

Features
- Computational paleontology is simply a term applied to the use of computers and their facilities in the field of paleontology. However, we should be precise in describing the term when explaining the main themes of this motivating and attractive scientific field. The uppermost aim of this book is to explain how computation could be used to bring fossils to life and the past to present. For [...]
Dyke Swarms: Keys for Geodynamic Interpretation

Dykes occur in a wide variety of geographical and tectonic settings and their detailed study through space and time is imperative for understanding several geological events. Dykes are believed to be an integral part of continental rifting and when they occur as spatially extensive swarms of adequate size, they can be of immense utility in continental reconstructions and also help to identify Large Igneous Provinces (LIPs). It is known that continental flood basalts and major dyke swarms have their origin related in some way to the up-rise of hot mantle plumes which may lead to rifting and eventual continental break-up. Dykes signify crustal extension and are important indicators of crustal stabilisation events, supercontinental assembly and dispersal, crust-mantle interaction and play a significant role in the delineation of crustal provinces as well as in deciphering crustal evolution events. Many economic mineral deposits of the world are also associated with a variety of dykes. The volume will [...]
Geotechnics and Earthquake Geotechnics Towards Global Sustainability

This book is part of a bold, new initiative towards global sustainability and development that draws on the disciplines of geotechnical engineering and earthquake geotechnics. It contains contributions from fifteen of the world’s leading experts who met in Kyoto in early 2010 to discuss a range of issues related to the ways geotechnics can help us face the challenges ahead, from the technical to the social, from geo-hazards to megacities, from global warming and coastal protection to the conservation of world heritage sites. We hope these contributions will stimulate the debate over the role geotechnics has to play in achieving a more sustainable future for the world. Audience

This book will be of interest to advanced levels of researchers and practicing engineers in the fields of geotechnics and earthquake geotechnics for global sustainability: the greatest long term challenge of our time.

Features

This book is part of a bold, new initiative towards global sustainability and development that draws on the disciplines of geotechnical engineering and earthquake geotechnics. It contains contributions from fifteen of the world’s leading experts who met in Kyoto in early 2010 to discuss a range of issues related to the ways geotechnics can help us face the challenges ahead, from the technical to the social, from geo-hazards to megacities, from global warming and coastal protection to the conservation of world heritage sites. We hope these contributions will stimulate the debate over the role geotechnics has to play in achieving a more sustainable future for the world. Audience

Contents


Fields of interest

Geotechnical Engineering; Sustainable Development; Civil Engineering

Target groups

Research

Type of publication

Monograph

Available

2011. XIX, 254 p. 190 illus., 140 in color. (Geotechnical, Geological and Earthquake Engineering, Vol. 15) Hardcover

99,95 €

Marine Ecological Geography

Theory and Experience

In Chapter 1 the methodological principles of systematization and visualization of multidimensional ecological information for its operational dissemination among potential users are stated. Their realization results in creation of the geographic-and-ecologic model of marine basin as an information base for diagnosis of the marine ecosystem state, estimation of consequences of economic activity, and modelling of its changes with the use of mathematical tools. In Chapter 2 the geographic-and-ecological aspects of mathematical modeling of marine ecosystems, the possibilities and peculiarities of the most adequate models, the Russian hydrodynamic model of oil spills “SPILLMOD” and hydroecological model of organogenic compound transformation in the sea, are investigated. In the following six Chapters the examples of practical realization of geographic-and-ecologic (as information source) and mathematical (as computing apparatus) modelling at the investigations of specific ecological problems associated

Features

In Chapter 1 the methodological principles of systematization and visualization of multidimensional ecological information for its operational dissemination among potential users are stated. Their realization results in creation of the geographic-and-ecologic model of marine basin as an information base for diagnosis of the marine ecosystem state, estimation of consequences of economic activity, and modelling

Contents


Fields of interest

Coastal Sciences; Oceanography

Target groups

Research

Type of publication

Monograph

Available


129,95 €
ISBN 978-3-642-17443-8

Nile River Basin

Hydrology, Climate and Water Use

This book presents results of scientific studies ranging from hydrological modelling to water management and policy issues in the Nile River basin. It examines the physical, hydrometeorological and hydrogeological description of the basin along with analysis in understanding the hydrological processes of the basin under the changing land-use stemming from population pressure and increased natural resources tapping. The book discusses the increased impact of climate change on the river flows, and such issues as water availability and demand, management and policy to offset the imbalance between demand and available resources. This book will be of interest to researchers, practitioners, water resources managers, policy makers as well as graduate and undergraduate students. It is a useful reference text for ecohydrology, arid zone hydrology, hydrology of transboundary rivers and similar courses.

Features

This book presents results of scientific studies ranging from hydrological modelling to water management and policy issues in the Nile River basin. It examines the physical, hydrometeorological and hydrogeological description of the basin along with analysis in understanding the hydrological processes of the basin under the changing land-use stemming from population pressure and increased natural resources

Contents


Fields of interest

Hydrogeology; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Physical Geography

Target groups

Research

Type of publication

Monograph

Available

2011. XXVII, 419 p. 200 illus., 100 in color. Hardcover

129,95 €
ISBN 978-94-007-0688-0
**Remote Sensing of the Changing Oceans**

Remote Sensing of the Changing Oceans is a comprehensive account of the basic concepts, theories, methods and applications used in ocean satellite remote sensing. The book provides a synthesis of various new ideas and theories and discusses a series of key research topics in oceanic manifestation of global changes as viewed from space. A variety of research methods used in the analysis and modeling of global changes are introduced in detail along with numerous examples from around the world’s oceans. The authors review the changing oceans at different levels, including Global and Regional Observations, Natural Hazards, Coastal Environment and related scientific issues, all from the unique perspective of Satellite Observation Systems. Thus, the book not only introduces the basics of the changing oceans, but also new developments in satellite remote sensing technology and international cooperation in this emerging field. Danling Tang (Lingzis) received her Ph.D from Hong Kong University of Science and [...] Features Remote Sensing of the Changing Oceans is a comprehensive account of the basic concepts, theories, methods and applications used in ocean satellite remote sensing. The book provides a synthesis of various new ideas and theories and discusses a series of key research topics in oceanic manifestation of global changes as viewed from space. A variety of research methods used in the analysis and modeling of global [...] Contents Satellite Observation System and International Cooperation.- Global Changes.- Coastal Environment.- Regional Observation.- Natural Hazards. Fields of interest Remote Sensing / Photogrammetry; Oceanography; Natural Hazards; Coastal Sciences; Climate Change; Earth Sciences (general) Target groups Professional/practitioner Type of publication Monograph Available 2011. XXV, 396 p. 182 illus., 130 in color. Hardcover 129,95 € ISBN 978-3-642-16540-5

**The Black Earth**

Ecological Principles for Sustainable Agriculture on Chernozem Soils

Soil is the Earth’s living skin. It provides anchorage for roots, holds water long enough for plants to make use of it and the nutrients that sustain life – otherwise the Earth would be as barren as Mars. It is home to myriad micro-organisms and armies of microscopic animals as well as the familiar earthworm that accomplish biochemical transformations from fixing atmospheric nitrogen to recycling wastes; it receives and process all fresh water, provides the foundations for our built environment; and comprises the biggest global carbon store that we know how to manage. This book is about the best soil in the world – the black earth or chernozem: how it is being degraded by farming and how it may be farmed sustainably. Industrialisation of farming has laid bare contradictions between the unforgiving laws of ecology and economics. Soil organic matter is the fuel that powers soil systems and the cement that holds the soil together – and in place – but agriculture is burning it up faster than it is being [...] Features Soil is the Earth’s living skin. It provides anchorage for roots, holds water long enough for plants to make use of it and the nutrients that sustain life – otherwise the Earth would be as barren as Mars. It is home to myriad micro-organisms and armies of microscopic animals as well as the familiar earthworm that accomplish biochemical transformations from fixing atmospheric nitrogen to recycling wastes; it [...] Contents Preface.- 1. Introduction.- 2. The soil cover.- 3. Soil texture and structure.- 4. Soil mineralogy and elemental composition.- 5. Adsorption capacity and reaction.- 6. Soluble salts and soil solution.- 7. Humus - the guardian of soil fertility and global carbon sink.- 8. The nitrogen riddle.- 9. Phosphorus and sulphur budgets.- 10. Life in the soil.- 11. Soil structure, soil water and drought.- 12. The chernozem family.- 13. Accomodating soil diversity.- 14. Society’s perspective.- 15. Biological cycles.- 16. Soil health and soil quality.- 17. Farming and soil health.- 18. Experiment[...] Fields of interest Earth Sciences (general) Target groups Research Type of publication Monograph Available 2011. XXV, 143 p. 45 illus., 10 in color. (International Year of Planet Earth, Vol. 10) Hardcover 99,95 € ISBN 978-94-007-0158-8
M. Leppäranta, University of Helsinki, Finland

The Drift of Sea Ice

The Second Edition of The Drift of Sea Ice presents the fundamental laws of sea ice drift which come from the material properties of sea ice and the basic laws of mechanics. The resulting system of equations is analysed for the general properties of sea ice drift, the free drift model and analytical models for sea ice drift in the presence of internal friction, and the construction of numerical ice drift models is detailed. This second edition of a much lauded work, unique on this topic in the English language, has been revised, updated and expanded with much new information and outlines recent results, in particular in relation to the climate problem, mathematical modelling and ice engineering applications. The current book presents the theory, observations, mathematical modelling techniques, and applications of sea ice drift science. The theory is presented from the beginning on a graduate student level, so that students and researchers coming from other fields such as physical oceanography,[...]

Features
The Second Edition of The Drift of Sea Ice presents the fundamental laws of sea ice drift which come from the material properties of sea ice and the basic laws of mechanics. The resulting system of equations is analysed for the general properties of sea ice drift, the free drift model and analytical models for ice drift in the presence of internal friction, and the construction of numerical ice drift models [...]

Fields of interest
Geophysics / Geodesy; Oceanography; Environmental Physics

Target groups
Research

Type of publication
Monograph

Available

2011, X, 350 p. 140 illus., 1 in color. (Geophysical Sciences) Hardcover
129,95 €
ISBN 978-3-642-04682-7

K. Bhattacharya, University of Michigan, Ann Arbor, MI, USA

The Lower Damodar River, India

Understanding the Human Role in Changing Fluvial Environment

Interweaving the human aspects of river control with analysis of hydro-physical data, including historical data over the last few centuries, this monograph is a comprehensive evaluation of the Damodar’s lower reaches. While the Damodar River isn’t an exceptional tropical river, nor does it feature classic examples of river control structures, it is unusual and worthy of study due to the fact that nowhere else in the tropical world have riverine sandbars been used as a resource base as well as for permanent settlements. Based on their knowledge of river stages, the inhabitants have fine-tuned their land use to flood events, applying a concept of flood zoning to the riverbed. Every available space has been utilized rationally and judiciously. This rare human-environmental study analyzes the remarkable way in which immigrants unfamiliar with the riverine environment have adapted to the altered hydrologic regime of the river. In doing so they have demonstrated a sophisticated understanding of the flood[...]

Features
Interweaving the human aspects of river control with analysis of hydro-physical data, including historical data over the last few centuries, this monograph is a comprehensive evaluation of the Damodar’s lower reaches. While the Damodar River isn’t an exceptional tropical river, nor does it feature classic examples of river control structures, it is unusual and worthy of study due to the fact that nowhere[...]

Contents

Fields of interest
Hydrogeology; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Physical Geography

Target groups
Research

Type of publication
Monograph

Available

2011, XXIX, 308 p. 90 illus., 40 in color. (Advances in Asian Human-Environmental Research, Vol. 3) Hardcover
129,95 €
ISBN 978-94-007-0466-4

R. Berry, Hong Kong Institute of Education, Hong Kong, SAR; B. Adamson, Hong Kong Institute of Education, Hong Kong, SAR (Eds.)

Assessment Reform in Education

Policy and Practice

This book discusses the recent assessment movements in the eastern and western worlds with particular focuses on the policies, implementation, and impacts of assessment reform on education. A new perspective of assessment sees assessment as a means to enhance learning. This book examines the tensions, challenges and outcomes (intended and unintended) of assessment reform arising at the interface of policy and implementation, and implementation and student learning. The book reviews the experiences gained from research, and identifies the facilitators and hindrances to effective change. It reflects current thinking of assessment and provides the readers with ample background information of assessment development in many countries including USA, England, Scotland, Wales, Northern Ireland, Australia, Singapore, Taiwan, and Hong Kong.

Features
The early 21st century saw education reforms in many countries that were driven by new economic imperatives and that generally called for a realignment of assessment concepts to match the prevailing educational goals. Divided into two sections and fourteen chapters, this book provides an interpretation of why current assessment policies take the form that they do and the role and status of[...]

Contents

Fields of interest
Assessment, Testing and Evaluation; Educational Policy and Politics; Teaching and Teacher Education; International and Comparative Education; Curriculum Studies

Target groups
Research

Type of publication
Contributed volume

Available

99,95 €
ISBN 978-94-007-0728-3
Breakthrough Teaching and Learning
How Educational and Assistive Technologies are Driving Innovation

The many technology-related educational changes of the past decade have been propelled by even greater changes in the general consumer technology landscape. Education has become increasingly intertwined with the digital consumer landscape. We are no longer asking whether digital materials and tools should be integrated into teaching and learning, but how and how well. Meanwhile, the overall academic performance of U.S. students has not kept pace with our international peers. Many policymakers have called for increased attention to students’ 21st century skills and work readiness, pointing to the critical role technology should play in educational innovation. These changes mean that many mainstream accessible technologies can be used in the classroom to benefit a diverse population of learners, including students with disabilities and English language learners, reflecting the national shift from separate special education programs to more inclusive classrooms. Changes to policies and standards have…

Contents
Introduction and overview.- Trends and futures in educational technology for students with disabilities.- How the brain shapes technology.- Games for therapy and health.- Adaptive assessments for better ties.- How the brain shapes technology.- Games for educational technology for students with disabilities and English language learners, reflecting the national shift from separate special education programs to more inclusive classrooms. Changes to policies and standards have…

Fields of interest
Educational Technology

Target groups
Research

Type of publication
Monograph

Available
89,95 €
ISBN 978-1-4419-7767-0

Cognitive Load Theory

Over the last 25 years, cognitive load theory has become one of the world’s leading theories of instructional design. It is heavily researched by many educational and psychological researchers and is familiar to most practicing instructional designers, especially designers using computer and related technologies. The theory can be divided into two aspects that closely inter-relate and influence each other: human cognitive architecture and the instructional designs and prescriptions that flow from that architecture. The cognitive architecture is based on biological evolution. The resulting description of human cognitive architecture is novel and accordingly, the instructional designs that flow from the architecture also are novel. All instructional procedures are routinely tested using randomized, controlled experiments. Roughly 1/3 of the book will be devoted to cognitive architecture and its evolutionary base with 2/3 devoted to the instructional implications that follow, including…

Features
Cognitive Load Theory John Sweller, Paul Ayres, Slava Kalyuga Effective instructional design depends on the close study of human cognitive architecture—the processes and structures that allow people to acquire and use knowledge. Without this background, we might recognize that a teaching strategy is successful, but have no understanding as to why it works, or how it might…

Contents
<P>Introduction to the issues addressed by cognitive load theory.- Categories of information: What is learned based on an evolutionary perspective.- Human cognitive architecture.- Categories of cognitive load and measuring cognitive load.- Instructional effects associated with intrinsic cognitive load.&nbsp; Instructional effects associated with extraneous cognitive load.- The consequences of cognitive load theory for debates on the advantages and disadvantages of minimal guidance during instruction.- Future directions and unresolved issues.<P>

Fields of interest
Educational Psychology; Cognitive Psychology; Learning and Instruction

Target groups
Research

Type of publication
Monograph

Available
89,95 €

Gendered Choices
Learning, Work, Identities in Lifelong Learning

This important book breaks new ground in addressing issues of gendered learning in different contexts across the (adult) life span at the start of the 21st century. Adult learning sits within a shifting landscape of educational policy, profoundly influenced by the skills agenda, by complex funding policies, new qualifications and the widening/narrowing participation debate. The book is unique in highlighting the centrality of gendered choices to these developments which shape participation in and experiences of lifelong learning. Gendered Choices critically examines the continued expansion of a skills-based approach in areas of lifelong learning, including career decisions, professional identities and informal networks. It explores key intersections of adult learning from a gender perspective: notably participation, workplace learning and informal pathways. Drawing on research from a range of contexts, Gendered Choices demonstrates that for women the public/private spaces of work and home are…

Features
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Contents
About the Editors.- About the Contributors.- Introduction; Sue Jackson, Irene Malcolm and Kate Thomas.- Part One: Learning Pathways – Gendered Education; Introduction Part One; Irene Malcolm, Sue Jackson and Kate Thomas.- 1. Re-asserting a gender perspective; notably participation, workplace learning and informal pathways. Drawing on research from a range of contexts, Gendered Choices demonstrates that for women the public/private spaces of work and home are…

Fields of interest
Lifelong Learning / Adult Education; Gender Studies; Educational Philosophy; Sociology of Education; Professional and Vocational Education

Target groups
Research

Type of publication
Contributed volume

Available
99,95 €
ISBN 978-94-007-0646-0
Published annually since 1985, the Handbook series provides a compendium of thorough and integrative literature reviews on a diverse array of topics of interest to the higher education scholarly and policy communities. Each chapter provides a comprehensive review of research findings on a selected topic, critiques the research literature in terms of its conceptual and methodological rigor, and sets forth an agenda for future research intended to advance knowledge on the chosen topic. The Handbook focuses on twelve general areas that encompass the salient dimensions of scholarly and policy inquiries undertaken in the international higher education community. The series is fortunate to have attracted annual contributions from distinguished scholars throughout the world.

Features
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Contents
The Professional Knowledge Base of Science Teaching

Over the past twenty years, much has been written about the knowledge bases thought necessary to teach science. Shulman has outlined seven knowledge domains needed for teaching, and others, such as Tamir, have proposed somewhat similar domains of knowledge, specifically for science teachers. Aspects of this knowledge have changed because of shifts in curriculum thinking, and the current trends in science education have seen a sharp increase in the significance of the knowledge bases. The development of a standards-based approach to the quality of science teaching has become common in the Western world, and phrases such as “evidence-based practice” have been tossed around in the attempt to “measure” such quality. The Professional Knowledge Base of Science Teaching explores the knowledge bases considered necessary for science teaching. It brings together a number of researchers who have worked with science teachers, and they address what constitutes evidence of high quality science teaching, on what...

Features

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Contents


Fields of interest

Science Education; Teaching and Teacher Education

Target groups

Research

Type of publication

Contributed volume

Available

2011. XVI, 326 p. Hardcover

99,95 €

Transitions to Early Care and Education

International Perspectives on Making Schools Ready for Young Children

Transitions to new educational experiences are a universal rite of passage encountered by children worldwide. This volume in the Educating the Young Child: Advances in Theory and Research, Implications for Practice series provides early childhood educators with a resource that focuses on the transitions that young children make to early care and education settings, along with the issues that surround this important time in their lives. New experiences, such as the start of formal schooling, mark important and exciting events that also evoke different reactions from children and their families. The diverse experiences, traits, and needs exhibited by young children provide early childhood educators with what may be a potentially challenging role. With an international focus, the purpose of Transitions to Early Care and Education: International Perspectives on Making Schools Ready for Young Children is to communicate an enlarged view of the transition process in order to appreciate and honor the...

Features

Transitions to new educational experiences are a universal rite of passage encountered by children worldwide. This volume in the Educating the Young Child: Advances in Theory and Research, Implications for Practice series provides early childhood educators with a resource that focuses on the transitions that young children make to early care and education settings, along with the issues that...

Contents


Fields of interest

Childhood Education; Learning and Instruction; Teaching and Teacher Education; International and Comparative Education

Target groups

Research

Type of publication

Contributed volume

Available

2011. XV, 204 p. (Educating the Young Child, Vol. 4) Hardcover

99,95 €

5th International Conference on Practical Applications of Computational Biology & Bioinformatics

The growth in the Bioinformatics and Computational Biology fields over the last few years has been remarkable and the trend is to increase its pace. In fact, the need for computational techniques that can efficiently handle the huge amounts of data produced by the new experimental techniques in Biology is still increasing driven by new advances in Next Generation Sequencing, several types of the so called omics data and image acquisition, just to name a few. The analysis of the datasets that produces and its integration call for new algorithms and approaches from fields such as Databases, Statistics, Data Mining, Machine Learning, Optimization, Computer Science and Artificial Intelligence. Within this scenario of increasing data availability, Systems Biology has also been emerging as an alternative to the reductionist view that dominated biological research in the last decades. Indeed, Biology is more and more a science of information requiring tools from the computational sciences. In the last few...

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Contents


Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics); Bioinformatics

Target groups

Research

Type of publication

Proceedings

Available


189,95 €
ISBN 978-3-642-19913-4

Advanced Aerospace Applications, Volume 1. Proceedings of the 29th IMAC, A Conference on Structural Dynamics, 2011, the first volume of six from the Conference, brings together 32 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on Aerelasticity, Ground Testing, Dynamic Testing of Aerospace Structures, and Random Vibration.

Features
Advanced Aerospace Applications, Volume 1. Proceedings of the 29th IMAC, A Conference and Exposition on Structural Dynamics, 2011, the first volume of six from the Conference, brings together 32 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on Aerelasticity, [...]
PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is the international yearly tribute to present, to discuss, and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-disciplinary experts, academics and practitioners together to exchange their experience in the development of Agents and Multi-Agent Systems. This volume presents the papers that have been accepted for the 2011 edition. These articles capture the most innovative results and this year’s trends: Finance and Trading, Information Systems and Organisations, Leisure Culture and Interactions, Medicine and Cloud Computing, Platforms and Adaptation, Robotics and Manufacturing, Security and Privacy, Transports and Optimisation paper.

Features
PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is the international yearly tribute to present, to discuss, and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-disciplinary experts, academics and practitioners together to exchange their experience in the [...]
Applications of Finite Element Methods for Reliability Studies on ULSI Interconnections

The book presents some of the most relevant results from academia in the area of Artificial Intelligence for games. It emphasizes well theoretically supported work supported by developed prototypes, which should lead into integration of academic AI techniques into current electronic entertainment games. The book elaborates on the main results produced in Academia within the last 10 years regarding all aspects of Artificial Intelligence for games, including pathfinding, decision making, and learning. A general theme of the book is coverage of techniques for facilitating the construction of flexible, not prescripted AI for agents in games. Regarding pathfinding, the book includes new techniques for implementing real-time search methods that improve the results obtained through AI, as well as techniques for learning pathfinding behavior by observing actual players. Regarding decision making, the book describes new techniques for authoring tools that facilitate the construction by game designers.

Features
- Techniques used for Artificial Intelligence (AI) in commercial video games are still far from state-of-the-art in Academia, but with graphics in video games coming close to photo realistic quality, and multi-processor architectures getting common in console and PC game platforms, sophisticated AI is getting into the focus of the video game industry.
- The next big thing for enhancing the player experience are the technologies for Artificial Intelligence (AI).
- Implementing real-time search methods that are not prescripted AI for agents in games. Regarding pathfinding, the book includes new techniques for implementing real-time search methods that improve the results obtained through AI.
- Features for implementing real-time search methods that are not prescripted AI for agents in games. Regarding pathfinding, the book includes new techniques for implementing real-time search methods that improve the results obtained through AI.

Contents
- Visual Data Mining of Player Traces in Interactive Environments.
- Heuristic search methods for pathfinding.
- Pattern-based AI Scripting.
- Case-Based Reasoning and User-Generated Gameplay.
- Knowledge acquisition for adaptive game AI.
- Game AI as Storytelling.
- Affective Interactive Narrative.
- Virtual Humans.
- Interactive Drama.

Fields of interest
- Computational Intelligence.
- Artificial Intelligence (incl. Robotics).

Target groups
- Research

Type of publication
- Monograph

Available
- 2011. XII. 200 p. 40 illus. Hardcover
- 99,95 €
### Bifurcations, Instabilities and Degradations in Geomaterials

Geomaterials exhibit complex but rich mechanical behaviour with a variety of failure modes ranging from diffuse to localized deformation depending on stress, density, microstructure, and loading conditions. These failure modes are a result of an instability of material and/or geometric nature that can be studied within the framework of bifurcation theory. Degradation is another related phenomenon arising from cyclic loading, aging, weathering, chemical attack, and capillary effects, among others. The methodology of analyzing the various types of instabilities is crucial in the adequate modelling and safe design of numerous problems in geomathematics. The present volume contains a sampling of enlarged versions of papers presented at the International Workshop on Bifurcation and Degradations in Geomaterials (IWBDG 2008) held in Lake Louise, Alberta, Canada, May 28-31, 2008. These papers capture the state-of-the-art in the specialized field of geomathematics and contemporary approaches to solving the[]...

### Features

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### Contents


### Fields of interest

Continuum Mechanics and Mechanics of Materials; Geotechnical Engineering; Mineral Resources; Applied Mathematics / Computational Methods of Engineering

### Target groups

Research

### Type of publication

Monograph

### Available

2011, VIII, 372 p. 236 illus., 126 in color. (Springer Series in Geomechanics and Geoengineering) Hardcover

129.95 €  
ISBN 978-3-642-18283-9

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### Bonded Cement-Based Material Overlays for the Repair, the Lining or the Strengthening of Slabs or Pavements

State-of-the-Art Report of the RILEM Technical Committee 193-RLS

Among different approaches that can be considered for concrete rehabilitation, bonded overlays are often the most economical alternative. The primary purpose of overlays is to extend the life of the candidate structures, either by restoring the quality and integrity of the surface and/or the re-establishing or improving the load-carrying capacity. Nevertheless, the durability of bonded overlay systems still draws concerns in the technical community because of bond sustainability problems encountered in a number of cases. At this time, there is still no accepted design approach or methodology that can warrant the practitioner a successful outcome of the repair. This State-of-Art report summarizes the findings with respect to all aspects involved in the overlaying process.

### Features

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### Contents

TC 193-RLS – Technical Committee Members; Foreword; 1 Introduction, by J.-L. Granju, B. Bissonnette and L. Courard; 1.1 Introduction; 2 Overlay Design Process, by D.W. Fowler and M. Trevidic; 2.1 Purpose of Overlays; 2.2 Materials Selection; 2.2.1 Slabs on Grade/Pavements; 2.2.2 Structural Slabs and Decks; 2.3 Joints; 2.3.1 Slabs on Grade/Pavements; 2.3.2 Structural Slabs and Decks; 2.4 Construction Procedures; 2.4.1 Steel Placement; 2.4.2 Environmental Effects; 2.4.3 Curing; 2.5 The BCO Process; 2.6 Project Selection; 2.6.1 Design; 2.6.2 Construction; 2.6.3 Quality Control/Quality[]

### Fields of interest

Building Materials; Building Repair and Maintenance; Structural Materials

### Target groups

Research

### Type of publication

Contributed volume

### Available

2011, XII, 300 p. 44 illus. (Intelligent Systems Reference Library, Vol. 9) Hardcover

99.95 €  
ISBN 978-3-642-17847-4

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### Calculus Light

Another Calculus book? As long as students find calculus scary, the failure rate in mathematics is higher than in all other subjects, and as long as most people mistakenly believe that only geniuses can learn and understand mathematics, there will always be a room for a new book of Calculus. We call it Calculus Light. This book is designed for a one semester course in “light” calculus – mostly single variable, meant to be used by undergraduate students without a wide mathematical background and who do not major in mathematics but study subjects such as engineering, biology or management information systems. The first chapter contains a historical background of calculus. Every scientific achievement involves people and therefore characterized by victories and disappointments, intrigues and hope. All of these elements exist in the story behind calculus and when you add the time dimension, starting 2400 years ago, it is a saga. We hope the reader enjoys reading this chapter as much as we enjoyed the[]

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### Contents


### Fields of interest

Computational Intelligence; Information and Communication, Circuits; Applied Mathematics / Computational Methods of Engineering

### Target groups

Research

### Type of publication

Monograph

### Available

2011, XI, 300 p. 44 illus. (Intelligent Systems Reference Library, Vol. 9) Hardcover

99.95 €  
ISBN 978-3-642-17847-4

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Computational Intelligence; Information and Communication, Circuits; Applied Mathematics / Computational Methods of Engineering

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Research

### Type of publication

Monograph

### Available

2011, XI, 300 p. 44 illus. (Intelligent Systems Reference Library, Vol. 9) Hardcover

99.95 €  
ISBN 978-3-642-17847-4
Civil Engineering Topics, Volume 4

Design and Manufacturing of Active Microsystems

This book presents the design and manufacturing of microsystems as well as necessary key technologies developed within the Collaborative Research Center 516. The research efforts of this collaboration are focused on active micro systems which are based on the electromagnetic actuator principle. The travel of the investigated actuator systems is on the order of several millimeters. The total construction size of the actuator is on the range of several centimeters whereas essential structures being several micrometers. The methods and the production technologies that are investigated on the basis of various research models incorporate the fundamental process chains of microsystems.

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Fields of interest
Nanotechnology and Microengineering; Mechatronics; Operating Procedures, Materials Treatment; Nanotechnology

Target groups
Research

Type of publication
Monograph

Available
2011: XII, 444 p. 352 illus., 33 in color. (Microtechnology and MEMS) Hardcover

129,95 €
ISBN 978-3-642-12902-5

Digital Filters
Basics and Design

The second, strongly enlarged edition of the textbook gives a substantial insight into the characteristics and the design of digital filters. It briefly introduces to the theory of continuous-time systems and the design methods for analog filters. Time-discrete systems, the basic structures of digital filters, sampling theorem, and the design of IIR filters are widely discussed. The author devotes important parts to the design of non-recursive filters and the effects of finite register length. The explanation of techniques like oversampling and noise shaping conclude the book. The author has substantially updated all chapters and added some important topics like Allpass filters. With an emphasize put on the practical implementation of theoretical concepts, the book is a reference for advanced students as well as practicing engineers.

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Fields of interest
Signal, Image and Speech Processing; Control, Robotics, Mechatronics

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XV, 527 p. Hardcover

79,95 €
ISBN 978-3-642-14324-3
Dynamic Behavior of Materials, Volume 1
Proceedings of the 2010 Annual Conference on Experimental and Applied Mechanics


Features

Contents

Fields of interest
Theoretical and Applied Mechanics; Mechanics; Materials Science (general)

Target groups
Research

Type of publication
Proceedings

Available
189,95 €
ISBN 978-1-4419-8227-8

Dynamical Inverse Problems: Theory and Application

The papers in this volume present an overview of the general aspects and practical applications of dynamic inverse methods, through the interaction of several topics, ranging from classical and advanced inverse problems in vibration, isospectral systems, dynamic methods for structural identification, active vibration control and damage detection, imaging shear stiffness in biological tissues, wave propagation, to computational and experimental aspects relevant for engineering problems.

Features
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Contents

Fields of interest
Vibration, Dynamic Systems, Control; Civil Engineering; Systems Theory, Control; Dynamic Systems and Ergodic Theory

Target groups
Research

Type of publication
Monograph

Available
119,00 €
ISBN 978-3-7091-0695-2

Electric Power Quality

In the present day deregulated power market electric power quality issues become great concerns of utilities, end users and manufacturers. Worldwide researches are going on to address these issues. Electric Power Quality has evolved the researches carried out by the authors. The key features of the book can be lighted as follows:The contents focuses, on one different power quality issues, their sources and effects and different related standards, which are required for dents, researchers and practising engineers and, on the other hand, measurement techniques for different power quality parameters. The content level is designed in such a way that the concepts of different power quality issues in modern power system are built up first, followed by some existing and new measurement methods. This content should attract the students, researchers and practising en-

Features
In the present day deregulated power market electric power quality issues have become great concerns of utilities, end users and manufacturers. Worldwide researches are going on to address those issues. Electric Power Quality has evolved from the researches carried out by the authors.

Contents
1 Introduction. 2 Electric Power Quality. 3 Unbalance. 4 Harmonics. 5 Transients. 6 Sag, Swell, Interruption, Undervoltage and Overvoltage. 7 DC Offset, Electric Noise, Voltage Fluctuation, Flicker and Power Frequency Variation. 8 Unbalance Assessment using Sequence Components. 9 Unbalance Assessment using Feature Pattern Extraction Method. 10 Useful Tools for Harmonic Assessment. 11 Harmonic Assessment using FPEM in V-V and I-I Planes. 12 Clarke and Park Transformation. 13 Harmonics Assessment by FPEM in Clarke and Park Planes. 14 Harmonic Assessment by Area Based Technique in V-V and[...]

Fields of interest
Power Electronics, Electrical Machines and Networks; Energy Technology

Target groups
Research

Type of publication
Monograph

Available
99,95 €
ISBN 978-94-007-0634-7
Energy Economics

Concepts, Issues, Markets and Governance

Since its modest beginning in the 1970s, the academic and research focus on energy has grown substantially and energy has established itself as an independent, interdisciplinary subject area. It attracts attention from people in a range of different fields including engineers, scientists, geologists, environmentalists, bankers, investors, policy makers and politicians. Energy Economics introduces the basic concepts of energy economics and explains how simple economic tools can be used to analyse contemporary energy issues. Energy Economics is organised into six parts that give the reader a thorough grounding in various key aspects of the subject: basic demand-related concepts and ideas used in energy economics; supply-side economics; energy markets, with specific emphasis on oil, gas and coal; the application of simple economic principles in analysing contemporary energy issues; environmental aspects of energy use; and regulatory and governance issues. Energy Economics is an easily accessible reference.

Features

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Contents


Fields of interest

Energy Economics; Engineering Economics; Organization; Logistics; Marketing; Industrial Organization; Organization / Planning; Renewable and Green Energy; Energy Policy, Economics and Management

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. XXVI, 721 p. 267 illus., 83 in color. Hardcover

89.95 €
After the IPS² conferences in Cranfield and Linköping in 2009 and 2010 the 3rd CIRP International Conference on Industrial Product Service Systems (IPS²) 2011 takes place in Braunschweig, Germany. IPS² itself is defined as “an integrated industrial product and service offering that delivers value in use”. The customers expect comprehensive solutions, which are adapted to their individual needs. IPS² offers the possibility to stand out from competition and for long-term customer loyalty. Particularly in times of economic crisis it becomes apparent which producing companies understand to satisfy the needs and requirements of their customers. Especially in this relatively new domain IPS² it will be important to keep track of the whole context and to seek cooperation with other research fields and disciplines. The 3rd CIRP International Conference on Industrial Product Service Systems (IPS²) 2011 serves as a platform for such collaborations and the discussion of new scientific ideas.

Features
After the IPS² conferences in Cranfield and Linköping in 2009 and 2010 the 3rd CIRP International Conference on Industrial Product Service Systems (IPS²) 2011 takes place in Braunschweig, Germany. IPS² itself is defined as “an integrated industrial product and service offering that delivers value in use”. The customers expect comprehensive solutions, which are adapted to their individual needs. IPS² offers [...]
Glocalized Solutions for Sustainability in Manufacturing
Proceedings of the 18th CIRP International Conference on Life Cycle Engineering, Technische Universität Braunschweig, Braunschweig, Germany, May 2nd - 4th, 2011

The 18th CIRP International Conference on Life Cycle Engineering (LCE) 2011 continues a long tradition of scientific meetings focusing on the exchange of industrial and academic knowledge and experiences in life cycle assessment, product development, sustainable manufacturing and end-of-life management. The theme “Glocalized Solutions for Sustainability in Manufacturing” addresses the need for engineers to develop solutions which have the potential to address global challenges by providing products, services and processes taking into account local capabilities and constraints to achieve an economically, socially and environmentally sustainable society in a global perspective. Glocalized Solutions for Sustainability in Manufacturing do not only involve products or services that are changed for a local market by simple substitution or the omitting of functions. Products and services need to be addressed that ensure a high standard of living everywhere. Resources required for manufacturing and use of [...] Features
The 18th CIRP International Conference on Life Cycle Engineering (LCE) 2011 continues a long tradition of scientific meetings focusing on the exchange of industrial and academic knowledge and experiences in life cycle assessment, product development, sustainable manufacturing and end-of-life management. The theme “Glocalized Solutions for Sustainability in Manufacturing” addresses the need for engineers to [...] Contents
Industrial and Production Engineering; Sustainable Development; Energy Efficiency (incl. Buildings); Energy Economics; Engineering Design

Available
2011. XIII, 710 p. 639 illus., 282 in color Hardcover
299,00 €
ISBN 978-3-642-19691-1

Highlights in Practical Applications of Agents and Multiagent Systems
9th International Conference on Practical Applications of Agents and Multiagent Systems

PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is an evolution of the International Workshop on Practical Applications of Agents and Multi-Agent Systems. PAAMS is an international yearly tribute to present, to discuss, and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique opportunity to bring multi-disciplinary experts, academics and practitioners together to exchange their experience in the development of Agents and Multi-Agent Systems. This volume presents the papers that have been accepted for the 2011 edition in the special sessions: Special Session on Agents Behaviours for Artificial Markets, Special Session on Multi-Agent Systems for safety and security, Special Session on Web Mining and Recommender Systems, Special Session on Adaptive Multi-Agent System, Special Session on Integration of Artificial Intelligence Technologies in Resource-Constrained Devices, Special [...] Features
PAAMS, the International Conference on Practical Applications of Agents and Multi-Agent Systems is an evolution of the International Workshop on Practical Applications of Agents and Multi-Agent Systems. PAAMS is an international yearly tribute to present, to discuss, and to disseminate the latest developments and the most important outcomes related to real-world applications. It provides a unique [...] Contents
Special Session on Agents Behaviours for Artificial Markets.- Special Session on Multi-Agent Systems for safety and security.- Special Session on Web Mining and Recommender Systems.- Special Session on Adaptive Multi-Agent System.- Special Session on Integration of Artificial Intelligence Technologies in Resource-Constrained Devices.- Special Session on Bio-Inspired and Multi-Agents Systems: Applications to Languages.- Special Session on Agents for smart mobility.

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Available
Hydrogen Storage Materials

The Characterisation of Their Storage Properties

The problem of storing hydrogen safely and effectively is one of the major technological barriers currently preventing the widespread adoption of hydrogen as an energy carrier and the subsequent transition to a so-called hydrogen economy. Practical issues with the storage of hydrogen in both gas and liquid form appear to make reversible solid state hydrogen storage the most promising potential solution. Hydrogen Storage Materials addresses the characterisation of the hydrogen storage properties of the materials that are currently being considered for this purpose. The background to the topic is introduced, along with the various types of materials that are currently under investigation, including nanostructured interstitial and complex hydrides, and porous materials, such as metal-organic frameworks and microporous organic polymers. The main features of Hydrogen Storage Materials include: an overview of the different types of hydrogen storage materials and the properties that are of interest for their...
Information Processing and Biological Systems

Living beings require constant information processing for survival. In cells, information is being processed and propagated at various levels, from the gene regulatory network to chemical pathways, to the interaction with the environment. How this is achieved and how information is coded is still poorly understood. For example, what a cell interprets as information in the temporal level of an mRNA and what is interpreted as noise remains an open question. Recently, information theoretical methods and other tools, developed in the context of engineering and natural sciences, have been applied to study diverse biological processes. This book covers the latest findings on how information is processed in various biological processes, ranging from information processing and propagation in gene regulatory networks to information processing in natural language. An overview is presented of the state-of-the-art in information processing in biological systems and the opinion of current leaders in this.[...]

Features

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Intelligent-Based Systems Engineering

The International Council on Systems Engineering (INCOSE) defines Systems Engineering as an interdisciplinary approach and means to enable the realization of successful systems. Researchers are using intelligence-based techniques to support the practices of systems engineering in an innovative way. This research volume includes a selection of contributions by subject experts to design better systems.

Features
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Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Type of publication
Monograph

Available
129,95 € ISBN 978-3-642-17930-3

Introduction to Skin Biothermomechanics and Thermal Pain

‘Introduction to Skin Biothermomechanics and Thermal Pain’ introduces the study of coupled biothermo-mechanical and neural behavior of skin tissue in response to thermal and mechanical loads. The research in this book focuses on the theoretical modeling and experimental investigation of heated skin tissue in order to provide a predictive framework for thermal therapies of diseased tissue in clinics. Furthermore, by developing solution tools, it focuses on changes in treatment parameters leading to more effective therapies. The book is intended for researchers and scientists in Bioengineering, Heat Transfer, Mechanics, Biology and Neurophysiology, as well as clinicians. Dr. Feng Xu is a research fellow at Harvard Medical School, Boston, MA, USA. Dr. Tianjian Lu is a professor at the School of Aerospace, Xi’an Jiaotong University, Xi’an, China. Dr. Xu and Dr. Lu are also affiliated with Biomedical Engineering and Biomechanics Center at Xi’an Jiaotong University, Xi’an, China.

Features
‘Introduction to Skin Biothermomechanics and Thermal Pain’ introduces the study of coupled biothermo-mechanical and neural behavior of skin tissue in response to thermal and mechanical loads. The research in this book focuses on the theoretical modeling and experimental investigation of heated skin tissue in order to provide a predictive framework for thermal therapies of diseased tissue in clinics.

Contents

Fields of interest
Biomedical Engineering; Biophysics and Biological Physics; Neurology; Engineering Thermodynamics, Heat and Mass Transfer; Transportation

Target groups
Research

Type of publication
Monograph

Available
2011. 400 p. 50 illus., 30 in color. Hardcover
129,95 € ISBN 978-3-642-13201-8

Kernel-based Data Fusion for Machine Learning

Data fusion problems arise frequently in many different fields. This book provides a specific introduction to data fusion problems using support vector machines. In the first part, this book begins with a brief survey of additive models and Rayleigh quotient objectives in machine learning, and then introduces kernel fusion as the additive expansion of support vector machines in the dual problem. The second part presents several novel kernel fusion algorithms and some real applications in supervised and unsupervised learning. The last part of the book substantiates the value of the proposed theories and algorithms in MerKator, an open software to identify disease relevant genes based on the integration of heterogeneous genomic data sources in multiple species. The topics presented in this book are meant for researchers or students who use support vector machines. Several topics addressed in the book may also be interesting to computational biologists who want to tackle data fusion challenges.

Features
Data fusion problems arise frequently in many different fields. This book provides a specific introduction to data fusion problems using support vector machines. In the first part, this book begins with a brief survey of additive models and Rayleigh quotient objectives in machine learning, and then introduces kernel fusion as the additive expansion of support vector machines in the dual problem. The...

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics); Computational Biology / Bioinformatics

Target groups
Research

Type of publication
Monograph

Available
2011. X, 214 p. 43 illus., 2 in color. (Studies in Computational Intelligence, Vol. 345) Hardcover
99,95 € ISBN 978-3-642-19405-4
**Linking Models and Experiments, Volume 2**


Linking Models and Experiments, Volume 2. Proceedings of the 29th IMAC, A Conference and Exposition on Structural Dynamics, 2011, the second volume of six from the Conference, brings together 33 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on Finite Element Techniques, Model Updating, Experimental Dynamics Substructuring, Model Validation, and Uncertainty Quantification.

**Features**

Linking Models and Experiments, Volume 2. Proceedings of the 29th IMAC, A Conference and Exposition on Structural Dynamics, 2011, the second volume of six from the Conference, brings together 33 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on Finite Element [..]

**Contents**


**Fields of interest**

Appl. Mathematics / Computational Methods of Engineering; Aerospace Technology and Astronautics; Structural Mechanics

**Target groups**

Research

**Type of publication**

Proceedings

**Available**


189,95 €

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**MEMS and Nanotechnology, Volume 2**

Proceedings of the 2010 Annual Conference on Experimental and Applied Mechanics

This the second volume of six from the Annual Conference of the Society for Experimental Mechanics, 2010, brings together 40 chapters on Microelectromechanical Systems and Nanotechnology. It presents early findings from experimental and computational investigations on MEMS and Nanotechnology including contributions on Nanomechanical Standards, Magneto-mechanical MEMS Sensors, Piezoelectric MEMS for Energy Harvesting, and Linear and Nonlinear Mass Sensing.

**Features**

The 11th International Symposium on MEMS and Nanotechnology is the second volume of six from the Annual Conference of the Society for Experimental Mechanics 2010. It brings together 40 chapters on Microelectromechanical Systems and Nanotechnology. It presents early findings from experimental and computational investigations on MEMS and Nanotechnology including contributions on Nanomechanical Standards. [..]

**Fields of interest**

Theoretical and Applied Mechanics; Mechanics; Materials Science (general)

**Target groups**

Research

**Type of publication**

Proceedings

**Available**


189,95 €

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**Mathematical Theory of Elasticity of Quasicrystals and Its Applications**

This inter-disciplinary work covering the continuum mechanics of novel materials, condensed matter physics and partial differential equations discusses the mathematical theory of elasticity of quasicrystals (a new condensed matter) and its applications by setting up new partial differential equations of higher order and their solutions under complicated boundary value and initial value conditions. The new theories developed here dramatically simplify the solving of complicated elasticity equation systems. Large numbers of complicated equations involving elasticity are reduced to a single or a few partial differential equations of higher order. Systematical and direct methods of mathematical physics and complex variable functions are developed to solve the equations under appropriate boundary value and initial value conditions, and many exact analytical solutions are constructed. The dynamic and non-linear analysis of deformation and fracture of quasicrystals in this volume presents an innovative[..]

**Features**

This inter-disciplinary work covering the continuum mechanics of novel materials, condensed matter physics and partial differential equations discusses the mathematical theory of elasticity of quasicrystals (a new condensed matter) and its applications by setting up new partial differential equations of higher order and their solutions under complicated boundary value and initial value conditions. The new[..]

**Contents**


**Fields of interest**

Continuum Mechanics and Mechanics of Materials; Condensed Matter Physics; Applications of Mathematics

**Target groups**

Research

**Type of publication**

Monograph

**Available**

2011. 350 p. 48 illus., 8 in color. Hardcover

129,95 €
ISBN 978-3-642-14642-8
Mechanics and Electrodynamics of Magneto- and Electro-elastic Materials

This volume presents a state-of-the-art overview of the continuum theory of both electro- and magneto-sensitive elastomers and polymers, which includes mathematical and computational aspects of the modelling of these materials from the point of view of material properties and, in particular, the "smart-material" control of their mechanical properties.

Features
This volume presents a state-of-the-art overview of the continuum theory of both electro- and magneto-sensitive elastomers and polymers, which includes mathematical and computational aspects of the modelling of these materials from the point of view of material properties and, in particular, the "smart-material" control of their mechanical properties.

Contents
G.A. Maugin: Electromagnetics in deformable solids

Fields of interest
Continuum Mechanics and Mechanics of Materials; Computational Science and Engineering; Materials Science (general); Vibration, Dynamical Systems, Control

Target groups
Research

Type of publication
Monograph

Available
2011. VIII, 266 p. 44 illus. CISM International Centre for Mechanical Sciences, 527) Hardcover

Membrane Reactors for Hydrogen Production Processes

Membrane Reactors for Hydrogen Production Processes deals with technological and economic aspects of hydrogen selective membranes application in hydrogen production chemical processes. Membrane Reactors for Hydrogen Production Processes starts with an overview of membrane integration in the chemical reaction environment, formulating the thermodynamics and kinetics of membrane reactors and assessing the performance of different process architectures. Then, the state of the art of hydrogen selective membranes, membrane manufacturing processes and the mathematical modeling of membrane reactors are discussed. A review of the most useful applications from an industrial point of view is given. These applications included natural gas steam reforming, autothermal reforming, water gas shift reaction, decomposition of hydrogen sulphide, and alkane dehydrogenation. The final part is dedicated to the description of a pilot plant where the novel configuration was implemented at a semi-industrial scale.

Features
Membrane Reactors for Hydrogen Production Processes deals with technological and economic aspects of hydrogen selective membranes application in hydrogen production chemical processes. Membrane Reactors for Hydrogen Production Processes starts with an overview of membrane integration in the chemical reaction environment, formulating the thermodynamics and kinetics of membrane reactors.

Contents

Fields of interest
Industrial and Production Engineering; Industrial Chemistry / Chemical Engineering

Target groups
Research

Type of publication
Monograph

Available
Model Reduction for Circuit Simulation

Simulation based on mathematical models plays a major role in computer aided design of integrated circuits (ICs). Decreasing structure sizes, increasing packing densities and driving frequencies require the use of refined mathematical models, and to take into account secondary, parasitic effects. This leads to very high dimensional problems which nowadays require simulation times too large for the short time-to-market demands in industry. Modern Model Order Reduction (MOR) techniques present a way out of this dilemma in providing surrogate models which keep the main characteristics of the device while requiring a significantly lower simulation time than the full model. With Model Reduction for Circuit Simulation we survey the state of the art in the challenging research field of MOR for ICs, and also address its future research directions. Special emphasis is taken on aspects stemming from miniaturizations to the nano scale. Contributions cover complexity reduction using e.g., balanced truncation, [...] 

Features
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Contents

Fields of interest
Circuits and Systems; Applied Mathematics; Computational Methods of Engineering; Systems Theory, Control 

Target groups
Research 

Type of publication
Monograph 

Available
2011, XII, 253 p. (Signals and Communication Technology) Hardcover 

99,95 € ISBN 978-3-642-17495-7 

OFDM Concepts for Future Communication Systems

(Preliminary): The Orthogonal Frequency Division Multiplexing (OFDM) digital transmission technique has several advantages in broadcast and mobile communications applications. The main objective of this book is to give a good insight into these efforts, and provide the reader with a comprehensive overview of the scientific progress which was achieved in the last decade. Besides topics of the physical layer, such as coding, modulation and non-linearities, a special emphasis is put on system aspects and concepts, in particular regarding cellular networks and using multiple antenna techniques. The work extensively addresses challenges of link adaptation, adaptive resource allocation and interference mitigation in such systems. Moreover, the domain of cross-layer design, i.e. the combination of physical layer aspects and issues of higher layers, are considered in detail. These results will facilitate and stimulate further innovation and development in the design of modern communication systems, based on [...] 

Features
The Orthogonal Frequency Division Multiplexing (OFDM) digital transmission technique has several advantages in broadcast and mobile communications applications. The main objective of this book is to give a good insight into these efforts, and provide the reader with a comprehensive overview of the scientific progress which was achieved in the last decade. Besides topics of the physical layer, such as coding, [...] 

Contents
Introduction: - Channel Modeling: - Link Level Aspects: - System Level Aspects for Single Cell Scenarios: - OFDM/DMT for Wiredline Communications: 

Fields of interest
Signal, Image and Speech Processing; Coding and Information Theory; Special Purpose and Application-Based Systems 

Target groups
Research 

Type of publication
Monograph 

Available

129,95 € ISBN 978-3-642-14211-6 

Optical Remote Sensing Advances in Signal Processing and Exploitation Techniques

Optical remote sensing relies on exploiting multispectral and hyper spectral imagery possessing high spatial and spectral resolutions respectively. These modalities, although useful for most remote sensing tasks, often present challenges that must be addressed for their effective exploitation. This book presents current state-of-the-art algorithms that address the following key challenges encountered in representation and analysis of such optical remotely sensed data. Challenges in pre-processing images, storing and representing high dimensional data, fusing different sensor modalities, pattern classification and target recognition, visualization of high dimensional imagery. 

Features
Optical remote sensing involves acquisition and analysis of optical data – electromagnetic radiation captured by the sensing modality after reflecting off an area of interest on ground. Optical image acquisition modalities have come a long way – from gray-scale photogrammetric images to hyperspectral images. The advances in imaging hardware over recent decades have enabled availability of high spatial [...] 

Contents
Pre-processing images: - storing and representing high dimensional data: - fusing different sensor modalities: - pattern classification and target recognition: - visualization of high dimensional imagery. 

Fields of interest
Signal, Image and Speech Processing; Pattern Recognition; Microwaves, RF and Optical Engineering 

Target groups
Research 

Type of publication
Monograph 

Available

129,95 € ISBN 978-3-642-14211-6
Project Management for Facility Constructions
A Guide for Engineers and Architects

This book describes concepts, methods and practical techniques for managing projects to develop constructed facilities in the fields of oil & gas, power, infrastructure, architecture and the commercial building industries. It is addressed to a broad range of professionals willing to improve their management skills and designed to help newcomers to the engineering and construction industry understand how to apply project management to field practice. Also, it makes project management disciplines accessible to experts in technical areas of engineering and construction. In education, this text is suitable for undergraduate and graduate classes in architecture, engineering and construction management, as well as for specialist and professional courses in project management.

Features
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Contents

Fields of interest
Construction Management; Management/Business for Professionals

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. VIII, 189 p. 90 illus. Hardcover
69.95 €
ISBN 978-3-642-17091-1

Regular Nanofabrics in Emerging Technologies
Design and Fabrication Methods for Nanoscale Digital Circuits

Regular Nanofabrics in Emerging Technologies gives a deep insight into both fabrication and design aspects of emerging semiconductor technologies, that represent potential candidates for the post-CMOS era. Its approach is unique, across different fields, and it offers a synergistic view for a public of different communities ranging from technologists, to circuit designers, and computer scientists. The book presents two technologies as potential candidates for future semiconductor devices and systems and it shows how fabrication issues can be addressed at the design level and vice versa. The reader either for academic or research purposes will find novel material that is explained carefully for both experts and non-initiated readers. Regular Nanofabrics in Emerging Technologies is a survey of post-CMOS technologies. It explains processing, circuit and system level design for people with various backgrounds.

Features
Regular Nanofabrics in Emerging Technologies gives a deep insight into both fabrication and design aspects of emerging semiconductor technologies, that represent potential candidates for the post-CMOS era. Its approach is unique, across different fields, and it offers a synergistic view for a public of different communities ranging from technologists, to circuit designers, and computer scientists.

Contents

Fields of interest
Nanotechnology and Microengineering; Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design; Logic Design; Nanoscale Science and Technology; Semiconductors

Target groups
Research

Type of publication
Monograph

Available
2011. XIX, 188 p. 90 illus., 30 in color. (Lecture Notes in Electrical Engineering, Vol. 82) Hardcover
99.95 €
ISBN 978-94-007-0649-1

Rotating Machinery, Structural Health Monitoring, Shock and Vibration, Volume 5

Rotating Machinery, Structural Health Monitoring, Shock and Vibration, Volume 5 Proceedings of the 29th IMAC, A Conference and Exposition on Structural Dynamics, 2011, the fifth volume of six from the Conference, brings together 35 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Rotating Machinery, Structural Health Monitoring, as well as Shock and Vibration, along with other structural engineering areas.

Features
Rotating Machinery, Structural Health Monitoring, Shock and Vibration, Volume 5 Proceedings of the 29th IMAC, A Conference and Exposition on Structural Dynamics, 2011, the fifth volume of six from the Conference, brings together 35 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Rotating Machinery.

Contents

Fields of interest
Machinery and Machine Elements; Vibration; Dynamical Systems; Control; Quality Control; Reliability, Safety and Risk

Target groups
Research

Type of publication
Proceedings

Available
249.00 €
ISBN 978-1-4419-9427-1
Sensors, Instrumentation and Special Topics, Volume 6

Sensors, Instrumentation and Special Topics, Volume 6. Proceedings of the 29th IMAC, A Conference on Structural Dynamics, 2011, the sixth volume of six from the Conference, brings together 27 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on Structural Health Monitoring, High Intensity Noise Generation and other Special Topics.

Features
Sensors, Instrumentation and Special Topics, Volume 6. Proceedings of the 29th IMAC, A Conference on Structural Dynamics, 2011, the sixth volume of six from the Conference, brings together 27 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on Structural Health Monitoring, High Intensity Noise Generation and other Special Topics.

Contents

Fields of interest
Engineering Acoustics; Vibration, Dynamical Systems, Control; Aerospace Technology and Aeronautics

Target groups
Research

Type of publication
Proceedings

Available

139,95 €

Service Parts Management
Demand Forecasting and Inventory Control

With the pressure of time-based competition increasing, and customers demanding faster service, availability of service parts becomes a critical component of manufacturing and servicing operations. Service Parts Management first focuses on intermittent demand forecasting and then on the management of service parts inventories. It guides researchers and practitioners in finding better management solutions to their problems and is both an excellent reference for key concepts and a leading resource for further research. Demand forecasting techniques are presented for parametric and non-parametric approaches, and multi echelon cases and inventory pooling are also considered. Inventory control is examined in the continuous and periodic review cases, while the following are all examined in the context of forecasting: • error measures, • distributional assumptions, and • decision trees. Service Parts Management provides the reader with an overview and a detailed treatment of the current state of the.[...]

Features
With the pressure of time-based competition increasing, and customers demanding faster service, availability of service parts becomes a critical component of manufacturing and servicing operations. Service Parts Management first focuses on intermittent demand forecasting and then on the management of service parts inventories. It guides researchers and practitioners in finding better management.[...]

Contents

Fields of interest
Engineering Economics, Organization, Logistics, Marketing, Manufacturing, Machines, Tools; Operation Research / Decision Theory

Target groups
Research

Type of publication
Monograph

Available
2011, XIV, 311 p. 93 illus. Hardcover

129,95 €
ISBN 978-0-85729-038-0

Soft Computing Models in Industrial and Environmental Applications, 6th International Conference SOCO 2011

This volume of Advances in Intelligent and Soft Computing contains accepted papers presented at SOCO 2011 held in the beautiful and historic city of Salamanca, Spain, April 2011. This volume presents the papers accepted for the 2011 edition, both for the main event and the Special Sessions. SOCO 2011 Special Sessions are a very useful tool in order to complement the regular program with new or emerging topics of particular interest to the participating community. Four special sessions were organized related to relevant topics as: Optimization and Control in Industry, Speech Processing and Soft Computing, Systems, Man & Cybernetics and Soft Computing for Medical Applications.

Features
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Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Type of publication
Proceedings

Available
2011, XX, 624 p. 198 illus., 40 in color. (Advances in Intelligent and Soft Computing, Vol. 87) Hardcover

249,00 €
ISBN 978-3-642-19643-0
Stereolithography: Materials, Processes and Applications

Stereolithography: Materials, Processes and Applications will focus on recent advances in stereolithography covering aspects related to the most recent advances in the field, in terms of fabrication processes (two-photon polymerization, micro-stereolithography, infrared stereolithography and stereo-thermal-lithography), materials (novel resins, hydrogels for medical applications and highly reinforced resins with ceramics and metals), computer simulation and applications.

Features
Stereolithography: Materials, Processes and Applications focuses on recent advances in stereolithography, covering aspects related to the fabrication processes, materials, and computer simulations used in the field. Processes like two-photon polymerization, micro-stereolithography, infrared stereolithography and stereo-thermal-lithography are discussed at length. The book also describes the use of...
Ultrasonic Motors

Technologies and Applications

A comprehensive tutorial on ultrasonic motors for practicing engineers, researchers and graduate students. "Ultrasonic Motors: Technologies and Applications" describes the operating mechanism, electromechanical coupling models, optimization design of structural parameters, testing methods, and drive/control techniques of various ultrasonic motors and their applications. Dr. Chunsheng Zhao is a professor at Nanjing University of Aeronautics and Astronautics (NUAA) where he is Director of the Precision Driving Laboratory at NUAA. He is a member of the Chinese Academy of Science, and holds 54 patents in China and published more than 400 papers in the field of piezoelectric ultrasonic motors.

Features

A comprehensive tutorial on ultrasonic motors for practicing engineers, researchers and graduate students. "Ultrasonic Motors: Technologies and Applications" describes the operating mechanism, electromechanical coupling models, optimization design of structural parameters, testing methods, and drive/control techniques of various ultrasonic motors and their applications. Dr. Chunsheng Zhao is a professor at Nanjing University of Aeronautics and Astronautics (NUAA) where he is Director of the Precision Driving Laboratory at NUAA. He is a member of the Chinese Academy of Science, and holds 54 patents in China and published more than 400 papers in the field of piezoelectric ultrasonic motors.

Contents


User-Centric Technologies and Applications

Proceedings of the CONTEXTS 2011 Workshop

"Context" is defined as 'any information that can be used to characterize the situation of an entity'. Nowadays, the increasing availability of communication networks, the miniaturization and progressive reduction in the cost of sensors and the penetration of advanced mobile personal devices make possible to collect and process data from multiple sources and combine them in order to automatically infer knowledge about the user's situation. Thus, the CONTEXTS Workshop aims at gathering advances on key elements that enable the design and deployment of personalized ubiquitous context-aware services and natural non-intrusive methods for interaction. The Workshop is organized and funded by the CONTEXTS Programme, one of the largest cooperative research initiatives in Madrid, with the participation of institutions from all over Spain and with the support of international experts. The CONTEXTS Programme focuses on advancing the key elements in frontier communications and location technologies, datal[...]

Features

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Contents


Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Monograph

Available


139,95 €

ISBN 978-3-642-19907-3
**Environment**

Y. Wei, Institute of Policy and Management, Chinese Academy of Sciences, Beijing, China; L. Liu, Chinese Academy of Sciences, Beijing, China; G. Wu, Chinese Academy of Sciences, Beijing, China; L. Zou, Chinese Academy of Sciences, China (Eds.)

**Energy Economics: CO2 Emissions in China**

"Energy Economics: CO2 Emissions in China" presents a collection of the researches on China's CO2 emissions as studied by the Center for Energy & Environmental Policy Research (CEEP). Based on the analysis of factors related to global climate change and CO2 emissions, it discusses China's CO2 emissions originating from various sectors, diverse impact factors, as well as proposed policies for reducing carbon emissions. Featuring empirical research and policy analysis on focused and critical issues involving different stages of CO2 emissions in China, the book provides scientific supports for researchers and policy makers in dealing with global climate change.

**Features**

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**Contents**


**Fields of interest**

Atmospheric Protection / Air Quality Control / Air Pollution; Energy Economics; Climate Change; Meteorology / Climatology

**Target groups**

Research

**Type of publication**

Monograph

**Available**

2011. 360 p. 134 illus. in color. Hardcover

129.95 €
ISBN 978-3-642-13846-1

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**Geospatial Analysis of Environmental Health**

This book focuses on a range of geospatial applications for environmental health research, including environmental justice issues, environmental health disparities, air and water contamination, and infectious diseases. Environmental health research is at an exciting point in its use of geotechnologies, and many researchers are working on innovative approaches. This book is a timely scholarly contribution in updating the key concepts and applications of using GIS and other geospatial methods for environmental health research. Each chapter contains original research which utilizes a geotechnical tool (Geographic Information Systems (GIS), remote sensing, GPS, etc.) to address an environmental health problem. The book is divided into three sections organized around the following themes: issues in GIS and environmental health research; using GIS to assess environmental health impacts; and geospatial methods for environmental health. Representing diverse case studies and geospatial methods, the book is...

**Features**

This book focuses on a range of geospatial applications for environmental health research, including environmental justice issues, environmental health disparities, air and water contamination, and infectious diseases. Environmental health research is at an exciting point in its use of geotechnologies, and many researchers are working on innovative approaches. This book is a timely scholarly contribution.

**Contents**


**Fields of interest**

Environmental Health; Geographical Information Systems / Cartography; Remote Sensing / Photogrammetry

**Target groups**

Research

**Type of publication**

Monograph

**Available**

2011. XXIII, 408 p. 20 illus. in color. Hardcover

99.95 €

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**Global Food Insecurity**

Rethinking Agricultural and Rural Development Paradigm and Policy

Human-kind and ecological systems are currently facing one of the toughest challenges: how to feed more billions of people in the future within the perspective of climate change, energy shortages, economic crises and growing competition for the use of renewable and non renewable resources. This challenge is even more crucial given that we have not yet come close to achieving the Millennium Development Goal of halving the number of people living in extreme poverty and hunger. Scientists and relevant stakeholders are now voicing a clear message: that multiple challenges the world is facing require innovative, multilayered, science-based, technological, economic and political approaches in theoretical thinking, decision making and action. With this background central to survival and well-being, the purpose of this volume is to formulate and promote relevant theoretical analysis and policy recommendations. The major perspective of this publication is that paradigms and policy shifts at all levels are...

**Features**

Human-kind and ecological systems are currently facing one of the toughest challenges: how to feed more billions of people in the future within the perspective of climate change, energy shortages, economic crises and growing competition for the use of renewable and non renewable resources. This challenge is even more crucial given that we have not yet come close to achieving the Millennium Development Goal.

**Fields of interest**

Sustainable Development; Agriculture; Climate Change; Food Science; Energy Economics

**Target groups**

Graduate

**Type of publication**

Contributed volume

**Available**

2011. XIX, 498 p. 20 illus. in color. Hardcover

99,95 €
ISBN 978-94-007-0889-1
Groundwater and Subsurface Environments
Human Impacts in Asian Coastal Cities

Excessive groundwater pumping, groundwater contamination, and subsurface thermal anomalies have occurred frequently in Asian coastal cities, greatly disturbing the urban aquifer and the subsurface environment. In this volume, the relationship between the stage of a city’s development and subsurface environment issues have been explored. Intensive field surveys were done in Tokyo, Osaka, Seoul, Taipei, Bangkok, Jakarta, and Manila. New, advanced methods, including satellite, tracer techniques, and the social economy model, were developed to evaluate subsurface conditions. Groundwater storage and groundwater recharge rates, as well as the accumulation and transport of pollutants, have been compiled as integrated indices of natural capacities under climate and social changes, and used to evaluate the vulnerability risk for all cities. The indices have been made on a yearly basis for seven cities for a century (1900–2000). Using these indicators it is now possible to manage groundwater resources in a systematic way.

Features
Excessive groundwater pumping, groundwater contamination, and subsurface thermal anomalies have occurred frequently in Asian coastal cities, greatly disturbing the urban aquifer and the subsurface environment. In this volume, the relationship between the stage of a city’s development and subsurface environment issues have been explored. Intensive field surveys were done in Tokyo, Osaka, Seoul, Taipei, [...]}

Contents
Part I Subsurface Environmental Problems and Urban Development in Asia
Part II Groundwater Degradation and Resources Management
Part III Groundwater Contamination and Loads to the Ocean
Part IV Subsurface Thermal Anomalies Due to Global Warming and Urbanization
Part V Integrated Assessment of Subsurface Environments in Asia

Fields of interest
Environment (general); Geography (general); Hydrogeology; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Landscape; Regional and Urban Planning

Target groups
Research

Type of publication
Monograph

Available
2011, XV, 314 p. 179 illus., 2 in color. Hardcover

149,95 €
Spatial Analysis and Modeling in Geographical Transformation Process

GIS-based Applications

Currently, spatial analysis is becoming more important than ever because enormous volumes of spatial data are available from different sources, such as GPS, Remote Sensing, and others. This book deals with spatial analysis and modelling. It provides a comprehensive discussion of spatial analysis, methods, and approaches related to human settlements and associated environment. Key contributions with empirical case studies from Iran, Philippines, Vietnam, Thailand, Nepal, and Japan that apply spatial analysis including autocorrelation, fuzzy, voronoi, cellular automata, analytic hierarchy process, artificial neural network, spatial metrics, spatial statistics, regression, and remote sensing mapping techniques are compiled comprehensively. The core value of this book is a wide variety of results with state of the art discussion including empirical case studies. It provides a milestone reference to students, researchers, planners, and other practitioners dealing the spatial problems on urban and regional[...]

Contents

Fields of interest
Geographical Information Systems / Cartography; Landscape, Regional and Urban Planning; Monitoring / Environmental Analysis; Sustainable Development; Human Geography

Target groups
Research

Type of publication
Contributed volume

Available

99,95 €
Law

International Competition Enforcement Law Between Cooperation and Convergence

J.P. Terhechte, University of Hamburg, Germany

Introduction

The international dimensions of competition law and policy are most often examined at the level of substantive law. In this legal area both intentional and spontaneous assimilation and harmonization trends can be recognized, which manifest themselves e.g. in comparable approaches to combating particularly harmful restraints (so-called "hardcore cartels"). However, the complex terrain of enforcement law has been mainly ignored up to date. Are there common approaches in this field at all? How are the various competition laws linked with each other in respect to procedural norms? This book conceptualizes “International Competition Enforcement Law” against the backdrop of these issues and at the level of comparative law. The ciphers "cooperation" and "convergence" will serve as the two principle ideas for this book.

Features

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Contents


Fields of interest

International & Foreign Law; Economic Policy

Target groups

Research

Available

2011. XIII, 96 p. Hardcover
89,95 €
ISBN 978-3-642-17166-6

Schoolchildren as Propaganda Tools in the War on Terror

S.C. Grover, Lakehead University, Thunder Bay, ON, Canada

Violating the Rights of Afghan Children under International Law

This book explores in what ways both sides involved in the so-called war on terror are using schoolchildren as propaganda tools while putting the children's security at grave risk. The book explores how terrorists use attacks on education to attempt to destabilize the government while the government and the international aid community use increases in school attendance as an ostensible indicator of success. Also examined are the potential violations of international law that may occur when government and education aid workers encourage and facilitate school attendance, as they do, in areas within conflict-affected states such as Afghanistan where security for education is inadequate and the risk of terror attacks on education high.

Features

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Contents

Re-examining the Role of Education Aid as a Component of Humanitarian Agenda in Conflict-Affected States. - Attacks on Education: The Scope of the Problem and the Unwitting Complicity of CAFS, their Coalition Allies and the International Aid Community. - Attacks on Education: Issues of Accountability for Both Sides in the ‘War on Terror’.

Fields of interest

International & Foreign Law; Political Science; Educational Policy and Politics; Criminal Law; Sociology; Law (general)

Target groups

Research

Available

2011. XIX, 279 p. Hardcover
99,95 €
ISBN 978-3-642-17899-3
BetaSys

Systems Biology of Regulated Exocytosis in Pancreatic β-Cells

BetaSys uses the example of regulated exocytosis in pancreatic β-cells, and its relevance to diabetes, to illustrate the major concepts of systems biology, its methods and applications.

Features

- The insulin secreting β-cell is one of the most specialized cell types with diverse and multi-functional components (genes, gene products, organelles and metabolites)
- A multitude of regulatory strategies in response to internal and environmental signals

This book looks at the technological advances that make simultaneous detection of thousands of biological variables possible, at a substantial variety of phenomena has never been confined solely to the work of researchers who consider themselves... [.] Features

As concerns about humankind’s relationship with the environment move inexorably up the agenda, this volume tells the story of the history of the concept of ecology itself and adds much to the historical and philosophical debate over this multifaceted discipline. The text provides readers with an overview of the theoretical, institutional and historical formation of ecological knowledge. The varied local conditions of early ecology are considered in detail, while epistemological problems that lie on the borders of ecology, such as disunity and complexity, are discussed. The book traces the various phases of the history of the concept of ecology itself, from its 19th century origins and antecedents, through the emergence of the environmental movement in the later 20th century, to the future, and how ecology might be located in the environmental science framework of the 21st century. The study of ‘ecological’ phenomena has never been confined solely to the work of researchers who consider themselves... [.] Features

Contents

- Preface
- Systems biology of β-cells - revisited
- Established facts and open questions of the focused systems analysis of regulated exocytosis in β-cells
- Mitochondria and metabolic signals in β-cells
- β-cell ontogenesis and the insulin production apparatus
- The role of the cytoskeleton in transport and release of the insulin-containing granules by pancreatic β-cells
- The mathematical microscope making the inaccessible accessible
- Magnetic resonance imaging of pancreatic β-cells
- Mapping the β-cell in 3D at the nanoscale using...

Fields of interest

- Systems Biology
- Human Genetics
- Bioinformatics
- Diabetes

Target groups

Research

Type of publication

Contributed volume

Available

2011. XVIII. 558 p. 104 illus., 53 in color. With online files/update. (Systems Biology, Vol. 2) Hardcover

149,95 €


Encyclopedia of South American Aquatic Insects: Hemiptera - Heteroptera

Hemiptera - Heteroptera encompasses the three well-defined suborders of the true bugs which are adapted to an aquatic or littoral habitat. The book begins with a section on the biology these insects and provides illustrations of the basic features of their morphology and outlines the larval development. Brief outlines of the ecological and zoogeographical peculiarities of the three aquatic suborders are presented individually, and various methods for observing, collecting, preserving, rearing, and examining specimens are discussed. Most of the book is devoted to keys for the identification of adults to species, and notes are provided that will help recognize the known larvae. Unlike most other aquatic insects, the larval instars of the heteropteran species closely resemble the adults in their morphology, preferred habitats, and feeding habits. Therefore, distinguishing features of those relatively few larvae which have been described in detail are usually mentioned in the keys to the adults...

Features

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Contents

- Introduction
- An appeal for quality in taxonomic work
- Scope of the work
- Acknowledgements
- Section 6: Hemiptera - Key to the suborders
- Key to the infraorders of Heteroptera in South America
- 6.1 Morphology
- 6.2 Ecology
- 6.3 Preservation and examination
- 6.4 Zoogeography
- 6.5 Taxonomic problems
- 6.6 Suggestions for improvement
- 6.7 Keys to aquatic Heteroptera in South America

Fields of interest

- Zoology
- Freshwater & Marine Ecology
- Entomology
- Animal Systematics / Taxonomy / Biogeography
- Animal Ecology

Target groups

Research

Type of publication

Monograph

Available

2011. IX. 679 p. 820 illus. Hardcover

169,95 €

ISBN 978-94-007-0704-7
Interdisciplinary Anthropology

Continuing Evolution of Man

This volume is the result of a research project entitled “Evolutionary Continuity – Human Specifics – The Possibility of Objective Knowledge” that was carried out by representatives of six academic disciplines (evolutionary biology, evolutionary anthropology, brain research, cognitive neuroscience, cognitive psychology and philosophy) over a period of three and a half years. The starting point for the project was the newly emerging riddle of human uniqueness: though the uniqueness of human beings is undisputable, all explanations for this fact have successively been discarded or refuted in recent decades. There is no special factor that could explain the particularities of human existence. Rather, all human skills derive from a continuous relation to pre-human skills, that is to say, to elements that were developed earlier in the phylogeny and were later inherited. But starting from abilities that are anything but special, how could the particularity of human beings have evolved? This was the [...] Features

This volume is the result of a research project entitled “Evolutionary Continuity – Human Specifics – The Possibility of Objective Knowledge” that was carried out by representatives of six academic disciplines (evolutionary biology, evolutionary anthropology, brain research, cognitive neuroscience, cognitive psychology and philosophy) over a period of three and a half years. The starting point for the project [...] Contents


Fields of interest
Evolutionary Biology

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 174 p. Hardcover

139.95 €
ISBN 978-3-642-11667-4

Mesenchymal Stem Cell Assays and Applications

Mesenchymal Stem Cells have been an unprecedented level of interest in the last decade, primarily due to their relative ease of isolation, the large numbers of cells present in the adult, and the ability to propagate these cells in culture. In Mesenchymal Stem Cell Assays and Applications, expert researchers from across the globe explore the latest techniques to propagate, characterize, and engineer this special cell type. Chapters outline a set of protocols and assays used by leading investigators in the field, providing standards that can be applied by all researchers to the population of cells used in their experiments. 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. Ground-breaking and current, Mesenchymal Stem Cell Assays and Applications is a necessary handbook for all researchers[...]

Features

Mesenchymal Stem Cells have been an unprecedented level of interest in the last decade, primarily due to their relative ease of isolation, the large numbers of cells present in the adult, and the ability to propagate these cells in culture. In Mesenchymal Stem Cell Assays and Applications, expert researchers from across the globe explore the latest techniques to propagate, characterize, and engineer this[...]

Contents


Fields of interest
Cell Biology; Stem Cells

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

109.95 €
ISBN 978-1-60761-998-7

MicroRNAs in Development

Methods and Protocols

Since the discovery of microRNAs, developmental biologists have striven to understand the role of miRNAs in development and disease. MicroRNAs in Development: Methods and Protocols collects contributions from expert researchers in order to provide practical guidelines to this complex study. Divided into three convenient sections, this detailed volume covers various techniques to detect and profile miRNA expression, followed by protocols to manipulate the activity of miRNAs in various organisms, and it concludes with a section that outlines different methods to identify and validate miRNA targets in animals and plants. Written in the highly successful Methods in Molecular Biology series format, chapters contain introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes on troubleshooting and avoiding known pitfalls. Authoritative and accessible, MicroRNAs in Development: Methods and Protocols serves as[...]

Features

Since the discovery of microRNAs, developmental biologists have striven to understand the role of miRNAs in development and disease. MicroRNAs in Development: Methods and Protocols collects contributions from expert researchers in order to provide practical guidelines to this complex study. Divided into three convenient sections, this detailed volume covers various techniques to detect and profile[...]

Contents


Fields of interest
Cell Biology; Gene Expression

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

94.95 €
Modelling Complex Ecological Dynamics

An Introduction into Ecological Modelling for Students, Teachers & Scientists

Model development is of vital importance for understanding and management of ecological processes. Identifying the complex relationships between ecological patterns and processes is a crucial task. Ecological modelling—both qualitatively and quantitatively—plays a vital role in analysing ecological phenomena and for ecological theory. This textbook provides a unique overview of modelling approaches. Representing the state-of-the-art in modern ecology, it shows how to construct and work with various different model types. It introduces the background of each approach and its application in ecology. Differential equations, matrix approaches, individual-based models and many other relevant modelling techniques are explained and demonstrated with their use. The authors provide links to software tools and course materials. With chapters written by leading specialists, "Modelling Complex Ecological Dynamics" is an essential contribution to expand the qualification of students, teachers and scientists alike.

Features

Model development is of vital importance for understanding and management of ecological processes. Identifying the complex relationships between ecological patterns and processes is a crucial task. Ecological modelling—both qualitatively and quantitatively—plays a vital role in analysing ecological phenomena and for ecological theory. This textbook provides a unique overview of modelling approaches. [...]
RNA Detection and Visualization

Methods and Protocols

With its complex and extensively regulated metabolism, the study of the RNA lifecycle demands tools that allow for the localization of RNAs to be observed either in an in situ setting or, preferably, under in vivo conditions. In RNA Detection and Visualization: Methods and Protocols, the best and brightest investigators provide an up-to-date and in-depth description of basic methods and protocols used for detecting and visualizing mRNAs in both fixed and live cells, from bacteria to mammals. For novices and experts alike, this mix of classic in situ hybridization and advanced live imaging techniques, cell fractionation and affinity purification procedures, and bioinformatics tools gives researchers the most complete and extensive array of research aids possible. As a volume written in the highly successful Methods in Molecular Biology™ series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible.[...]

Features

With its complex and extensively regulated metabolism, the study of the RNA lifecycle demands tools that allow for the localization of RNAs to be observed either in an in situ setting or, preferably, under in vivo conditions. In RNA Detection and Visualization: Methods and Protocols, the best and brightest investigators provide an up-to-date and in-depth description of basic methods and protocols.[...]

Contents


Fields of interest

Cell Biology; Nucleic Acid Chemistry

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available


109.95 €
ISBN 978-1-61779-004-1

Software Tools and Algorithms for Biological Systems

"Software Tools and Algorithms for Biological Systems" is composed of a collection of papers received in response to an announcement that was widely distributed to academicians and practitioners in the broad area of computational biology and software tools. Also, selected authors of accepted papers of BIOCOMP'09 proceedings (International Conference on Bioinformatics and Computational Biology: July 13-16, 2009; Las Vegas, Nevada, USA) were invited to submit the extended versions of their papers for evaluation.

Features

"Software Tools and Algorithms for Biological Systems" is composed of a collection of papers received in response to an announcement that was widely distributed to academicians and practitioners in the broad area of computational biology and software tools. Also, selected authors of accepted papers of BIOCOMP'09 proceedings (International Conference on Bioinformatics and Computational Biology: July 13-16, [...]

Contents


Fields of interest

Bioinformatics; Computational Biology / Bioinformatics; Systems Biology

Target groups

Research

Type of publication

Contributed volume

Available


169,95 €

Wild Crop Relatives: Genomic and Breeding Resources

Cereals

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremediation. Wild Crop Relatives: Genomic and Breeding Resources comprises 10 volumes on Cereals, Millets and Grasses, Oilseeds, Legume Crops and Forages, Vegetables, Temperate Fruits, Tropical and Subtropical Fruits, Industrial Crops, Plantation and Ornamental Crops, and Forest Trees. It contains 125 chapters written by nearly 400 well-known authors from about 40 countries.

Features

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further[...]

Contents


Fields of interest

Plant Breeding / Biotechnology; Plant Genetics and Genomics; Agriculture; Biodiversity

Target groups

Research

Type of publication

Contributed volume

Available


169,95 €
ISBN 978-3-642-14227-7
Linguistics

L. Baunaz, University of Geneva, Switzerland

The Grammar of French Quantification

This book is the first extensive study on French Quantification in the field of Syntax. It provides a typology of four main quantified noun phrases in French (existential, universal, negative and wh-), detailing their syntactic, semantic and prosodic behaviors and showing that they can be reduced to two classes—Split-DP structures or Floating quantification. Relying on syntax and semantics, the book establishes a three-way structural typology of wh in situ phrases and extends it to existentials. It pays special attention to the prosodic properties associated with their different readings and proposes an analysis of the distribution of subextraction and pied-piping. Similarly based on semantic and syntactic tests, the book reveals N(egative) words to be universal Quantifiers. It proposes a new structure of N-words in terms of constituent negation and includes a detailed analysis of the difference between not an N and not all the N in French.

Features
This book is the first extensive study on French Quantification in the field of Syntax. It provides a typology of four main quantified noun phrases in French (existential, universal, negative and wh-), detailing their syntactic, semantic and prosodic behaviors and showing that they can be reduced to two classes—Split-DP structures or Floating quantification. Relying on syntax and semantics, the book proposes a new structure of N-words in terms of constituent negation and includes a detailed analysis of the difference between not an N and not all the N in French.

Contents
List of Abbreviations.- Chapter 1.- Chapter 2.- Chapter 3.- Chapter 4.- Chapter 5.- Chapter 6.- Appendix.- References.- Index.

Fields of interest
Syntax; Semantics

Target groups
Research

Type of publication
Monograph

Available
99,95 € ISBN 978-94-007-0620-0

Materials Science

F.A. Lasagni, Andalusian Foundation for Aerospace Development, Seville, Spain; A.F. Lasagni, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany (Eds.)

Fabrication and Characterization in the Micro-Nano Range

New Trends for Two and Three Dimensional Structures

This book shows an update in the field of micro/nano fabrications techniques of two and three dimensional structures as well as ultimate three dimensional characterization methods from the atom range to the micro scale. Several examples are presented showing their direct application in different technological fields such as microfluidics, photonics, biotechnology and aerospace engineering, between others. The effects of the microstructure and topography on the macroscopic properties of the studied materials are discussed, together with a detailed review of 3D imaging techniques.

Features
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Supplementary Cementing Materials

This book is an attempt to consolidate the published research related to the use of Supplementary Cementing Materials in cement and concrete. It comprises of five chapters. Each chapter is devoted to a particular supplementing cementing material. It is based on the literature/research findings published in journals/conference proceeding, etc. Topics covered in the book are: coal fly ash, silica fume (SF), granulated blast furnace slag (GGBS), metakaolin (MK), and rice husk ash (RHA). Each chapter contains introduction, properties of the waste material/by-product, its potential usage, and its effect on the properties of fresh and hardened concrete and other cement based materials.

Features
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Advanced Mathematical Methods for Finance

This book presents innovations in the mathematical foundations of financial analysis and numerical methods for finance and applications to the modeling of risk. The topics selected include measures of risk, credit contagion, insider trading, information in finance, stochastic control and its applications to portfolio choices and liquidation, models of liquidity, pricing, and hedging. The models presented are based on the use of Brownian motion, Levy processes and jump diffusions. Moreover, fractional Brownian motion and ambit processes are also introduced at various levels. The chosen blend of topics gives an overview of the frontiers of mathematics for finance. New results, new methods and new models are all introduced in different forms according to the subject. Additionally, the existing literature on the topic is reviewed. The diversity of the topics makes the book suitable for graduate students, researchers and practitioners in the areas of financial modeling and quantitative finance.

Features

Fuel cells are widely regarded as the future of the power and transportation industries. Intensive research in this area now requires new methods of fuel cell operation modeling and cell design. Typical mathematical models are based on the physical descrip- tion of fuel cells and require a detailed knowledge of the microscopic properties that govern both chemical and electrochemical reactions. Advanced Methods of Solid Oxide Fuel Cell Modeling proposes the alternative methodology of generalized artificial neural networks (ANN) solid oxide fuel cell (SOFC) modeling. Advanced Methods of Solid Oxide Fuel Cell Modeling provides a comprehensive description of modern fuel cell theory and a guide to the mathematical modeling of SOFCs, with particular emphasis on the use of ANNs. Up to now, most of the equations involved in SOFC models have required the addition of numerous factors that are difficult to determine. The artificial neural network (ANN) can be applied to simulate an object’s behavior.

Contents


Fields of interest

Mathematical Modeling and Industrial Mathematics; Industrial Chemistry / Chemical Engineering; Power Electronics, Electrical Machines and Networks; Artificial Intelligence (incl. Robotics)

Target groups

Professional/practitioner

Type of publication

Monograph

Available

2011. XIV, 217 p. 209 illus., 39 in color. (Green Energy and Technology) Hardcover

99,95 €
This volume contains articles that cover a wide spectrum of mathematical topics. Some are surveys of hot research topics in contemporary mathematics. The articles develop various areas of mathematics including pure mathematics, applied mathematics, interdisciplinary sciences and mathematical physics.

**Features**
This volume contains articles that cover a wide spectrum of mathematical topics. Some are surveys of hot research topics in contemporary mathematics. The articles develop various areas of mathematics including pure mathematics, applied mathematics, interdisciplinary sciences and mathematical physics.

**Fields of interest**
Applications of Mathematics; Mathematical Methods in Physics

**Target groups**
Research

**Type of publication**
Proceedings

**Available**

139,95 €

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**Analysis and Design of Nonlinear Control Systems**

'Analysis and Design of Nonlinear Control Systems' provides a comprehensive and up to date introduction to nonlinear control systems, including system analysis and major control design techniques. The book is self-contained, providing sufficient mathematical foundations for understanding the contents of each chapter. Scientists and engineers engaged in the field of Nonlinear Control Systems will find it an extremely useful handy reference book. Dr. Daizhan Cheng, a professor at Institute of Systems Science, Chinese Academy of Sciences, has been working on the control of nonlinear systems for over 30 years and is currently a Fellow of IEEE and a Fellow of IFAC, he is also the chairman of Technical Committee on Control Theory, Chinese Association of Automation.

**Features**
- Analysis and Design of Nonlinear Control Systems' provides a comprehensive and up to date introduction to nonlinear control systems, including system analysis and major control design techniques. The book is self-contained, providing sufficient mathematical foundations for understanding the contents of each chapter. Scientists and engineers engaged in the field of Nonlinear Control Systems will find it an extremely useful handy reference book. Dr. Daizhan Cheng, a professor at Institute of Systems Science, Chinese Academy of Sciences, has been working on the control of nonlinear systems for over 30 years and is currently a Fellow of IEEE and a Fellow of IFAC, he is also the chairman of Technical Committee on Control Theory, Chinese Association of Automation.

**Contents**

**Fields of interest**
- Systems Theory; Control; Control Engineering

**Target groups**
- Research

**Type of publication**
- Monograph

**Available**
2011. Approx. 690 p. 110 illus. Hardcover

99,95 €
ISBN 978-3-642-11549-3

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**An Introduction to the Mathematical Theory of Inverse Problems**

This book introduces the reader to the area of inverse problems. The study of inverse problems is of vital interest to many areas of science and technology such as geophysical exploration, system identification, nondestructive testing and ultrasonic tomography. The aim of this book is twofold: in the first part, the reader is exposed to the basic notions and difficulties encountered with ill-posed problems. Basic properties of regularization methods for linear ill-posed problems are studied by means of several simple analytical and numerical examples. The second part of the book presents two special nonlinear inverse problems in detail: the inverse spectral problem and the inverse scattering problem. The corresponding direct problems are studied with respect to existence, uniqueness and continuous dependence on parameters. Then some theoretical results as well as numerical procedures for the inverse problems are discussed. The choice of material and its presentation in the book are new, thus making [...]
Blow-up Theories for Semilinear Parabolic Equations

There is an enormous amount of work in the literature about the blow-up behavior of evolution equations. It is our intention to introduce the theory by emphasizing the methods while seeking to avoid massive technical computations. To reach this goal, we use the simplest equation to illustrate the methods; these methods very often apply to more general equations.

Features
There is an enormous amount of work in the literature about the blow-up behavior of evolution equations. It is our intention to introduce the theory by emphasizing the methods while seeking to avoid massive technical computations. To reach this goal, we use the simplest equation to illustrate the methods; these methods very often apply to more general equations.

Contents
1 Introduction.- 2 A review of elliptic theories.- 3 A review of parabolic theories.- 4 A review of fixed point theorems.- 5 Finite time Blow-up for evolution equations.- 6 Steady-State solutions.- 7 Blow-up rate.- 8 Asymptotically self-similar blow-up solutions.- 9 One space variable case

Fields of interest
Partial Differential Equations; Applications of Mathematics; Analysis

Dynamics, Games and Science I
DYNA 2008, in Honor of Mauricio Peixoto and David Rand, University of Minho, Braga, Portugal, September 8-12, 2008

Dynamics, Games and Science I and II are a selection of surveys and research articles written by leading researchers in mathematics. The majority of the contributions are on dynamical systems and game theory, focusing either on fundamental and theoretical developments or on applications to modeling in biology, econometrics, engineering, finances and psychology. The papers are based on talks given at the International Conference DYNA 2008, held in honor of Mauricio Peixoto and David Rand at the University of Braga, Portugal, on September 8-12, 2008. The aim of these volumes is to present cutting-edge research in these areas to encourage graduate students and researchers in mathematics and other fields to develop them further.

Features
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Contents

Fields of interest
Dynamical Systems and Ergodic Theory; Game Theory, Economics, Social and Behavioral Sciences; Theoretical, Mathematical and Computational Physics; Mathematical Methods in Physics

Target groups
Research

Eigenvalues, Embeddings and Generalised Trigonometric Functions

The main theme of the book is the study, from the standpoint of s-numbers, of integral operators of Hardy type and related Sobolev embeddings. In the theory of s-numbers the idea is to attach to every bounded linear map between Banach spaces a monotone decreasing sequence of non-negative numbers with a view to the classification of operators according to the way in which these numbers approach a limit: approximation numbers provide an especially important example of such numbers. The asymptotic behavior of the s-numbers of Hardy operators acting between Lebesgue spaces is determined here in a wide variety of cases. The proof methods involve the geometry of Banach spaces and generalized trigonometric functions; there are connections with the theory of the p-Laplacian.

Features
The main theme of the book is the study, from the standpoint of s-numbers, of integral operators of Hardy type and related Sobolev embeddings. In the theory of s-numbers the idea is to attach to every bounded linear map between Banach spaces a monotone decreasing sequence of non-negative numbers with a view to the classification of operators according to the way in which these numbers approach a limit: [..]

Contents
1 Basic material.- 2 Trigonometric generalisations.- 3 The Laplacian and some natural variants.- 4 Hardy operators.- 5 s-Numer operators and generalised trigonometric functions.- 6 Estimates of s-numbers of weighted Hardy operators.- 7 More refined estimates.- 8 A non-linear integral system.- 9 Hardy operators on variable exponent spaces

Fields of interest
Analysis; Approximations and Expansions; Functional Analysis; Special Functions; Ordinary Differential Equations; Mathematics Education

Target groups
Graduate

Available
44,95 € ISBN 978-3-642-18267-9
The theory of elliptic partial differential equations has undergone an important development over the last two centuries. Together with electrostatics, heat and mass diffusion, hydrodynamics and many other applications, it has become one of the most richly enhanced fields of mathematics. This monograph undertakes a systematic presentation of the theory of general elliptic operators. The author discusses a priori estimates, normal solvability, the Fredholm property, the index of an elliptic operator, operators with a parameter, and nonlinear Fredholm operators. Particular attention is paid to elliptic problems in unbounded domains which have not yet been sufficiently treated in the literature and which require some special approaches. The book also contains an analysis of non-Fredholm operators and discrete operators as well as extensive historical and bibliographical comments. The selected topics and the author’s level of discourse will make this book a most useful resource for researchers.

Features

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Contents


Fields of interest

Partial Differential Equations

Target groups

Research

Type of publication

Monograph

Available


99,95 €
ISBN 978-3-0346-0536-6

Foundation Theories of Classical and Constructive Mathematics

The book “Foundation Theories of Classical and Constructive Mathematics” is a book on the classical topic of foundations of mathematics. Its originality resides mainly in its treating at the same time foundations of classical and foundations of constructive mathematics. This confrontation of two kinds of foundations contributes to answering questions such as: Are foundations/foundational theories of classical mathematics of a different nature compared to those of constructive mathematics? Do they play the same role for theresp. mathematics? Are there connections between the two kinds of foundational theories? etc. The confrontation and comparison is often implicit and sometimes explicit. Its great advantage is to extend the traditional discussion of the foundations of mathematics and to render it at the same time more subtle and more differentiated. Another important aspect of the book is that some of its contributions are of a more philosophical, others of a more technical nature. This double

Features

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Contents

Introduction : Giovanni SommarugaPart I: Senses of foundations of mathematicsBob Hale, The Problem of Mathematical ObjectsGoeffrey Hellman, Foundations of FrameworksPenelope Maddy, Set Theory as a FoundationStewart Shapiro, Foundations, Foundationalism, and Category Theory-. Part II: Foundations of classical mathematicsSteve Awodey, From Sets to Types, to Categories, to SetsSolomon Feferman, Enriched Stratified Systems for the Foundations of Category TheoryColin McLarty, Recent Debate over Categorical Foundations-. Part III: Between foundations of classical and foundations of constructive mathematics. This confrontation of two kinds of foundations contributes to answering questions such as: Are foundations/foundational theories of classical and constructive mathematics of a different nature compared to those of constructive mathematics? Do they play the same role for the resp. mathematics? Are there connections between the two kinds of foundational theories? etc. The confrontation and comparison is often implicit and sometimes explicit. Its great advantage is to extend the traditional discussion of the foundations of mathematics and to render it at the same time more subtle and more differentiated. Another important aspect of the book is that some of its contributions are of a more philosophical, others of a more technical nature. This double

Fields of interest

Approximations and Expansions; Sequences, Series, Summability; Special Functions; Combinatorics

Target groups

Lower undergraduate

Type of publication

Undergraduate textbook

Available


56,95 €

Introduction to Calculus and Classical Analysis

The text is completely self-contained and starts with the real number axiom system. The integral is defined as the area under the graph, while the area is defined for every subset of the plane. There are applications from many parts of analysis, e.g., convexity, the Cantor set, continued fractions, the AGM, the theta and zeta functions, transcendental numbers, the Bessel and gamma functions, and many more. Traditionally transcendentally presented material.

Features

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Contents


Fields of interest

Approximations and Expansions; Sequences, Series, Summability; Special Functions; Combinatorics

Target groups

Lower undergraduate

Type of publication

Undergraduate textbook

Available

2011, XII, 263 p. 70 illustr. (Undergraduate Texts in Mathematics) Hardcover

56,95 €

Introduction to Calculus and Classical Analysis

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Fields of interest

Approximations and Expansions; Sequences, Series, Summability; Special Functions; Combinatorics

Target groups

Lower undergraduate

Type of publication

Undergraduate textbook

Available

2011, XII, 263 p. 70 illustr. (Undergraduate Texts in Mathematics) Hardcover

56,95 €
## Lebesgue and Sobolev Spaces with Variable Exponents

The field of variable exponent function spaces has witnessed an explosive growth in recent years. The standard reference article for basic properties is already 20 years old. Thus this self-contained monograph collecting all the basic properties of variable exponent Lebesgue and Sobolev spaces is timely and provides a much-needed accessible reference work utilizing consistent notation and terminology. Many results are also provided with new and improved proofs. The book also presents a number of applications to PDE and fluid dynamics.

### Contents

- Introduction
- A framework for function spaces
- Variable exponent Lebesgue spaces
- The maximal operator
- The generalized Muckenhoupt condition
- Classical operators
- Transfer techniques
- Introduction to Sobolev spaces
- Capacities
- Fine techniques
- Introduction to Sobolev spaces
- Variable exponent Lebesgue and Sobolev spaces
- Some aspects of atmospheric discretizations
- Part II. Conservation laws, finite-volume methods, remapping techniques and spherical discretizations
- Part III. Some aspects of atmospheric dynamical cores

### Fields of interest

- Analysis
- Functional Analysis
- Partial Differential Equations

### Target groups

- Graduate

### Type of publication

- Monograph

### Available


89.95 €  
ISBN 978-3-642-18362-1

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## Noncommutative Functional Calculus

### Theory and Applications of Slice Hyperholomorphic Functions

This book presents a functional calculus for tuples of not necessarily commuting linear operators. In particular, a functional calculus for quaternionic linear operators is developed. These calculi are based on a new theory of hyperholomorphicity for functions with values in a Clifford algebra: the so-called slice monogenic functions which are carefully described in the book. In the case of functions with values in the algebra of quaternion linear operators, these functions are named slice regular functions. 

### Contents

- Introduction
- A framework for function spaces
- Variable exponent Lebesgue spaces
- The maximal operator
- The generalized Muckenhoupt condition
- Classical operators
- Transfer techniques
- Introduction to Sobolev spaces
- Capacities
- Fine techniques
- Introduction to Sobolev spaces
- Variable exponent Lebesgue and Sobolev spaces
- Some aspects of atmospheric discretizations
- Part II. Conservation laws, finite-volume methods, remapping techniques and spherical discretizations
- Part III. Some aspects of atmospheric dynamical cores

### Fields of interest

- Computational Mathematics
- Partial Differential Equations
- Meteorology / Climatology

### Target groups

- Research

### Type of publication

- Monograph

### Available


89.95 €  
ISBN 978-3-642-18362-1

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## Numerical Techniques for Global Atmospheric Models

This book surveys recent developments in numerical techniques for global atmospheric models. It is based upon a collection of lectures prepared by leading experts in the field. The chapters reveal the multitude of steps that determine the global atmospheric model design. They encompass the choice of the equation set, computational grids on the sphere, horizontal and vertical discretizations, time integration methods, filtering and diffusion mechanisms, conservation properties, tracer transport, and considerations for designing models for massively parallel computers. A reader interested in applied numerical methods but also the many facets of atmospheric modeling should find this book of particular relevance.

### Contents

- Part I. Equations of motion and some basic ideas on discretizations
- Pat II. Conservation laws, finite-volume methods, remapping techniques and spherical grids
- Part III. Some aspects of atmospheric dynamical cores

### Fields of interest

- Computational Mathematics
- Partial Differential Equations
- Meteorology / Climatology

### Target groups

- Research

### Type of publication

- Contributed volume

### Available


59.95 €  
ISBN 978-3-642-11639-1
Probabilistic and Statistical Aspects of Quantum Theory

This book is devoted to aspects of the foundations of quantum mechanics in which probabilistic and statistical concepts play an essential role. The main part of the book concerns the quantitative statistical theory of quantum measurement, based on the notion of positive operator-valued measures. During the past years there has been substantial progress in this direction, stimulated to a great extent by new applications such as Quantum Optics, Quantum Communication and high-precision experiments. The questions of statistical interpretation, quantum symmetries, theory of canonical commutation relations and Gaussian states, uncertainty relations as well as new fundamental bounds concerning the accuracy of quantum measurements, are discussed in this book in an accessible yet rigorous way. Compared to the first edition, there is a new Supplement devoted to the hidden variable issue. Comments and the bibliography have also been extended and updated.

Contents

Fields of interest
Probability Theory and Stochastic Processes

Probability Inequalities

Inequality has become an essential tool in many areas of mathematical research, for example in probability and statistics where it is frequently used in the proofs. "Probability Inequalities" covers inequalities related with events, distribution functions, characteristic functions, moments and random variables (elements) and their sum. The book shall serve as a useful tool and reference for scientists in the areas of probability and statistics, and applied mathematics.

Contents

Fields of interest
Probability Theory and Stochastic Processes; Statistical Theory and Methods

Pseudo-Differential Operators: Analysis, Applications and Computations


Fields of interest
Partial Differential Equations; Operator Theory; Geometry; Electrical Engineering

Available
2011. 334 p. (Monographs (Scuola Normale Superiore), Vol. 1) Softcover
27,00 € ISBN 978-88-7642-375-8

79,95 € ISBN 978-3-642-05260-6

L. Rodino, University of Torino, Italy; M.W. Wong, York University, Toronto, ON, Canada; H. Zhu, York University, Toronto, ON, Canada (Eds.)
Random Perturbation of PDEs and Fluid Dynamic Models

École d’Été de Probabilités de Saint-Flour XL – 2010

The book deals with the random perturbation of PDEs which lack well-posedness, mainly because of their non-uniqueness, in some cases because of blow-up. The aim is to show that noise may restore uniqueness or prevent blow-up. This is not a general or easy-to-apply rule, and the theory presented in the book is in fact a series of examples with a few unifying ideas. The role of additive and bilinear multiplicative noise is described and a variety of examples are included, from abstract parabolic evolution equations with non-Lipschitz nonlinearities to particular fluid dynamical models, like the dyadic model, linear transport equations and motion of point vortices.

Features
This volume deals with the random perturbation of PDEs which lack well-posedness, mainly because of their non-uniqueness, in some cases because of blow-up. The aim is to show that noise may restore uniqueness or prevent blow-up. This is not a general or easy-to-apply rule, and the theory presented in the book is in fact a series of examples with a few unifying ideas. The role of additive and bilinear [...]
Spherical Tube Hypersurfaces

We consider Levi non-degenerate tube hypersurfaces in complex linear space which are 'spherical,' that is, locally CR-equivalent to the real hyperquadric. Spherical hypersurfaces are characterized by the condition of the vanishing of the CR-curvature form, so such hypersurfaces are flat from the CR-geometric viewpoint. On the other hand, such hypersurfaces are of interest from the point of view of affine geometry. Thus our treatment of spherical tube hypersurfaces in this book is two-fold: CR-geometric and affine-geometric. Spherical tube hypersurfaces turn out to possess remarkable properties. For example, every such hypersurface is real-analytic and extends to a closed real-analytic spherical tube hypersurface in complex space. One of our main goals is to give an explicit affine classification of closed spherical tube hypersurfaces whenever possible. In this book we offer a comprehensive exposition of the theory of spherical tube hypersurfaces starting with the idea proposed in the pioneering work.[...]

Features

We examine Levi non-degenerate tube hypersurfaces in complex linear space which are 'spherical,' that is, locally CR-equivalent to the real hyperquadric. Spherical hypersurfaces are characterized by the condition of the vanishing of the CR-curvature form, so such hypersurfaces are flat from the CR-geometric viewpoint. On the other hand, such hypersurfaces are also of interest from the point of view of affine geometry.[...]

Fields of interest

Several Complex Variables and Analytic Spaces

Target groups

Research

Type of publication

Monograph

Available

44,95 €
ISBN 978-3-642-19782-6

Tantrasangraha of Nilakantha Somayaji

Tantrasangraha, composed by the renowned Kerala astronomer Nilakantha Somayaji (c. 1444–1545 CE) ranks along with Šrīyabhattya of Šrīyabha and Siddhashironmanī of Bhaskaracharya as one of the major works which significantly influenced further work on astronomy in India. One of the distinguishing features is the introduction of a major revision of the traditional Indian planetary model. Nilakantha arrived at a unified theory of planetary latitudes and a better formulation of the equation of centre for the interior planets (Mercury and Venus) than was previously available. In preparing the translation and explanatory notes, K. Ramasubramanian and M. S. Sriram have used authentic Sanskrit editions of Tantrasangraha by Surand Kunjan Pillai and K V Sarma. All verses have been translated into English, which have been supplemented with detailed explanations including all necessary mathematical relations, illustrative examples, figures and tables using modern mathematical notation.

Features

Tantrasa#graha, composed by the renowned Ker#ala astronomer Nilak#an#tha Somayaji (c. 1444–1545 CE) ranks along with Šrīyabhat#tya of Šrīyabha and Siddha#शिर#मणी of Bh#ska#चarya as one of the major works which significantly influenced further work on astronomy in India. One of the distinguishing features of this text is the introduction of a major revision of the traditional planetary models which includes a [...]

Contents

Mean longitudes of planets.- True longitudes of planets.- Gnomonic shadow.- Lunar eclipse.- Solar eclipse.- Vya#t#ta.- Reduction to observation.- Elevation of lunar horns.- Appendices.

Fields of interest

History of Mathematics; Astronomy, Observations and Techniques

Target groups

Research

Type of publication

Monograph

Available

129,95 €

The Elements of Operator Theory

This fully revised, updated, and corrected edition of The Elements of Operator Theory includes a significant expansion of problems and solutions used to illustrate the principles of operator theory. Written in a user-friendly, motivating style, it covers the fundamental topics of the field in a systematic fashion while avoiding a formula-calculation approach. The book maintains the logical and linear organization of the title’s first edition, progressing through set theory, algebraic structures, topological structures, Banach spaces, and Hilbert spaces before culminating in a discussion of the Spectral Theorem. A self-contained textbook, The Elements of Operator Theory, Second Edition is an excellent resource for the classroom as well as a self-study reference for researchers. Prerequisites comprise an introduction to analysis and basic experience with functions of a complex variable, which most first-year graduate students in mathematics, engineering, or other formal sciences have already acquired.[...]

Features

“The author endeavors to present the concepts and ideas as an alternative to the computational approach, trying to avoid long calculations by stressing the mathematical thoughts behind the statements. . . . many problems are stated throughout the book, very often accompanied by hints.” —Mathematical Reviews (review of the first edition)“This is a rigorous, logically [...]

Contents


Fields of interest

Operator Theory; Functional Analysis; Applications of Mathematics

Target groups

Research

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. XV, 539 p. Hardcover
64,95 €
The Structure of the Real Line

The rapid development of set theory in the last fifty years, mainly by obtaining plenty of independence results, strongly influenced an understanding of the structure of the real line. This book is devoted to the study of the real line and its subsets taking into account the recent results of set theory. Whenever possible the presentation is done without the full axiom of choice. Since the book is intended to be self-contained, all necessary results of set theory, topology, measure theory, and descriptive set theory are revisited with the purpose of eliminating superfluous use of an axiom of choice. The duality of measure and category is studied in a detailed manner. Several statements pertaining to properties of the real line are shown to be undecidable in set theory. The metamathematics behind set theory is shortly explained in the appendix. Each section contains a series of exercises with additional results.

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Contents

Preface.- 1 Introduction.- 2 The Real Line.- 3 Topology of Euclidean Spaces.- 4 Measure Theory.- 5 Useful Tools and Technologies.- 6 Descriptive Set Theory.- 7 Decline and Fall of the Duality.- 8 Special Sets of Reals.- 9 Additional Axioms.- 10 Undecidable Statements.- 11 Appendix.- Bibliography.- Index of Notation.- Index.

Fields of interest

Analysis

Target groups

Research

Type of publication

Monograph

Available


99.95 €

ISBN 978-3-0348-0005-1

Topology, Geometry and Gauge fields

Interactions

A study of topology and geometry, beginning with a comprehensible account of the extraordinary and rather mysterious impact of mathematical physics, and especially gauge theory, on the study of the geometry and topology of manifolds. The focus of the book is the Yang-Mills-Higgs field and some considerable effort is expended to make clear its origin and significance in physics. Much of the mathematics developed here to study these fields is standard, but the treatment always keeps one eye on the physics and sacrifices generality in favor of clarity. This second edition has replaced a brief appendix in the first on the Seiberg-Witten equations with a much more detailed survey of Donaldson-Witten Theory and the Witten Conjecture regarding the relationship between Donaldson and Seiberg Witten invariants. A large number of exercises are included to encourage active participation on the part of the reader. Review from first edition: "It is unusual to find a book so carefully tailored to the needs of this [...]"

Features

This volume is intended to carry on the program, initiated in Topology, Geometry, and Gauge Fields: Foundations (Springer, 2010), of exploring the interrelations between particle physics and topology that arise from their shared notion of a gauge field. The text begins with a synopsis of the geometrical background assumed of the reader (manifolds, Lie groups, bundles, connections, etc.). There follows a [...]"

Contents


Fields of interest

Geometry, Topological, Mathematical and Computational Physics; Combinatorics

Target groups

Research

Type of publication

Monograph

Available


69.95 €

ISBN 978-1-4419-6986-6
**Wavelets and Multiscale Analysis**

**Theory and Applications**

Since its emergence as an important research area in the early 1980s, the topic of wavelets has undergone tremendous development on both theoretical and applied fronts. Myriad research and survey papers and monographs have been published on the subject, documenting different areas of applications such as sound and image processing, denoising, data compression, tomography, and medical imaging. The study of wavelets remains a very active field of research, and many of its central techniques and ideas have evolved into new and promising research areas. This volume, a collection of invited contributions developed from talks at an international conference on wavelets, is divided into three parts: Part I is devoted to the mathematical theory of wavelets and features several papers on wavelet sets and the construction of wavelet bases in different settings. Part II looks at the use of multiscale harmonic analysis for understanding the geometry of large data sets and extracting information from them. Part III focuses on applications.

**Features**

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**Contents**


**Fields of interest**

Fourier Analysis; Signal, Image and Speech Processing; Abstract Harmonic Analysis; Appl. Mathematics / Computational Methods of Engineering.

**Target groups**

Research.

**Type of publication**

Monograph.

**Available**

2011, XIV, 335 p. 87 illus. (Applied and Numerical Harmonic Analysis) Hardcover

109.95 €

ISBN 978-0-8176-8094-7

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**Addiction Medicine**

**Science and Practice**

The spectrum of addiction disorders presents practitioners with numerous challenges—among them the widening gap between a growing evidence base and the translation of this knowledge into treatment outcomes. Addiction Medicine addresses this disconnect, clearly explaining the role of brain function in drug taking and other habit-forming behaviors, and applying this biobehavioral framework to the delivery of evidence-based treatment. Its state-of-the-art coverage provides clinically relevant details on not only traditional sources of addiction such as cocaine, opiates, and alcohol, but also more recently recognized substances of abuse (e.g., steroids, inhalants) as well as behavioral addictions (e.g., binge eating, compulsive gambling, hoarding). Current behavioral and medical therapies are discussed in depth, and the book’s close attention to social context gives readers an added lens for personalizing treatment. An interdisciplinary panel of expert contributors offers the most up-to-date information.

**Features**

Addiction Medicine Science and Practice Edited by Bankole A. Johnson, D.Sc., M.D., Professor of Psychiatry and Neurobehavioral Sciences, Medicine, and Neuroscience at the University of Virginia, Charlottesville, VA, USA. The spectrum of addiction disorders presents practitioners with numerous challenges—among them the widening gap between a growing evidence base and the translation of this knowledge into practice.

**Contents**


**Fields of interest**

Psychiatry; Health Psychology; Psychopharmacology; Medicine (general); Social Work; General Practice / Family Medicine.

**Target groups**

Professional/practitioner.

**Type of publication**

Handbook.

**Available**

2011, LVIII, 1633 p. 113 illus., 46 in color. Hardcover

329.00 €
Cardiac Electrophysiology

Clinical Case Review

Clinical cardiac electrophysiology is one of the most rapidly expanding fields in cardiology. There are currently no comprehensive case based books in this field. A Case Review of Cardiac Electrophysiology is a case based review of cardiac electrophysiology. The aim of this book is to provide a comprehensive case based review of cardic electrophysiology. It will include implantable device cases as well as ablation cases and difficult clinical cases and may be used as a useful review in cardiac electrophysiology for those taking board examinations. There will also be cases that will be useful for associate professionals working in the field of cardiac electrophysiology including those individuals working for industry.

Features

As the field of cardiac electrophysiology evolves, the challenge remains to educate new generations of cardiac electrophysiologists with the basics as well as the latest advances in the field. While there are many outstanding resources providing in-depth review of electrophysiology topics, there are few case-based books that comprehensively cover clinical electrophysiology, devices and ablation. Case review […]

Contents


Fields of interest

Cardiology; Internal Medicine; Cardiac Surgery

Target groups

Professional/practitioner

Type of publication

Professional book

Available

2011. X, 702 p. 606 illus., 77 in color. Hardcover

139,95 €


Dyspepsia in Clinical Practice

Although dyspepsia has been investigated for a long period of time, there is no international agreement on what constitutes this condition nor any standardized guidelines. National guidelines followed by practitioners in different countries vary in diagnostic and therapeutic approach, underlining the necessity for a unique definition worldwide. Dyspepsia in Clinical Practice summarizes the current guidelines while offering a unified, practical definition of dyspepsia, and a diagnostic algorithm with an emphasis on the upper gastrointestinal endoscopy and rational first-line therapeutic approach based on epidemiology, pathophysiology, clinical presentation, diagnostic workup and response to previous therapy. Up-to-date scientific information about dyspepsia is present from a practical, clinician’s point of view. Written by experts in the field, this volume addresses dyspepsia in childhood and in the elderly, a very important issue often insufficiently emphasized in the literature. Guidelines are […]

Features

Although dyspepsia has been investigated for a long period of time, there is no international agreement on what constitutes this condition nor any standardized guidelines. National guidelines followed by practitioners in different countries vary in diagnostic and therapeutic approach, underlining the necessity for a unique definition worldwide. Dyspepsia in Clinical Practice summarizes the current […]

Contents


Fields of interest

Gastroenterology; Primary Care Medicine; Infectious Diseases; Pediatrics

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available


39,95 €

ISBN 978-1-4419-1729-4

Evidence Synthesis in Healthcare

A Practical Handbook for Clinicians


Features


Contents


Fields of interest

Health Promotion and Disease Prevention; Health Administration; Medicine (general)

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available

2011. XVIII, 326 p. 282 illus., 262 in color. Hardcover

139,95 €

Evolution of Radiation Oncology at Massachusetts General Hospital

The Massachusetts General Hospital (MGH) has a history of excellence and is internationally recognized as a world class medical center, providing quality medical care, advancing medicine through clinical and laboratory research and facilitating the education of exceptional health care professionals. The Massachusetts General Hospital Radiation Oncology Department, staff, residents and fellows, past and present, concur that MGH stands for Man’s Greatest Hospital. This decidedly immodest assessment is widely viewed amongst this group as being manifestly true, and that perception is clearly reflected in a marvelous esprit de corps. Such an unequivocally positive attitude is solidly based on the judgment that the best possible care is provided to each MGH patient, i.e. the patient is, in fact, Number One. There is a deep sense of pride in the contributions made by this department to the scientific advancement of oncology, and to progressively and substantially increasing the proportion of patients who...

Features
The Massachusetts General Hospital (MGH) has a history of excellence and is internationally recognized as a world class medical center, providing quality medical care, advancing medicine through clinical and laboratory research and facilitating the education of exceptional health care professionals. The Massachusetts General Hospital Radiation Oncology Department, staff, residents and fellows...

Contents
Early Culture and Medicine to 1895 and the Creation of the MGH.- Radiation Oncology and the MGH 1896-1945.- The New Optimism after WW II and the Decision for a Cancer Center at MGH 1945-70.- The New Department of Radiation Oncology 1970-75.- Photon and Electron Physics at MGH 1945-2008.- Proton Therapy Program.- Intraoperative Electron Beam Therapy.- Radiation Biology of Tumor and Normal Tissues Biomathematics and Biostatistics.- Clinical Advances by the MGH Radiation Department of Radiation Oncology.- Education Programs.- Special Lecture Series Radiation Therapists, Nurses, Medical...
Hemodynamic Monitoring Using Echocardiography in the Critically Ill

The hemodynamic evaluation of patients with acute circulatory failure and respiratory failure has in the past usually been performed using invasive procedures but in recent years less invasive monitoring devices have been introduced. Echocardiography can be used for both the diagnosis and the management of circulatory and respiratory failure. This book provides all the essential information required by readers in order to perform optimal hemodynamic management of the critically ill based on echocardiographic guidance. After an introductory section on basic principles, hemodynamic assessment using echocardiography is discussed in detail. The diagnosis and management of all types of circulatory and acute respiratory failure by means of echocardiography are then rigorously considered, and specific situations such as thoracic trauma and acute aortic syndrome are examined. The final section is devoted to future issues and applications.

Features

The hemodynamic evaluation of patients with acute circulatory failure and respiratory failure has in the past usually been performed using invasive procedures but in recent years less invasive monitoring devices have been introduced. Hemodynamic evaluation by echocardiography is based on the integration of simple indices that can be easily acquired within a few minutes at the bedside. Echocardiography can

Contents


Fields of interest

Intensive / Critical Care Medicine; Anesthesiology

Target groups

Professional/practitioner

Type of publication

Professional book

Available

2011. IX, 311 p. 262 illus., 235 in color. With DVD. Hardcover

129.95 €
ISBN 978-3-540-87954-1

Inflammatory Bowel Disease

Diagnosis and Therapeutics

As in the first edition of Inflammatory Bowel Disease this new edition continues to provide readers with a concise, yet in-depth review of many of the important areas in the history, epidemiology, pathogenesis, diagnosis, and treatment of the inflammatory bowel diseases (ulcerative colitis and Crohn’s disease), as well as associated issues: extraintestinal manifestations, ostomy care, women’s issues, economics, etc. This Second Edition provides the readers with up-to-date, state-of-the art approaches to these disease states, with expansion into the newer topics that have emerged in the past few years which include the expansion of biological agents for treatment, new studies in the epidemiology of IBD, the changing economics of IBD, breakthroughs in new endoscopic evaluations, major advances in novel radiographic techniques, the detection of colorectal cancer in patients with IBD and new findings in the genetics of IBD. New Trend / Developments (* These all emerged since our last edition) The most [...] Features

This Second Edition of Inflammatory Bowel Disease: Diagnosis and Therapeutics, provides readers with the most up-to-date approaches to IBD states, expansion of biological agents of treatment, new studies in the epidemiology of IBD, the changing economics of IBD, major advances in novel radiographic techniques; which aid in the detection of colorectal cancer in patients with IBD and new findings in the [...] Contents


Fields of interest

Gastroenterology; Colorectal Surgery; Pathology; Diagnostic Radiology

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available

2011. XIII, 322 p. 36 illus., 20 in color. (Clinical Gastroenterology) Hardcover

159,95 €
ISBN 978-1-60327-432-6

Interventional Pericardiology

Pericardiocentesis, Pericardiodyoscopy, Pericardial Biopsy, Balloon Pericardiomy, and Intrapericardial Therapy

Interventional Pericardiology gives a unique and comprehensive view on an often neglected but clinically very important part of cardiovascular disease: The pericardium and the adjacent myocardium or epicardium. The authors of this up-to-date compendium on pericardial disease etiology, diagnostics and treatment, Professors Bernhard Maisch (Marburg), Arsen Ristic (Belgrade), Petar Seferovic (Belgrade) and Teresa Tsang (Rochester) focus on recent advances to the new window that has been opened to the heart by flexible and video-assisted pericardiodyoscopy, modern biochemical, immunohistological and molecular tools for the analysis of epicardial and pericardial biopsies, which have been acquired safely under pericardiodyoscopic control by the interventional pericardiologist. Their book adds brand-new information to the recent and so far only guidelines world-wide by the European Society of Cardiology on the management of pericardial diseases. This task-force has been chaired by the lead author B. Maisch. [...] Features

Interventional Pericardiology gives a unique and comprehensive view on an often neglected but clinically very important part of cardiovascular disease: The pericardium and the adjacent myocardium or epicardium. The authors of this up-to-date compendium on pericardial disease etiology, diagnostics and treatment, Professors Bernhard Maisch (Marburg), Arsen Ristic (Belgrade), Petar Seferovic (Belgrade) and Teresa Tsang [...] Contents


Cardiology

Target groups

Professional/practitioner

Type of publication

Professional book

Available

2011. XXII, 184 p. With DVD. Softcover

99,95 €
ISBN 978-3-642-11334-5
Laser and IPL Technology in Dermatology and Aesthetic Medicine

In this innovative textbook, renowned experts from the United States, Europe, and Asia present the most up-to-date information in the field of cutaneous laser surgery and intense pulsed light (IPL) technology. Technical and biophysical aspects of lasers and IPL devices are first discussed in depth to provide the reader with a sound understanding of basics. A series of richly illustrated chapters then carefully examine the numerous and diverse clinical applications of these techniques, highlighting both their potential and their limitations, including side-effects. In the concluding section, important miscellaneous topics are addressed, including cooling techniques, ethical and economic considerations, and laser safety. This book will be of benefit to novice and experienced practitioners alike. In addition to providing expert guidance on the use of lasers and IPL devices in more than 80 clinical indications, it examines the role of new techniques and includes sufficient information to assist the reader considering the purchase of laser or IPL equipment.

Features
In this innovative textbook, renowned experts from the United States, Europe, and Asia present the most up-to-date information in the field of cutaneous laser surgery and intense pulsed light (IPL) technology. Technical and biophysical aspects of lasers and IPL devices are first discussed in depth to provide the reader with a sound understanding of basics. A series of richly illustrated chapters then carefully examine the numerous and diverse clinical applications of these techniques, highlighting both their potential and their limitations, including side-effects. In the concluding section, important miscellaneous topics are addressed, including cooling techniques, ethical and economic considerations, and laser safety. This book will be of benefit to novice and experienced practitioners alike. In addition to providing expert guidance on the use of lasers and IPL devices in more than 80 clinical indications, it examines the role of new techniques and includes sufficient information to assist the reader considering the purchase of laser or IPL equipment.

Contents

Fields of interest
Dermatology; Plastic Surgery; General Practice / Family Medicine

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

2011, XII, 419 p. 286 illus., 272 in color. Hardcover
139,95 €
ISBN 978-3-642-03437-4

Medico-Legal Issues in Infectious Diseases
Guide For Physicians

The aim of this book is not to encourage defensive medical practice, but to help provide better, optimum care to patients and to be forthright and honest to our dear customers about our inevitable mistakes. This book will focus on clinical issues facing physicians in different settings (which can lead to malpractice), and the best approach to use to avoid litigations, and practice good medicine.

Features
Despite the fact that most physicians will encounter medical litigation at some point in their careers, they have few resources for navigating through legal issues within the body of medical literature. With this in mind, this volume provides guidance to physicians and researchers. As the latest in the Emerging Infectious Diseases of the 21st Century series, it gives case scenarios in the format of [...] (text continues)

Contents
Preface.- General Principles.- Complaints related to the head.- Conditions of the skin/soft tissue in the ER.- Litigation in infectious Obstetrics & Gynecology.- Looking Beyond the Obvious.- Failure to counsel can lead to litigation.- Litigations for unexpected adverse events.- Orthopedic complications.- Neurosurgical medico-legal issues.- Litigations in General Surgery.- Litigation for infection in plastic surgery.- Litigations for HIV-related complications.- Overview of medico-legal issues.- Index.

Fields of interest
Infectious Diseases; Life Sciences (general); Medical Law

Target groups
Professional/practitioner

Type of publication
Monograph

Available

2011, XVII, 291 p. 1 illus. (Emerging Infectious Diseases of the 21st Century) Hardcover
139,95 €

Neurodevelopmental Disabilities
Clinical Care for Children and Young Adults

Increasingly more and more children with developmental disabilities survive into adulthood. Pediatricians and other clinicians are called upon to care for an increasing number of children with developmental disabilities in their practice and thus there is a need for a practical guide specifically written for pediatricians and primary care clinicians that addresses major concepts of neurodevelopmental pediatrics. In the United States, the specialty training leading to a joint board certification by the American Board of Pediatrics and American Board of Psychiatry and Neurology, requires a total of 6 years of training (2 years of pediatrics, 1 year of neurology, 18 months of child neurology, 18 months of neurodevelopmental disabilities). As of December 2006, in the US, there were 241 pediatricians and 55 child neurologists certified in the subspecialty of Neurodevelopmental Disabilities. Thus most of the children with developmental disabilities are seen by pediatricians and therefore it is [...] (text continues)

Contents

Fields of interest
Medicine (general); Neurosciences; General Practice / Family Medicine; Maternal and Child Health; Neurology; Pediatrics

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

2011, XVIII, 495 p. Hardcover
139,95 €
B. Blessing, Robert Bosch Stiftung, Stuttgart, Germany

Pathways of Homoeopathic Medicine

Bettina Blessing’s study follows the progress of homoeopathic therapies up to World War II. It focuses mainly on the development of double and complex remedies which were highly controversial even at the times of Hahnemann, who also experimented with double remedies. Various orientations of homoeopathy, spagyric, naturopathy and conventional medicine advocated homoeopathic remedies and supported medical concepts that were based on ‘holistic’ views. One of the proponents of alternative healing methods was the renowned Berlin surgeon August Bier (1861-1949). For him, homoeopathy was one of several possible medical approaches and, in accordance with Heraclitus, he argued that a ‘harmonious view’ of medicine was not possible as long as one of them was excluded.

Features
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Contents

Fields of interest
Complementary & Alternative Medicine

Type of publication
Monograph

Available
2011, XI, 110 p. Hardcover
39.95 €
ISBN 978-3-642-14970-2

C. Nieder, University of Wisconsin, Madison, WI, USA; J.A. Langedijk, University Medical Center Groningen, The Netherlands (Eds.)

Re-irradiation: New Frontiers

New developments such as refined combined modality approaches and significant technical advances in radiation treatment planning and delivery are facilitating the re-irradiation of previously exposed volumes. As a consequence, both palliative and curative approaches can be pursued at various disease sites. Re-irradiation: New Frontiers is the first book to provide a comprehensive overview on current re-irradiation strategies. Re-irradiation methods, technical aspects, the role of combined therapy with anticancer drugs and hyperthermia, and normal tissue tolerance are all discussed in detail. In addition, disease-specific chapters document recent clinical results and future research directions. Professionals involved in radiation treatment planning and multimodal oncology treatment will find this book to be an invaluable aid in understanding the benefits and limitations of re-irradiation and in designing prospective trials.

Features
New developments such as refined combined modality approaches and significant technical advances in radiation treatment planning and delivery are facilitating the re-irradiation of previously exposed volumes. As a consequence, both palliative and curative approaches can be pursued at various disease sites. Re-irradiation: New Frontiers is the first book to provide a comprehensive overview on current [..]

Contents

Fields of interest
Imaging / Radiology; Radiotherapy; Oncology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, X, 226 p. 50 illus., 25 in color. (Radiation Oncology) Hardcover
179.95 €
ISBN 978-3-642-12467-9

E. Benenson, University of Cologne, Germany

Rheumatology

Clinical Scenarios

Rheumatology: Clinical Scenarios is a case-based learning tool for trainees in rheumatology. Professor Efim Benenson presents 73 clinical scenarios and 156 clinical images for the student of rheumatology to diagnose, whilst his expert commentary is provided in a separate section. As a further diagnostic aid, two ‘Rheumatology Trees’ are provided which summarize in turn the articular and musculoskeletal disorders, as well as the connective tissue disorders and vasculitides. Professor Benenson’s practice-oriented, didactic approach, and innovative organization of the rheumatic diseases is a valuable diagnostic aid to practicing rheumatologists and those teaching or training in rheumatology. Readers are recommended the companion book, Rheumatology: Syndromes and Symptoms, for further reading on Professor Benenson’s organization of the rheumatic diseases.

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Contents
Diagnostic Training and Rheumatology Trees.- Explanations of Figures and Case Reports with Individual Therapeutic Options.- Index of Figures and Clinical Scenarios with Syndromes (for self-assessment).

Fields of interest
Rheumatology; Internal Medicine; Dermatology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, XI, 137 p. 156 illus., 111 in color. Softcover
29.95 €
ISBN 978-0-85729-239-1

Efim Benenson, University of Cologne, Germany

Rheumatology: Clinical Scenarios

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Fields of interest
Rheumatology; Internal Medicine; Dermatology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, XI, 137 p. 156 illus., 111 in color. Softcover
29.95 €
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Fields of interest
Rheumatology; Internal Medicine; Dermatology

Target groups
Professional/practitioner

Type of publication
Monograph

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2011, XI, 137 p. 156 illus., 111 in color. Softcover
29.95 €
ISBN 978-0-85729-239-1

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Rheumatology

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Shaped Beam Radiosurgery

State of the Art

Novalis® Shaped Beam Radiosurgery has set new standards by delivering highly precise radiation treatments to tumors anywhere in the body through the use of a proprietary multileaf collimator. By shaping the radiation beam to the exact contours of the tumor or lesion, Novalis permits maximum dose delivery to the entire tumor while protecting healthy tissue; this makes it eminently suitable for the treatment of irregularly shaped tumors. This book provides a complete guide to radiosurgery treatments with Novalis. After a thorough discussion of the clinical and technical basis for Shaped Beam Radiosurgery, current clinical applications are considered in detail, including brain, body, skull base, and spinal tumors as well as arteriovenous malformations. Careful consideration is also given to future developments and applications, including new technologies that promise to offer even more accurate treatments. This state-of-the-art book will appeal to a wide audience of physicians and their[...]

Features

Novalis® Shaped Beam Radiosurgery has set new standards by delivering highly precise radiation treatments to tumors anywhere in the body through the use of a proprietary multileaf collimator. By shaping the radiation beam to the exact contours of the tumor or lesion, Novalis permits maximum dose delivery to the entire tumor while protecting healthy tissue; this makes it eminently suitable for the treatment of [...]

Contents


Fields of interest

Imaging / Radiology; Radiotherapy; Surgical Oncology

Target groups

Professional/practitioner

Type of publication

Monograph

Available

2011. IX, 316 p. 121 illus., 95 in color. Hardcover

129,95 €
ISBN 978-3-642-11150-1
O.S. Miettinen, McGill University, Montreal, QC, Canada

Up from Clinical Epidemiology & EBM

Clinical epidemiology is now widely promoted and taught as a ‘basic science’ of Evidence-Based Medicine, of clinical EBM to be specific. This book, however, is mostly about that which Miettinen takes to be the necessary substitute for this now-so-fashionable subject – namely, Theory of Clinical Medicine together with its subordinate Theory of Clinical Research. The leitmotif in all of this is Miettinen’s perception of the need and opportunity to bring major improvements into clinical medicine in this Information Age, now that theoretical progress has made feasible the development of practice-guiding Expert Systems for it. Parts of this text constitute essential reading for whoever is expected or otherwise inclined, to study – or teach – ‘clinical epidemiology,’ and the same is true of those who set policy for the education of future clinicians; but practically all of it is essential reading for future – and current – academics in the various disciplines of clinical medicine.

Features
‘Clinical epidemiology’ is now widely promoted and taught as a ‘basic science’ of Evidence-Based Medicine, of clinical EBM to be specific. This book, however, is mostly about that which Miettinen takes to be the necessary substitute for this now-so-fashionable subject – namely, Theory of Clinical Medicine together with its subordinate Theory of Clinical Research. The leitmotif in all of this is Miettinen’s […]

Contents

Fields of interest
Epidemiology; Theory of Medicine / Bioethics; Health Informatics

Target groups
Upper undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Vascular Liver Disease

Mechanisms and Management

Vascular Liver Disease: Mechanisms and Management covers all of the disease entities that stem from abnormalities that affect the hepatic vasculature. This multi-authored text includes the mechanisms and management of intrahepatic vascular disease, including the most common cause of vascular disease of the liver, cirrhosis. Other less common diseases of the liver vasculature are also covered such as sinusoidal obstruction syndrome (previously known as veno-occlusive disease), portal vein thrombosis, the Budd-Chiari syndrome and congenital vascular malformations. These entities, although rare, are a challenge to physicians and physician scientists. Although many textbooks have been written on the consequences of cirrhosis on the liver vasculature, this is the only volume that focuses on the liver vasculature as a separate entity, providing an innovative approach to liver disease management. Vascular Liver Disease: Mechanisms and Management will be of great value to clinical investigators and basic […]

Features
Vascular Liver Disease: Mechanisms and Management covers all of the disease entities that stem from abnormalities that affect the hepatic vasculature. This multi-authored text includes the mechanisms and management of intrahepatic vascular disease, including the most common cause of vascular disease of the liver, cirrhosis. Other less common diseases of the liver vasculature are also covered such as sinusoidal […]

Contents

Fields of interest
Logic; Philosophy of Language

Target groups
Research

Type of publication
Monograph

Available
2011. XXII, 175 p. Hardcover

2011. XVIII, 211 p. 81 illus. (Argumentation Library, Vol. 18) Hardcover
99,95 € ISBN 978-94-007-0356-8

This monograph first presents a method of diagramming argument macrostructure, synthesizing the standard circle and arrow approach with the Toulmin model. A theoretical justification of this method through a dialectical understanding of argument, a critical examination of Toulmin on warrants, a thorough discussion of the linked-convergent distinction, and an account of the proper reconstruction of enthymemes follows.

Features
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Contents

Fields of interest
Logic; Philosophy of Language

Target groups
Research

Type of publication
Monograph

Available
99,95 € ISBN 978-94-007-0356-8

2011. XIV, 286 p. 85 illus., 38 in color. Hardcover
159,95 € ISBN 978-1-4419-8326-8
As science becomes more deeply embedded in a complex technological infrastructure, has this changed the relationship between the sciences and the various technologies that support them? As our technologies help shrink our world, can we restrict our ethical concerns or must we find a way to face the fact that we are now one world? What do new forms of architecture say about whom we are? Is the design process the new epistemological paradigm? The answers to all of these is “yes” according to Joseph C. Pitt (Virginia Tech). Doing Philosophy of Technology presents an updated and integrated overview of the most important thinking from this prominent philosopher of technology. Throughout his career Joseph C. Pitt has defended the view that to say anything meaningful about the value of a technology one must know something about that technology and how it functions in the world. This starting point leads naturally to a pragmatist philosophical stance, since it is the real world consequences of introducing 4[...]

Features
As science becomes more deeply embedded in a complex technological infrastructure, has this changed the relationship between the sciences and the various technologies that support them? As our technologies help shrink our world, can we restrict our ethical concerns or must we find a way to face the fact that we are now one world? What do new forms of architecture say about whom we are? Is the design process […]

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Human Beings and Technology
On Why Technology Can’t Improve Society
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Ethics and Values
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Ethical Colonialism
Anticipating the Unknown
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Philosophical Methodologies
Technologies, and the Transformation of Knowledge
Discovery
Telescopes and Progress
On the Philosophy of Technology
Past and Future
Philosophical Methodologies and the Philosophy of Technology
Explaining Scientific Change
Against the Natural/Artificial Distinction
Against the [...]
Philosophy in Science

An Historical Introduction

The traditional topics of the “philosophy of nature” — space, time, causality, the structure of the universe — are overwhelmingly present in our modern scientific theories. This book traces the complex paths that discussion of these topics has followed, from Plato and Aristotle, through Descartes, Leibniz, Kant and other great thinkers, right up to the relativistic cosmologies and the grand unified theories of contemporary science. In the light of this historical development, it becomes clear that modern science gives us not only a technological power over the world, but also a deeper understanding of physical reality. In this sense, science could be regarded as an heir to the traditional “philosophy of nature.” Moreover, the reader will learn why science itself deserves to be the subject of philosophical reflection.

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Contents

Fields of interest
Philosophy of Nature; History and Philosophical Foundations of Physics; History of Philosophy

Target groups
Lower undergraduate

Type of publication
Monograph

Available
59.95 € ISBN 978-3-642-17704-0

Logic, Mathematics, Philosophy, Vintage Enthusiasms

Essays in Honour of John L. Bell

The volume includes twenty-five research papers presented as gifts to John L. Bell to celebrate his 60th birthday by colleagues, former students, friends and admirers. Like Bell’s own work, the contributions cross boundaries into several inter-related fields. The contributions are new work by highly respected figures, several of whom are among the key figures in their fields. Some examples: in foundations of maths and logic (William Lawvere, Peter Aczel, Graham Priest, Giovanni Sambin), analytical philosophy (Michael Dummett, William Demopoulos), philosophy of science (Michael Redhead, Frank Arntzenius), philosophy of mathematics (Michael Hallett, John Mayberry, Daniel Isaacson) and decision theory and foundations of economics (Ken Binmore). Most articles are contributions to current philosophical debates, but contributions also include some new mathematical results, important historical surveys, and a translation by Wilfrid Hodges of a key work of arabic logic.

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Contents

Fields of interest
Logic; Philosophy of Science; Epistemology; Mathematical Logic and Foundations; History of Mathematics; Metaphysics

Target groups
Research

Type of publication
Contributed volume

Available
2011. XVIII, 486 p. Hardover
139,95 € ISBN 978-94-007-0213-4

Explanation, Prediction, and Confirmation

This volume, the second in the Springer series Philosophy of Science in a European Perspective, contains selected papers from the workshops organised by the ESF Research Networking Programme PSE (The Philosophy of Science in a European Perspective) in 2009. Five general topics are addressed: 1. Formal Methods in the Philosophy of Science; 2. Philosophy of the Natural and Life Sciences; 3. Philosophy of the Cultural and Social Sciences; 4. Philosophy of the Physical Sciences; 5. History of the Philosophy of Science. This volume is accordingly divided into five sections, each section containing papers coming from the meetings focussing on one of these five themes. However, these sections are not completely independent and detached from each other. For example, an important connecting thread running through a substantial number of papers in this volume is the concept of probability: probability plays a central role in present-day discussions in formal epistemology, in the philosophy of the physical cal...]

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Fields of interest
Philosophy of Science; Philosophy of the Social Sciences; Philosophy of Biology; Philosophy of Nature; Epistemology; Ontology

Target groups
Research

Type of publication
Proceedings

Available
139,95 € ISBN 978-94-007-1179-2
Physics

P. Hraskó, Janus Pannonius University, Pécs, Hungary

Basic Relativity
An Introductory Essay

This Brief presents a new way of introducing relativity theory, in which perplexing relativistic effects such as time dilation and Lorentz contraction are explained prior to the discussion of Lorentz transformation. The notion of relativistic mass is shown to contradict the spirit of relativity theory and the true significance of the mass-energy relation is contrasted with the popular view of it. The author discusses the twin paradox from the point of view of both siblings. Last but not least, the fundamentals of general relativity are described, including the recent Gravity Probe B experiment.

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Biomedical Image Processing

In modern medicine, imaging is the most effective tool for diagnostics, treatment planning and therapy. Almost all modalities have gone to directly digital acquisition techniques and processing of this image data have become an important option for health care in future. This book is written by a team of internationally recognized experts from all over the world. It provides a brief but complete overview on medical image processing and analysis highlighting recent advances that have been made in academics. Color figures are used extensively to illustrate the methods and help the reader to understand the complex topics.

Features
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Exotic Nuclear Excitations

By providing the reader with a foundational background in high spin nuclear structure physics and exploring exciting current discoveries in the field, this book presents new phenomena in a clear and compelling way. The quest for achieving the highest spin states has resulted in some remarkable successes which this monograph will address in comprehensive detail. The text covers an array of pertinent subjects, including the rotational alignment and bandcrossings, magnetic rotation, triaxial strong deformation and wobbling motion and chirality in nuclei. This book offers a clearly-written and up-to-date treatment of the topics covered. The prerequisites for a proper appreciation are courses in nuclear physics and nuclear models and measurement techniques of observables like gamma-ray energies, intensities, multi-fold coincidences, angular correlations or distributions, linear polarization, internal conversion coefficients, short lifetime (picosecond range) of excited states etc. and [...] Features

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Contents

Rotational alignment and bandcrossings.- Magnetic rotation.- Triaxial strong deformation and Wobbling motion.- Chirality in nuclei.

Fields of interest

Nuclear Physics; Heavy Ions, Hadrons; Nuclear Fusion

Target groups

Research

Type of publication

Monograph

Available

2011 X, 120 p. 80 illus. (Springer Tracts in Modern Physics, Vol. 242) Hardcover

99.95 €


From Gravity to Thermal Gauge Theories: The AdS/CFT Correspondence

The AdS/CFT correspondence is a powerful tool in studying strongly coupled phenomena in gauge field theories, using results from a weakly coupled gravity background studied in the realm of string theory. AdS/CFT was first successfully applied to the study of phenomena such as the quark-gluon plasma produced in heavy ions collisions. Soon it was realized that its applicability can be extended, in a more phenomenological approach, to condensed matter systems and to systems described by fluid dynamics. The set of tutorial reviews in this volume is intended as an introduction to and survey of the principle of the AdS/CFT correspondence in its field/string theoretic formulation, its applicability to holographic QCD and to heavy ions collisions, and to give a first account of processes in fluid dynamics and condensed matter physics, which can be studied with the use of this principle. Written by leading researchers in the field and cast into the form of a high-level but approachable multi-author textbook [...] Features

The AdS/CFT correspondence is a powerful tool in studying strongly coupled phenomena in gauge field theories, using results from a weakly coupled gravity background studied in the realm of string theory. AdS/CFT was first successfully applied to the study of phenomena such as the quark-gluon plasma produced in heavy ions collisions. Soon it was realized that its applicability can be extended, in a more [...] Contents


Fields of interest

Quantum Field Theories, String Theory; Elementary Particles, Quantum Field Theory; Strongly Correlated Systems, Superconductivity; Nuclear Physics, Heavy Ions, Hadrons; Classical and Quantum Gravitation, Relativity Theory

Target groups

Research

Type of publication

Monograph

Available


69.95 €

ISBN 978-3-642-04863-0

HFI / NQI 2010

Proceedings of the 3rd Joint International Conference on Hyperfine Interactions and International Symposium on Nuclear Quadrupole Interactions

Proceedings of the 3rd Joint International Conference on Hyperfine Interactions and International Symposium on Nuclear Quadrupole Interactions, HFI/NQI 2010 held at CERN, Switzerland, September 13-17, 2010 Reprinted from Hyperfine Interactions Volume. This volume focuses on the most recent studies on all aspects of hyperfine interaction detected by nuclear radiation and nuclear quadrupole interactions detected by resonance methods in the areas of materials, biological and medical science, as well as on contributions on new developments in instrumentation and methods, ab initio calculations and simulations. This volume comprises research papers, reviews, and short communications recording original investigations related to: Theory on Hyperfine Interactions (HFI) and Nuclear Moments; Magnetism and Magnetic Materials (Bulk and Thin Layers); HFI probes in Semiconductors, Metals and Insulators; Lattice Dynamics and Ion-Solid Interactions; Surfaces, Interfaces, Thin Films, and Nano-structures; Resonance [...] Features

Proceedings of the 3rd Joint International Conference on Hyperfine Interactions and International Symposium on Nuclear Quadrupole Interactions, HFI/NQI 2010 held at CERN, Switzerland, September 13-17, 2010 Reprinted from Hyperfine Interactions Volume. This volume focuses on the most recent studies on all aspects of hyperfine interaction detected by nuclear radiation and nuclear quadrupole interactions detected [...] Fields of interest

Particle and Nuclear Physics; Characterization and Evaluation of Materials; Nuclear Medicine

Target groups

Research

Type of publication

Proceedings

Available

2011. XII, 528 p. 100 illus. Hardcover

189.95 €

ISBN 978-94-007-1268-3

E. Papantonopoulos, National Technical University of Athens, Greece (Ed.)

K. Bharuth-Ram, University of Durban, South Africa; G. Langouch, Institution for Nuclear and Radiation Physics, Leuven, Belgium; K. Johnston, CERN, Geneva, Switzerland (Eds.)

S.C. Pancholi, Inter University Accelerator Centre, New Delhi, India
Heaven and Earth in Ancient Greek Cosmology
From Thales to Heracleides Ponticus

In Miletus, about 550 B.C., together with our world-picture cosmology was born. This book tells the story. In Part One the reader is introduced in the archaic world-picture of a flat earth with the cupola of the celestial vault on which the celestial bodies are attached. One of the subjects treated in that context is the riddle of the tilted celestial axis. This part also contains an extensive chapter on archaic astronomical instruments. Part Two shows how Anaximander (610-547 B.C.) blew up this archaic world-picture and replaced it by a new one that is essentially still ours. He taught that the celestial bodies orbit at different distances and that the earth floats unsupported in space. This makes him the founding father of cosmology. Part Three discusses topics that completed the new picture described by Anaximander. Special attention is paid to the confrontation between Anaxagoras and Aristotle on the question whether the earth is flat or spherical, and on the battle between Aristotle and [...]

High-Resolution X-Ray Spectroscopy
Past, Present and Future

High-resolution X-ray spectroscopy has become a powerful tool for astrophysics since the launch of Chandra and XMM-Newton, ten years ago. The gratings spectrometers on both instruments still continue to provide excellent data, while imaging calorimeters are being prepared for future missions like Astro-H and IXO. The synergy with other wavelength bands like the UV has been boosted by the addition of COS to HST. X-ray spectroscopy offers unique diagnostics to study almost any object in the Universe. This book contains review papers on high- and the state-of-the-art of X-ray spectroscopy for a broad range of objects and on the prospects for future studies.

Features
High-resolution X-ray spectroscopy has become a powerful tool for astrophysics since the launch of Chandra and XMM-Newton, ten years ago. The gratings spectrometers on both instruments still continue to provide excellent data, while imaging calorimeters are being prepared for future missions like Astro-H and IXO. The synergy with other wavelength bands like the UV has been boosted by the addition of COS to HST. [...]

Contents

Fields of interest
Astronomy, Astrophysics and Cosmology; Spectroscopy and Microscopy

Target groups
Research

Type of publication
Monograph

Available
2011. IV, 280 p. 174 illus., 50 in color. Hardcover
99,95 €

Impact of Nonlinearities on Fiber Optic Communications

This book covers the recent progress in fiber-optic communication systems with a main focus on the impact of fiber nonlinearities on the system performance. Over the past few years, there has been significant progress in coherent communication systems mainly because of the advances in digital signal processing techniques. This has led to renewed interest in fiber linear and nonlinear impairments and techniques to mitigate them in electrical domain. In this book, the reader will find all the important topics of fiber optic communication systems in one place with in-depth coverage by the experts of each subtopic. Pioneers from each of the sub-topics have been invited to contribute. Each chapter will have a section on fundamentals, review of literature survey and the recent developments. The reader will benefit from this approach since many of the conference proceedings and journal articles mainly focus on the authors’ research work without spending space on preliminaries.

Features
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Magnetic Properties of Tectosilicates I

The magnetic properties of silicates and phosphates are compiled in subvolume 27I. While subvolumes 27I1, 27I2, 27I3, 27I4, 27I5 and 27I6 (already published) deal with orthosilicates, sorosilicates, cyclosilicates, inosilicates, and phyllosilicates, respectively, the present subvolume 27I7 deals with phosphates.

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The magnetic properties of silicates and phosphates are compiled in subvolume 27I. While subvolumes 27I1, 27I2, 27I3, 27I4, 27I5 and 27I6 (already published) deal with orthosilicates, sorosilicates, cyclosilicates, inosilicates, and phyllosilicates, respectively, the present subvolume 27I7 deals with phosphates.

Contents
Magnetic and related properties of silicates and phosphates.- Six chapters for different types of Tectosilicates.- Figures, tables and references for each chapter.

Fields of interest
Physics (general)

Target groups
Research

Type of publication
Reference work

Available
2011. 450 p. (Condensed Matter, Subvolume 27IA) Hardcover
3.290,00 €
ISBN 978-3-540-69946-0

Ocean Ambient Noise
Measurement and Theory

This monograph develops the theory of noise mechanisms and measurements, and describes general noise characteristics and computational methods. The vast ambient noise literature is concisely summarized using theory combined with key representative results. The air sea boundary interaction zone is described in terms of nondimensional variables required for future experiments. Noise field coherency, rare directional measurements, and unique basin scale computations and methods are presented. The use of satellite measurements in these basin scale models is demonstrated. A series of appendices provides in-depth mathematical treatments which will be of interest to graduate students and active researchers.

Features
This book develops the theory of ocean ambient noise mechanisms and measurements, and also describes general noise characteristics and computational methods. It concisely summarizes the vast ambient noise literature using theory combined with key representative results. The air-sea boundary interaction zone is described in terms of non-dimensional variables requisite for future experiments.

Contents

Fields of interest
Acoustics; Oceanography; Engineering Acoustics; Signal, Image and Speech Processing

Target groups
Research

Type of publication
Monograph

Available
2011. XV, 263 p. 83 illus., 10 in color. (Underwater Acoustics) Hardcover
99,95 €
ISBN 978-1-4419-7831-8

Organic Metalloid Compounds
Subvolume D: NMR Data for Carbon-13, Part 6

Nuclear Magnetic Resonance (NMR) is based on the fact that certain nuclei exhibit a magnetic moment, oriented by a magnetic field, and absorb characteristic frequencies in the radiofrequency part of the spectrum. NMR is now a leading technique and a powerful tool for the investigation of the structure and interaction of molecules. The present Landolt-Börnstein volume III/35 "Nuclear Magnetic Resonance (NMR) Data" is therefore of major interest to all scientists and engineers who use NMR to study the structure and the binding of molecules. Volume III/35 "NMR-Data" is divided into several subvolumes and parts. Subvolume III/35A contains the nuclei B-11 and P-31, subvolume III/35B contains the nuclei F-19 and N-15, subvolume III/35C contains the nucleus H-1, subvolume III/35D contains the nucleus C-13, subvolume III/35E contains the nucleus O-17, and subvolume III/35G contains the nucleus Se-77. More nuclei are planned for future volumes.

Features
Nuclear Magnetic Resonance (NMR) is based on the fact that certain nuclei exhibit a magnetic moment, oriented by a magnetic field, and absorb characteristic frequencies in the radiofrequency part of the spectrum. NMR is now a leading technique and a powerful tool for the investigation of the structure and interaction of molecules. The present Landolt-Börnstein volume III/35 "Nuclear Magnetic Resonance (NMR) [...]"

Fields of interest
Physics (general); Solid State Physics; Spectroscopy and Microscopy

Target groups
Research

Type of publication
Reference work

Available
3.690,00 €
ISBN 978-3-642-14248-2
Physical Properties of Ceramic and Carbon Nanoscale Structures
The INFN Lectures, Vol. II

R. Piazza, Politecnico di Milano, Italy

Soft Matter
The stuff that dreams are made of

Roberto Piazza says: "Physics should be made simple enough to be amusing, but not so trivial as to spoil the fun." This is exactly the approach of this book in making the science of 'soft matter' relevant to everyday life things such as the food we eat, the plastic we use, the concrete we build with, the cells we are made of.

Features
'Soft matter may, as Roberto Piazza puts it, be the stuff of dreams, but it is also the stuff of life. That is what makes this book so engaging – because it shows the ingenuity that both nature and humankind have invested in the bendy, stretchy, fragile, tough and adaptable substances we find all around us. There is plenty of hard science in this soft matter, and Piazza offers an urbane and eloquent tour of [...]"

Contents

Fields of interest
Soft and Granular Matter, Complex Fluids and Microfluidics; Popular Science in Mathematics / Natural Science / Technology; Surfaces and Interfaces, Thin Films; Polymer Sciences; Biophysics and Biological Physics

Target groups
Popular/general

Available
2011, XIV, 279 p. 61 illus., 35 in color. Softcover
24,95 €

In the present volume physical properties of ternary amorphous alloys are presented. For each of the 385 alloy systems the data, e.g., on density and structure, on thermal, mechanical, magnetic, electrical and optical properties, as well as on corrosion behavior, are provided in text, tables and figures. The data are published in three parts, the present 2nd part covering 122 alloy systems from B-Be-Fe to Co-W-Zr. Also available on www.springermaterials.com

Features
In the present volume physical properties of ternary amorphous alloys are presented. For each of the 385 alloy systems the data, e.g., on density and structure, on thermal, mechanical, magnetic, electrical and optical properties, as well as on corrosion behavior, are provided in text, tables and figures. The data are published in three parts, the present 2nd part covering 122 alloy systems from B-Be-Fe to [...]
The CBM Physics Book
Compressed Baryonic Matter in Laboratory Experiments

This exhaustive survey is the result of a four year effort by many leading researchers in the field to produce both a readable introduction and a yardstick for the many upcoming experiments using heavy ion collisions to examine the properties of nuclear matter. The books falls naturally into five large parts, first examining the bulk properties of strongly interacting matter, including its equation of state and phase structure. Part II discusses elementary hadronic excitations of nuclear matter, Part III addresses the concepts and models regarding the space-time dynamics of nuclear collision experiments, Part IV collects the observables from past and current high-energy heavy-ion facilities in the context of the theoretical predictions specific to compressed baryonic matter. Part V finally gives a brief description of the experimental concepts. The book explicitly addresses everyone working or planning to enter the field of high-energy nuclear physics.

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Contents

Fields of interest
Nuclear Physics, Heavy Ions, Hadrons; Particle Acceleration and Detection, Beam Physics, Astrophysics and Astroparticles

Target groups
Research

Type of publication
Monograph

Available

119.95 €
ISBN 978-3-642-13292-6

The Pursuit of Quantum Gravity
Memoirs of Bryce DeWitt from 1946 to 2004

1946 is the year Bryce DeWitt entered Harvard graduate school. Quantum Gravity was his goal and remained his goal throughout his lifetime until the very end. The pursuit of Quantum Gravity requires a profound understanding of Quantum Physics and Gravitation Physics. As G. A. Vilkovisky commented, “Quantum Gravity is a combination of two words, and one should know both. Bryce understood this as nobody else, and this wisdom is completely unknown to many authors of the flux of papers that we see nowadays.” Distinguished physicist Cecile DeWitt-Morette skillfully blends her personal and scientific account with a wealth of her late husband’s often unpublished writings on the subject matter. This volume, through the perspective of the leading researcher on quantum gravity of his generation, will provide an invaluable source of reference for anyone working in the field.

Features
1946 is the year Bryce DeWitt entered Harvard graduate school. Quantum Gravity was his goal and remained his goal throughout his lifetime until the very end. The pursuit of Quantum Gravity requires a profound understanding of Quantum Physics and Gravitation Physics. As G. A. Vilkovisky commented, “Quantum Gravity is a combination of two words, and one should know both. Bryce understood this as nobody else. [...]”

Contents
I. Progress in Quantum Physics since the Lamb Shift calculations.- II. Progress in Gravitation since Black Holes came to preeminence.- III. Bryce DeWitt’s Pursuit of Quantum Gravity.- IV. Bibliography.

Fields of interest
Classical and Quantum Gravitation, Relativity Theory; History and Philosophical Foundations of Physics; Quantum Physics; Philosophy of Science

Target groups
Research

Type of publication
Monograph

Available

34.95 €
ISBN 978-3-642-14269-7

The Sunrise Balloon-Borne Stratospheric Solar Observatory

The central aims of the Sunrise project is to understand the structure and dynamics of the magnetic field in the solar atmosphere. The magnetic field is the source of solar activity, controls the space environment of the Earth and causes the variability of solar irradiance, which may be a significant driver of long-term changes of the terrestrial climate. Interacting with the convective plasma flow, the magnetic field in the solar photosphere develops intense field concentrations on scales below 100 km, which are crucial for the dynamics and energetics of the whole solar atmosphere. These spatial scales cannot be studied systematically from the ground because of image distortions due to atmospheric turbulence. The balloon-borne Sunrise telescope has, for the first time, provided measurements of the magnetic structure of the solar atmosphere on its intrinsic spatial and temporal scales. The book gives an overview about the instrumentation and the successful flight in 2009.

Features
The central aim of the Sunrise project is to understand the structure and dynamics of the magnetic field in the solar atmosphere. The magnetic field is the source of solar activity, controls the space environment of the Earth and causes the variability of solar irradiance, which may be a significant driver of long-term changes of the terrestrial climate. Interacting with the convective plasma flow, the magnetic field...

Contents

Fields of interest
Extraterrestrial Physics, Space Sciences; Meteorology / Climatology; Aerospace Technology and Aeronautics

Target groups
Research

Type of publication
Monograph

Available
2011. IV, 124 p. 65 illus., 44 in color. Hardcover

99.95 €
Popular Science

D.M. Harland, Kelvinbridge, Glasgow, UK

Apollo 12 - On the Ocean of Storms

In July 1969 the ‘amiable strangers’ that made up the crew of the historic Apollo 11 flight successfully achieved the first manned lunar landing. Several months later, three close friends set off on an even more challenging mission. Free of the burden of making history, the Apollo 12 astronauts were determined to really enjoy their experience while taking care of business. This is the story of their mission, told largely in their own words. Their exploits and accomplishments showed how conservative the inaugural mission had been. With its two moonwalks, deployment of the first geophysical station on the Moon, and geological sampling, Apollo 12 did what many had hoped would be achieved by the first men to land on the Moon. The Apollo 12 mission also spectacularly demonstrated the precision landing capability required for success in future lunar surface explorations. In addition to official documents, published prior to and after the mission, APOLLO 12 – ON THE OCEAN OF STORMS draws on the flight.[…]

Features
With its two moonwalks, deployment of a geophysical station and geological sampling, Apollo 12 did what many had hoped would be achieved by the first men to land on the Moon. It spectacularly demonstrated the precision landing capability required for the success of future lunar surface explorations. Apollo 12 - On the Ocean of Storms contains over 30 page of color images, including […]

Contents
Illustrations. - Author’s Preface. - Acknowledgments. - Acronyms. - Chapter 1: Planning and preparations. - Chapter 2: Moonbound. - Chapter 3: A Visit to the Snowman. - Chapter 4: The Voyage Home. - Glossary. - Index.

Fields of interest
Popular Science in Astronomy; Astronomy, Observations and Techniques; Extraterrestrial Physics, Space Sciences

Target groups
Popular/general

Type of publication
Popular/science

Available
2011. XIX, 522 p. 228 illus., 44 in color. (Space Exploration) Softcover
44,95 €

Psychology

D. McKay, Fordham University, Bronx, NY, USA; E.A. Storch, University of South Florida, Tampa, FL, USA (Eds.)

Handbook of Child and Adolescent Anxiety Disorders

Features
Is it school refusal or separation anxiety disorder? Can preschoolers have panic attacks? Does food neophobia really exist? For readers seeking ways to improve assessment, case conceptualization, or treatment plans as well as a more general understanding of anxiety disorders among children, the Handbook of Child and Adolescent Anxiety Disorders addresses these and many other complex issues. A […]

Contents

Fields of interest
Child and School Psychology; Psychiatry; Education (general); Social Work; Psychotherapy and Counseling

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 189 p. Hardcover
99,95 €

Memory-Based Logic Synthesis

T. Sasao, Kyushu Institute of Technology, Iizuka, Japan

Memory-Based Logic Synthesis

This book describes the synthesis of logic functions using memories. It is useful to design field programmable gate arrays (FPGAs) that contain both small-scale memories, called look-up tables (LUTs), and medium-scale memories, called embedded memories. This is a valuable reference for both FPGA system designers and CAD tool developers, concerned with logic synthesis for FPGAs.

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Contents

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

Target groups
Research

Type of publication
Monograph

Available
2011. XI, 189 p. Hardcover
99,95 €

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Research

Type of publication
Monograph

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99,95 €

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Fields of interest
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Target groups
Research

Type of publication
Monograph

Available
2011. XI, 189 p. Hardcover
99,95 €
Preventing Lethal School Violence

Features
Bullying. Gang assaults. Rampage shootings. School violence, especially when it turns deadly, has enduring social and psychological effects on students, faculty, staff, and the community. And though a great deal of research focuses on the significant role children’s positive social development plays in reducing incidents of school violence, in-depth examinations of evidence-based preventive measures have [...]

Contents

Fields of interest
Child and School Psychology; Education (general); Social Work; Psychotherapy and Counseling; Criminology & Criminal Justice; Medicine (general)

Spirituality and Indian Psychology

Lessons from the Bhagavad-Gita

With the emergence of positive psychology in the West, and the many fold discovery of the impact of psychology in one’s life, there is a need to understand spirituality, and to use its positive aspects to maintain a balance in hectic modern life. This book presents models for mapping basic psychological processes and their relationships. It covers basic constructs like cognition, emotion, behavior, desires, creativity, as well as applied topics like personal happiness, intercultural conflict handling, and world peace.

Features
In recent years, globalization, multiculturalism, and Western interest in Eastern thought have contributed to the growth of cross-cultural psychology. Paradoxically, however, while spirituality plays such a major role in non-Western cultures, it tends to occupy only a minor area of cross-cultural research. Its roots in ancient philosophical texts such as the Bhagavad-Gita make Indian [...]
Community Quality-of-Life Indicators: Best Cases V


Features
This book contains “best practices” of community quality-of-life indicator systems implemented in various communities throughout the world. The cases in this volume describe communities that have launched their own community indicators programs. Elements that are included in the descriptions are the history of the community indicators work within the target region, the planning of community [...] (excerpts from the book)

Contents

Fields of interest
Quality of Life Research; Landscape, Regional and Urban Planning

Target groups
Research

Type of publication
Contributed volume

Available
99.95 €
ISBN 978-94-007-0534-0

Continuity and Discontinuity in the Peopling of Europe

Since the Western world first became aware of the existence of Neanderthals, this Pleistocene human has been a regular focus of interest among specialists and also among the general public. In fact, we know far more about Neanderthals than we do about any other extinct human population. Furthermore, over the past 150 years no other palaespecies has been such a constant source of discussion and fierce debate among palaeanthropologists and archaeologists. This book presents the status of our knowledge as well as the methods and techniques used to study this extinct population and it suggests perspectives for future research.

Features
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Contents

Fields of interest
Anthropology; Archaeology; Evolutionary Biology; Palaeontology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XII, 386 p. (Vertebrate Paleobiology and Paleoanthropology, Vol.) Hardcover
99.95 €
ISBN 978-94-007-0491-6

Crime in the Art and Antiquities World

The theft, trafficking, and falsification of cultural property and cultural heritage objects are crimes of a particularly complex nature, which often have international ramifications and significant economic consequences. Organized criminal groups of various types and origins are involved in these illegal acts. The book Crime in the Art and Antiquities World has contributions both from researchers specializing in the illegal trafficking of art, and representatives of international institutions involved with prevention and detection of cultural property-related crimes, such as Interpol and UNESCO. This innovative volume also includes an Appendix of the existing legal texts, i.e. international treaties, conventions, and resolutions, which have not previously been available in a single volume. This work is a unique and useful reference for scholars and private and public bodies alike.

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Contents

Fields of interest
Criminology & Criminal Justice; Arts; Law (general); Anthropology

Target groups
Research

Type of publication
Contributed volume

Available
119.95 €
Engineering Earth
The Impacts of Megaengineering Projects

This is the first book to examine the actual impact of physical and social engineering projects in more than fifty countries from a multidisciplinary perspective. The book brings together an international team of nearly two hundred authors from over twenty different countries and more than a dozen different social, environmental, and engineering sciences. Together they document and illustrate with case studies, maps and photographs the scale and impacts of many megaprojects and the importance of studying these projects in historical, contemporary and postmodern perspectives. This pioneering book will stimulate interest in examining a variety of both social and physical engineering projects at local, regional, and global scales and from disciplinary and trans-disciplinary perspectives.

Features
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The Calculus of Consent and Constitutional Design

Buchanan and Tullock’s seminal work, The Calculus of Consent, linked economic methodology to substantive questions in political science. Among the major contributions of their book is a connection between constitutional decision making and contractarianism, a philosophical tradition that proponents believe can give institutions legitimacy. In other words, a major contribution of their book is a clear connection between empirical decision making and normative principles. The current book formalizes and extends their foundational ideas as it attempts to show how economic and philosophical arguments about the ‘best’ voting rules can be used to improve constitutional design. It informs debates about constitutional political economy in comparative politics, democratic theory, and public choice. Political scientists often ask questions about what causes a nation to seek a new constitution, how constitutions are made, and what factors allow for corrupt decision making. The Calculus of Consent and...

Features
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Contents

Fields of interest
Political Science; Political Philosophy; Methodology of the Social Sciences

Target groups
Research

Type of publication
Monograph

Available
89,95 €

The Demographic Transition and Development in Africa

The Unique Case of Ethiopia

"The heated Malthusian-Bourbouian debates still rage over consequences of high population growth, rapid urbanization, dense rural populations and young age structures in the face of drought, poverty, food insecurity, environmental degradation, climate change, instability and the global economic crisis. However, while facile generalizations about the lack of demographic change and lack of progress in meeting the MDGs in sub-Saharan Africa are commonplace, they are often misleading and belie the socio-cultural change that is occurring among a vanguard of more educated youth. Even within Ethiopia, the second largest country at the Crossroads of Africa and the Middle East, different narratives emerge from analysis of longitudinal, micro-level analysis as to how demographic change and responses are occurring, some more rapidly than others. The book compares Ethiopia with other Africa countries, and demonstrates the uniqueness of an African-type demographic transition: a combination of poverty-related..."

Features
Generalizations about the lack of demographic change and of progress in meeting the MDGs in sub-Saharan Africa are commonplace, but they are often misleading and belie the socio-cultural change. This book compares Ethiopia with other African countries, demonstrating the uniqueness of an African-type demographic transition: a mix of poverty-related negative factors with positive education, health and higher...

Contents

Fields of interest
Demography; Population Economics; Public Health; Quality of Life Research

Target groups
Research

Type of publication
Contributed volume

Available
2011. XXII, 359 p. Hardcover
39,95 €
ISBN 978-3-642-17979-2
Classification and Multivariate Analysis for Complex Data Structures

The growing capabilities in generating and collecting data has risen an urgent need of new techniques and tools in order to analyze, classify and summarize statistical information, as well as to discover and characterize trends, and to automatically bag anomalies. This volume provides the latest advances in data analysis methods for multidimensional data which can present a complex structure: The book offers a selection of papers presented at the first Joint Meeting of the Société Francophone de Classification and the Classification and Data Analysis Group of the Italian Statistical Society. Special attention is paid to new methodological contributions from both the theoretical and the applicable point of views, in the fields of Clustering, Classification, Time Series Analysis, Multidimensional Data Analysis, Knowledge Discovery from Large Datasets, Spatial Statistics.

Features
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Contents
Key Notes.- Classification and Discrimination.- Data Mining.- Robustness and Classification.- Categorical Data and Latent Class Approach.- Latent Variables and Related Methods.- Symbolic, Multivalued and Conceptual Data Analysis.- Spatial, Temporal, Streaming and Functional Data Analysis.- Bio and Health Science.

Fields of interest
Statistical Theory and Methods; Probability and Statistics in Computer Science; Data Structures, Cryptology and Information Theory; Probability Theory and Stochastic Processes; Multimedia Information Systems.

Target groups
Research

Type of publication
Proceedings

Available
2011. XIX, 473 p. (Studies in Classification, Data Analysis, and Knowledge Organization) Softcover

99,95 €
ISBN 978-3-642-13311-4

Interactive LISREL in Practice
Getting Started with a SIMPLIS Approach

“Getting Started with a SIMPLIS Approach” is particularly appropriate for those users who are not experts in statistics, but have a basic understanding of multivariate analysis that would allow them to use this handbook as a good first foray into LISREL. Part I introduces the topic, presents the study that serves as the background for the explanation of matters, and provides the basis for Parts II and III, which, in turn, explain the process of estimation of the measurement model and the structural model, respectively. In each section, we also suggest essential literature to support the utilization of the handbook. After having read the book, readers will have acquired a basic knowledge of structural equation modeling, namely using the LISREL program, and will be prepared to continue with the learning process.

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Contents

Fields of interest
Statistical Theory and Methods; Simulation and Modeling; Econometrics

Target groups
Research

Type of publication
Handbook

Available

39,95 €
ISBN 978-3-642-18043-9

Statistical Confidentiality

Principles and Practice

Because statistical confidentiality embraces the responsibility for both protecting data and ensuring its beneficial use for statistical purposes, those working with personal and proprietary data can benefit from the principles and practices this book presents. Researchers can understand why an agency holding statistical data does not respond well to the demand, “just give me the data; I’m only going to do good things with it.” Statisticians can incorporate the requirements of statistical confidentiality into their methodologies for data collection and analysis. Data stewards, caught between those eager for data and those who worry about confidentiality, can use the tools of statistical confidentiality toward satisfying both groups.

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Contents

Fields of interest
Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XII, 200 p. (Statistics for Social and Behavioral Sciences) Hardcover

59,95 €
ISBN 978-1-4419-7801-1
Statistical Tools for Finance and Insurance

Statistical Tools for Finance and Insurance presents ready-to-use solutions, theoretical developments and method construction for many practical problems in quantitative finance and insurance. Written by practitioners and leading academics in the field, this book offers a unique combination of topics from which every market analyst and risk manager will benefit. Features of the significantly enlarged and revised second edition: Offers insight into new methods and the applicability of the stochastic technology Provides the tools, instruments and (online) algorithms for recent techniques in quantitative finance and modern treatments in insurance calculations Covers topics such as - expected shortfall for heavy tailed and mixture distributions - pricing of variance swaps - volatility smile calibration in FX markets - pricing of catastrophe bonds and temperature derivatives - building loss models and ruin probability approximation - insurance pricing with GLM - equity linked retirement plans (new topics in [...] Features

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Statistics for Business, Economics, Mathematical Finance, Insurance; Quantitative Finance

Target groups

Research

Type of publication

Monograph

Available

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