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April 15, 2009

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Retinal Degenerative Diseases Laboratory and Therapeutic Investigations

This is the proceedings of the XIIth International Symposium on Retinal Degenerations, which will be held in Emeishan, Sichuan, China on September 18 - 23, 2008. The themes will include "Molecular and genetic mechanisms in photoreceptor degeneration", "Age-related macular degeneration", "New diagnostic techniques for retinal degenerations", "Neuroprotection in the prevention of retinal degeneration", "Gene therapy and the correction of gene defects", as well as other emerging topics that may develop over the next few months.

Fields of interest
Ophthalmology

Target groups
Scientists, researchers, ophthalmologists

Discount group
MR

Clinical Handbook of Insomnia

The goal of the second edition of the Clinical Handbook of Insomnia is to update and expand on the previous edition by presenting the latest developments in the field of insomnia and by involving more thought leaders from around the world. Over the past 4 years there has been an increasing amount of data regarding the pathophysiology of insomnia and there have been significant advancements in its treatment with FDA approval of 4 new medications for it and the development of several others that are going to be available in the next 5 years.

From the contents

Fields of interest
Neurology; Internal Medicine; General Practice / Family Medicine

Target groups
Neurologists and family practice physicians

Discount group
MC

Forensic Aspects of Pediatric Fractures
Differentiating Accidental Trauma from Child Abuse

Fractures are a common finding in children and it is estimated that 2.1% of all children will suffer at least one fracture before the age of 16. With young children in particular, the question may arise if this is related to child abuse. The aim of this book is to help physicians involved in child abuse cases to interpret radiological findings in light of the forensic circumstances under which they occurred. The authors present up-to-date literature related to the mechanisms underlying non-accidental cases of trauma.

In this book not only the radiological findings in child abuse are discussed, but more importantly, these findings are analyzed from a forensic perspective. Careful attention is paid to evidence regarding reported trauma mechanisms and their clinical outcome; for example, can a fall from a couch result in a femoral fracture, and if not, where is the supporting evidence?

Features
► Comprehensive overview of the etiology of pediatric fractures ► Combining forensic medicine and pediatric radiology ► An insight into child abuse-related fractures

Fields of interest
Imaging / Radiology; Forensic Medicine; Pediatrics

Target groups
Clinicians and practitioners

Discount group
MR
Pediatric Neuro-Ophthalmology

Due to the generous representation of the afferent visual system within the brain, neurological disease may disrupt vision as a presenting symptom or as a secondary effect of the disease. Conversely, early developmental disturbances of vision often disrupt ocular motor control systems, giving rise to complex disorders such as nystagmus, strabismus, and torticollis. The signs and symptoms of neurological disease are elusive by their very nature, presenting a confounding diagnostic challenge. Neurological medications and neurosurgical treatments can produce neuro-ophthalmological dysfunction that can be difficult to distinguish from disease progression. Affected patients may experience substantial delays in diagnosis, and are often subjected to extensive (and expensive) diagnostic testing. Scientific articles pertaining to specific disorders are scattered throughout medical subspecialty journals. These children continue to “fall through the cracks” of our medical education system.

Features
- The only comprehensive textbook in the area of pediatric neuro-ophthalmology, providing complete coverage for both the expert and those in training

From the contents

Fields of interest
Ophthalmology; Neurology

Target groups
Neuro-ophthalmology practitioners and residents/fellows, pediatric ophthalmology practitioners and residents/fellow, general ophthalmologists

Discount group
MR

Frozen Section Library: Pleura

Frozen sections are diagnosed by the pathologist while a patient is undergoing surgery, often under general anesthesia, for the purpose of rapid diagnosis which may be used to make immediate treatment decisions or to confirm that diagnostic tissues have been sampled for further study. As a result, frozen section diagnosis is often a highly demanding situation for the pathologist who must render a diagnosis quickly and is a basis for critical decisions to the surgeon. In addition to the need for rapid recall of differential diagnoses, there are many pitfalls and artifacts that add to the risk of frozen section diagnosis that are not present with permanent sections of fully processed tissues that can be examined in a more leisurely fashion. Most standard pathology textbooks, both general and subspecialty, largely ignore the topic of frozen section.

Features
- Well illustrated
- Concise handbook
- Site specific

Contents

Fields of interest
Pathology

Target groups
Surgical pathologists, pathology residents and fellows

Discount group
MR

Movement Disorders in Clinical Practice

Movement disorders are a complex group of disorders spanning all aspects of neurological illnesses and ranging from conditions characterised by too little movement (hypokinesia) to those where movement is excessive (hyperkinesia). Diagnosis is based mostly on observation and examination rather than radiology and serological assessments. The classic example would be Parkinson’s disease, while other movement-related problems, such as tremor, chorea, dystonia, myoclonus, hemiballism and tics, occur in a range of inherited, drug-induced and sporadic disorders. Genetics plays an important part in the genesis of several conditions characterised by various movement disorders, such as Huntington’s disease, dystonic conditions and myoclonus. Somatisation from psychologically determined conditions can also manifest as movement disorders. Finally, sleep may be affected by movement disorder and a typical example would be restless legs syndrome.

Features
- A concise but comprehensive overview of the diagnosis, treatment and management of common and rarer movement disorders from two key international movement disorder experts
- Clinically focussed and accessible it will provide a practical guide to the assessment of these complex disorders where diagnosis relies on examination and observation rather than radiology and serological assessments

Fields of interest
Neurology; General Practice / Family Medicine; Emergency Medicine

Target groups
Family practitioners, critical care and emergency doctors, neurologists in training and consultant neurologists, specialist nurses and allied health professionals

Discount group
MR
Evidence-Based Practice Toward Optimizing Clinical Outcomes

Coeditor: X. M. Caldeira Brant, N. Neagos, O. O. Oluwadara, M. H. Ramchandani

Health care is witnessing an explosion of fundamental, clinical and translational research evidence. The emerging paradigm of evidence-based health care rests on the judicious integration of the patient needs/wants, the provider’s expertise, and the best available research evidence in the treatment plan. The purpose of this book is to discuss the promise and the limitations of incorporating the best available evidence in clinical practice. It seeks to characterize and define how best available research evidence can be used in clinical practice and to what respect it applies to current public health issues.

Features
► Most current and most recent research information on evidence-based dentistry
► Definition and application in clinical practice with integration to public health issues
► Valuable guidelines for clinical providers
► Sound background material
► Critical Guidance with appropriate tools

Fields of interest
Medicine/Public Health, general; Public Health/Gesundheitswesen; Dentistry

Target groups
Specialists at all levels working in the field of of clinical dentistry, clinical medicine and clinical veterinary science

Discount group
P

Moyamoya Disease Update

Moyamoya disease (MMD) is characterized by bilateral stenosis or occlusion of the distal internal carotid artery bifurcation, including its proximal branches, and an abnormal vascular network (moyamoya vessel) in the vicinity of the arterial occlusions. It is predominant in the age group less than 10 years and the most common pediatric cerebrovascular disease in East Asia but has also been found over all age groups and globally through recent advances in diagnostic imaging. The clinical presentation of MMD usually includes repeated transient ischemic attacks in children and intracranial hemorrhage in adults. The benefit of surgery for the ischemic type of MMD has been established. As much information about MMD has been accumulated for almost 10 years since publication of monograph “Moyamoya Disease” in year 1986 by Jiro Suzuki(ed), and then lastly in year 2001 by Ikezaki and Loftus (eds), it is time to update knowledge of MMD.

Features
► Providing the latest knowledge of Moyamoya Disease

Field of interest
Neurosurgery

Target groups
Neurosurgeons

Discount group
MR

Atlas of Endometrial Histopathology

The prime purpose of this atlas is to help the pathologist find, classify and differentially diagnose the changes he is observing. Information on the daily changes during the menstrual cycle and how to date them is essential for recognizing changes caused by abnormal endogenic and iatrogenic hormonal stimuli in functional endometrial disturbances. To provide their patients with the proper hormonal therapy, gynecologists cannot rely on blood samples only because of the constantly fluctuating hormonal levels. A precise functional diagnosis of the endometrial biopsy is the most accurate and best means for assessing hormonal action. Numerous microphotographs explain in detail how to recognize the normal and pathological changes that can develop in the endometrium. The subject of endometritis and the complex endometrial neoplasms and their precursors, with their differential diagnosis as well as their clinical prognosis are covered in detail.

Features
► Comprehensive, yet concise reference for the practicing pathologist
► Hands-on guide to the precise diagnosis of physiological and pathological changes to the endometrium
► Updated, revised and expanded new edition with high quality illustrations

Contents

Fields of interest
Pathology; Gynecology

Target groups
Pathologists, gynecologists, researchers in oncology, reproductive medicine, epidemiology, and molecular genetics

Discount group
P
Anesthesia Student Survival Guide
A Case-Based Approach

Anesthesia Student Survival Guide: A Case-Based Approach is an indispensable introduction to the specialty. This concise, easy-to-read, affordable handbook is ideal for medical students, nursing students, and others during the anesthesia rotation. Written in a structured prose format and supplemented with many diagrams, tables, and algorithms, this pocket-sized guide contains essential material covered on the USMLE II-III and other licensing exams. The editors, who are academic faculty at Harvard Medical School, summarize the essential content with 32 informative and compelling case studies designed to help students apply new concepts to real situations. Pharmacology, basic skills, common procedures and anesthesia subspecialties are covered, too, with just the right amount of detail for an introductory text. The unique book also offers a section containing career advice and insider tips on how to receive good evaluations from supervising physicians.

Features
- Concise, affordable pocket reference
- Complete resource for students of anesthesia
- Sample cases and review questions after each major chapter

From the contents
How to be a “Star” Student, Career Options, and the Match.- History of Anesthesia and Introduction to the Specialty.- Pharmacology Principles.- Pharmacology of Intravenous Agents.- Pharmacology of Inhalational Agents.- Pharmacology of Local Anesthetics.

Field of interest
Anesthesiology

Target groups
Medical students, junior residents in anesthesia, nurse anesthetists, non-anesthesia residents, nursing students, RNs, EMTs

Discount group
MC

Atlas of Real Time 3D Transesophageal Echocardiography

This atlas provides a comprehensive description of normal anatomy of the heart (natives valves, interatrial septum, left atrial appendage, left atrium etc.) as seen by this revolutionary ultrasound technique. Normal TEE cardiac structures are described and compared with the corresponding anatomical specimens focusing on the fundamental as well as the details of the cardiac structures, providing a detailed understanding of the anatomy that has not previously been possible with either real-time transthoracic echocardiography (TTE) or reconstructed 3D TEE imaging technology. The atlas contains a large number of challenging cardiac pathology cases observed in clinical settings and based of the combined experience of five outstanding institutions in Europe and United States. Each case is accompanied by a brief presentation and discussion of the value of the imaging modality to effective diagnosis.

Features
- The first book to provide a comprehensive description of normal anatomy of the internal structures of the heart using this revolutionary technique
- TEE cardiac structures will be described and compared side-by-side with the corresponding anatomical specimens
- Contains a large number of challenging cardiac pathology cases observed in clinical settings

Fields of interest
Cardiology; Diagnostic Radiology

Target groups
Fellows, residents and clinicians in cardiology, cardiac imaging. Secondarily, cardiac surgeons, interventional cardiologists, medical libraries

Discount group
MR

Peripheral Endovascular Interventions

This book is a comprehensive review of the rapidly advancing field of endovascular therapy, written by internationally recognized authorities in the field, many of whom are the innovators of the techniques and devices involved. Broad in scope, topics covered range from how to obtain training in approved endovascular techniques to promising new lines of investigational therapies. Reflecting the operative nature of many of the new endovascular therapies, this book is somewhat unique for an endovascular text in the strong representation of surgeons among its authors. The purpose is to train and update physicians with diverse levels of experience and from a variety of specialties in established, new, and still evolving endovascular techniques. Given the wide variation in expertise among different specialties interested in performing these procedures, and acknowledging that different specialties lack skill in different aspects of various procedures, a book such as this is badly needed.

Features
- Combines the expertise of leading surgeons and interventionalists in presenting the latest innovations in this dynamic field

Contents

Fields of interest
Vascular Surgery; General Surgery; Interventional Radiology

Target groups
Vascular surgery, general surgery, interventional radiology

Discount group
MC
Acupuncture Therapy for Neurological Diseases
A Neurobiological View

Written in modern scientific language, “Acupuncture Therapy for Neurological Diseases: A Neurobiological View” discusses current research, applying multiple neuroscience approaches, on the effect of acupuncture on neurological diseases and the underlying mechanisms. Apart from basic principles of acupuncture, topics include acupuncture analgesia, acupuncture-drug balanced anesthesia, acute and chronic body pain, stroke, cardiac diseases, hypertension, hypotension, epilepsy, neuroimmuno suppression, female infertility, menopausal & perimenopausal syndrome, smoking, depression, and drug addiction. Each chapter is written by an expert in the field. This unique book provides a broad perspective on the principles of acupuncture for acupuncture researchers and neuroscientists.

Features
► Systematic and broad discussion of acupuncture treatment of neurological diseases
► Provides a unique and broad view of the scientific principles of acupuncture based on neurobiological research
► Integrates ancient medicine with modern science

From the contents
History and Scientific Basis.
- History.
- Traditional Chinese Medicine.
- History of Acupuncture Research.
- Major contributions made by SHMC.
- More.
- Neuroanatomical Basis of Acupuncture Points.
- Transmission of Acupuncture Signals.
- Acupuncture and Central Neurotransmitters.
- Clinical Applications and the underlying Mechanisms.
- Acupuncture-Drug Balanced Anesthesia.

Fields of interest
Acupuncture; Neurobiology; Complementary & Alternative Medicine

Target groups
Medical students, clinicians, acupuncturists, neuroscientists, acupuncture researchers

Discount group
P

A Practical Guide to the Evaluation of Child Physical Abuse and Neglect

To keep up with growing body of professionals staying informed on this subject, the second edition of A Practical Guide to the Evaluation of Child Physical Abuse and Neglect assists the reader in recognizing abuse/neglect (exclusive of sexual abuse) in children and youth, and determining its extent. Illustrated with clinical photographs, the Guide details systematic evaluation procedures, explains the tasks of an evaluation team, and expands and updates the knowledge base.

Features
► Extensive color photos
► Updated edition adds chapters on risks for children with special health care needs, the connection of child abuse to intimate partner violence, and recognizing factitious disorder by proxy
► For each injury, there is discussion of epidemiology, approaches to identification, evaluation and treatment, and differential diagnosis

From the contents
Child Abuse as a Health Problem.
- Scope of the Problem.
- Overview of the Health Care Evaluation of Physical Abuse and Neglect.
- Specific Injuries.
- Skin Injuries: Bruises and Burns.
- Evaluation of Fractures and Skeletal Injuries.
- Abdominal and Thoracic Trauma.
- Abusive Heat Trauma.
- Child Neglect and Failure to Thrive.
- Medical Child Abuse.
- Other Patterns of Injury and Child Fatality.
- Related Issues.
- Children with Special Health Care Needs (CSHCN).
- Intimate Partner Violence.

Fields of interest
Maternal and Child Health; Pediatrics; Social Work

Target groups
Public health practitioners in maternal & child health, school health, and physicians, nurses, clinical social workers, child psychologists, school psychologists; law enforcement and attorneys

Discount group
P

Microskin Grafting for Vitiligo

This book aims to provide information on the application of microskin grafting to repigmentation of vitiligo, effectively economising the procedure and offering a quick surgical practice. The procedure will be illustrated in an extensive selection of images to offer the physician a thorough education in the technique so they may carry out the process safely, efficiently and with confidence. This atlas will focus on the surgical procedure, but special attention will also be given to regional anesthesia techniques which will also work as postoperative analgesia for the donor site discomfort and burning.

Features
► Provides information on the application of an emerging technique in cosmetic surgery
► High quality images of operative steps of the surgical procedure
► Offers high levels of technical detail unseen in related work
► Clear and concise demonstrations of regional anesthesia blocks
► Original patient photographs and equipment used to depict the practical detail and real surgical outcomes

Contents
Introduction, Stable vitiligo-Definition, Indication and contraindication for vitiligo surgery, Selection of patient, Methods for surgical repigmentation, Ultra thin micro skin grafting (Definition, Preparation of patient, Pre medication, Planning of loco regional, anesthesia, Equipment needed, Technical detail, Post operative result, Short coming and technical difficulties, Complications, Tips and tricks).

Fields of interest
Dermatology; Plastic Surgery

Target groups
Dermatologists, plastic surgeons, cosmetic surgeons and institution and hospital libraries

Discount group
MR
VOXEL-MAN 3D-Navigator

Inner Organs. Regional, Systematic and Radiological Anatomy / Innere Organe. Topographische, Systematische und Radiologische Anatomie


Voxel-Man 3D Navigator is a completely new type of atlas of anatomy and radiology. It allows the interactive exploration and interrogation of a high-resolution, realistic and detailed 3D anatomy model. A further feature: the radiologic components (X-ray and CT) can be explored in context of 3D anatomy. This second volume Inner Organs covers the organs of the chest, the abdomen and the pelvis, including the skeleton and the principal structures of the nervous and vascular systems. The approximately 650 three-dimensional objects are based on data obtained in the Visible Human Project.

Features
► Allows interactive exploration of a 3D anatomy model with the possibility of interrogating
► Unlike in classical teaching, the different aspects of anatomy can be learned at the same time in the very context of three-dimensional anatomy
► A unique multimedia tool

System requirements
For PC. For the complete system requirements see: springer.com

Fields of interest
Anatomy; Imaging / Radiology; Internal Medicine

Target groups
Students, scientists and clinicians

Discount group
MR

Pediatric Anesthesiology Review

Clinical Cases for Self-Assessment

Based on a program of study developed at the Children’s Hospital Boston, Department of Anesthesiology, Perioperative and Pain Medicine, Pediatric Anesthesiology Review: Clinical Cases for Self-Assessment provides essential medical information for the subspecialty of pediatric anesthesiology. Illustrating the broad spectrum of the pediatric anesthesiologist’s practice, this book utilizes an interactive question and answer dialogue which imitates the simplicity of conversation and affords the reader high-yield benefits. The case-based approach encourages readers to collaborate with colleagues, improve their oral presentation skills, and prepare for challenging situations by explaining various anesthesia care plans and why specific data are required before and during the care of the pediatric patient.

Features
► The most up to date study aid for pediatric anesthesiology available
► Expanded question and answer format provides a unique forum for discussion
► Based on the experience and proven teaching strategies of world leaders in the field
► Illustrative case-based approach creates an exciting, high yield experience
► Excellent for use in individual and group study

Fields of interest
Anesthesiology; Pediatrics; Intensive / Critical Care Medicine

Target groups
Anesthesiologists, nurse anesthetists, emergency medicine specialists, critical care specialists, pediatricians

Discount group
MR

Surgery for Sleep Disordered Breathing

The new edition of Surgery for Sleep Disordered Breathing has been completely updated and enriched by the inclusion of various new surgical techniques. Further, since the question of which treatment best fits each individual patient has become a highly sophisticated decision, the new edition of this book focuses on both the surgical treatment modalities as well as the current concepts for treatment decisions. For each procedure, current data were reanalyzed according to the principles of evidence-based medicine and are presented in well-arranged and reader-friendly tables. Indications, techniques, complications, and specific follow-up treatments in the realm of sleep medicine have been compiled in the form of a primer with an accompanying DVD presenting all relevant surgical techniques. This outstanding title has become an essential text-book for sleep medicine surgeons, with valuable tips and pearls of wisdom designed to help physicians reach the best possible treatment outcome for their patients.

Features
► Written by two famous authors who run two of the largest otolaryngological sleep laboratories and perform approximately 1500 surgical sleep medicine procedures per year
► Evidence-based as well as based on the complete surgical and sleep medicine know-how of the authors, who regularly hold numerous international courses on sleep surgery

Fields of interest
Otorhinolaryngology; Oral and Maxillofacial Surgery; Pneumology/Respiratory System

Target groups
Otorhinolaryngologists, ENT, head and neck surgeons, oral and maxillofacial surgeons, neurosurgeons, general surgeons as well as all those working in the field of respiratory and sleep medicine

Discount group
MR

**Due January 2010**

1st ed. 2003. 2nd printing 2010. DVD
► ca. $119.00
ISBN 978-3-642-10495-4

**Due January 2010**

► $89.95

**Due February 2010**

2nd ed. 2010. XVI, 286 p. 98 illus., 85 in color. With DVD. Hardcover
► $189.00
ISBN 978-3-540-77785-4
Targeted Cancer Therapy

In the era of personalized medicine, cancer treatment has become a model for the use of targeted therapeutics. Leaving behind the “one size fits all” approach to cancer care, this book provides the practicing oncologist with an overview of the advances in treatment and an understanding of the implementation of new therapeutic agents. Targeted Cancer Therapy is divided into twenty chapters covering specific hematologic malignancies and solid tumors, targeted and functional imaging, and combination therapies. Each disease specific chapter includes up-to-date information on investigational and FDA approved therapies which will enhance the reader’s ability to prescribe effective drug regimens. This includes combinations of therapies and therapeutic modalities to overcome drug resistance.

Features
► Will optimize the reader’s ability to prescribe effective therapeutic regimens ► Provides knowledge on building drug combinations that overcome disease resistance ► Illustrates the use of personalized medicine in cancer treatment ► Divided into clearly organized, site specific chapters ► Presents the forefront in the practical implementation of targeted therapeutics

From the contents
Perspectives: Bench to Bedside and Back.
- Targeted Therapy in Acute Myelogenous Leukemia.
- Targeted Therapy in Breast Cancer.
- Targeted Therapy in Chronic Lymphocytic Leukemia.
- Targeted Therapy in Chronic Myeloid Leukemia.
- Targeted Therapy in Colorectal Cancer.

Fields of interest
Oncology; Hematology; Cancer Research

Target groups
Practicing and academic physicians, fellows, residents and students, and basic scientists interested in the cancer field

Discount group
MC

A Public Health Perspective of Women’s Mental Health

This book looks at service delivery issues in mental health care for women. It uses a public health framework, starting with the epidemiology of mental disorders in girls, adult women, and elderly women, and going on to examine the unique service needs of specific populations, for example women in prison, and women with mental illness who have young children. The book also examines gender differences in the use of mental health services and treatment outcomes between men and women. In all, it addresses the issue of providing effective treatment to women, and draws conclusions on developing and improving mental health services.

Features
► Addresses disorders and conditions like depression, eating disorders, substance abuse, and menopause ► Co-editor Levin is major figure in behavioral health services research

From the contents
Part I. Overview & Epidemiology of Mental Disorders in Women.
- Public Health and Women’s Mental Health.
- Epidemiology of Mental Disorders in Girls and Female Adolescents.
- Mental Conditions in Adult Women: Epidemiology and Impact.
- Epidemiology of Mental Disorders in Older Women.
- Physical Illness and Medical Needs of Women with Mental Disorders.
- Part II. Selected Disorders.
- Depression and Postpartum Disorders.
- Eating Disorders.
- Menopause.
- Substance Abuse.
- HIV/AIDS and Mental Disorders.
- Part III. Services Delivery & Emerging Research.
- Services in an Era of Managed Care.

Fields of interest
Public Health/Gesundheitswesen; Psychiatry

Target groups
Graduate students and professionals in public health, health disparities, health administration, social work, behavioral health, clinical psychology, psychiatry, health services research

Discount group
MR

Attention Deficit Hyperactivity Disorder Handbook

A Physician’s Guide to ADHD, second edition

An expanded, updated, and revised edition, the ADHD Handbook, second edition covers recent advances in causes and management of ADHD, and includes more than 400 scientific references to peer-reviewed articles. It provides answers to the numerous questions that surround ADHD, including how is it diagnosed? What causes ADHD? What are the risks of associated learning and behavior disorders, tics, seizures, and headaches? What treatments are available? What are the choices of medications and the risks of side effects? How can adverse effects be avoided? What are the alternatives to medication? Do children outgrow ADHD, and how long is treatment required? ADHD Handbook is written for neurologists, pediatricians, practicing physicians, residents, fellows and students of medicine, psychologists, educators, occupational and speech therapists, nurse practitioners and other healthcare providers.

Features
► Designed for physicians, with each subject area supported by scientifically controlled studies and approximately 400 references to peer reviewed articles ► Author has more than 40 years experience in treating patients with ADHD and related disorders, was Founding Director of the pediatric neurology training programs at the Mayo Clinic and Northwestern University Feinberg School of Medicine

Fields of interest
Neurology; Pediatrics; General Practice / Family Medicine

Target groups
Practicing physicians, neurologists, pediatricians, psychiatrists, residents, fellows and students of medicine, psychologists, educators, educational administrators, occupational and speech therapists, nurse practitioners and other healthcare providers; parents of children, adolescents, and young adults with ADHD

Discount group
MR
Diseases of the Inner Ear
A Clinical, Radiologic, and Pathologic Atlas

This book is a comprehensive atlas of the clinical conditions that commonly involve the inner ear and lateral skull base. Each disorder or disease is meticulously and beautifully illustrated, with accompanying informative text. An important feature of the book is that no disorder is described from a single point of view. Instead, the clinical features are linked with both radiologic and pathologic findings to provide an all-encompassing picture of the condition in question. This is feasible because the book is the result of years of intense collaborative teamwork between departments at the University of Toronto and the Tehran University of Medical Sciences, and includes many clinical and pathologic images that could only be acquired in major referral units. It is anticipated that this atlas will assist greatly in improving collaboration between clinicians and surgeons in the diagnostic, therapeutic, and surgical management of disorders in this challenging area.

Features
- A comprehensive atlas of disorders that involve the inner ear and lateral skull base
- Links clinical features with radiologic and pathologic findings to provide an all-encompassing picture of each condition
- Based on years of close teamwork between departments at the University of Toronto and the Tehran University of Medical Sciences
- Includes many rare clinical and pathologic images

Fields of interest
Otorhinolaryngology; Head and Neck Surgery; Neuroradiology

Target groups
Otolaryngologists, otologists, radiologists and their residents, fellows of otology and neurootology, cochlear implant surgeons, neuroradiologists, skull base surgeons, medical students

Discount group
MR

Vestibular Evoked Myogenic Potential
Its Basics and Clinical Applications

This monograph on the vestibular evoked myogenic potential (VEMP) has been written by leading investigators in the field and reviews the most recent studies in VEMP. The research encompasses the neurophysiological bases, methods of recording, and applications for common vestibular disorders such as Meniere’s disease, vestibular neuritis, and acoustic neuroma. Also included is information on clinical applications to children and on ocular VEMP (oVEMP), a new variant of VEMP. Readers are provided with a full explanation of the principles and unique attributes of the VEMP test, proposed as a new method for assessing the individual saccule function, and will learn how the VEMP and caloric tests compare. Clinicians and scientists in particular can deepen their understanding of vestibular disorders with the knowledge contained in this monograph, which also serves as a quick reference for those interested in the vestibular system and this important new clinical test.

Features
- Quick reference book for all clinicians and scientists who are interested in the vestibular system
- Based on years of close teamwork between departments at the University of Toronto and the Tehran University of Medical Sciences
- Includes many rare clinical and pathologic images

Fields of interest
Otorhinolaryngology; Neurology; Pediatrics

Target groups
Otorhinolaryngologists

Discount group
MR

Preventive Dermatology

The physician’s responsibility continues to increase daily while providing health care in the 21st century; not only in keeping up with the increase of information, but also having to pay more attention to patient compliance. In addition, patients are educated, and often appreciate participation with a provider about treatment and medication choice. Often they have access to the Internet and other medical information and want to make informed choices along with their physician. Preventive Dermatology will convey prevention and medication information to patients and thus help them reap the benefits of participating in their own health care and disease reduction.

Features
- Chapters written by experienced dermatologists and physicians from around the world
- Deals with a subject of currently increasing interest
- Information gathered into one comprehensive dermatological text

Contents

Fields of interest
Dermatology; Health Promotion and Disease Prevention; General Practice / Family Medicine

Target groups
Residents, fellows and physicians in dermatology and infectious diseases

Discount group
MR
Hepatic Caudate Lobe Resection

This book provides a comprehensive and up-to-date coverage of research on the surgical technique of caudate lobe resection. The book introduces all kinds of procedures for caudate lobe resection, from basic ones to the most complex ones. A new surgical dissection technique using a simple yet versatile instrument is introduced, which is of great help in facilitating the procedure and enhancing the safety of the operation. More than 350 pictures about the anatomy of the caudate lobe, the surgical procedure or special instruments are presented, and 18 different videos are demonstrated. It is a great reference for liver surgeons learning about caudate lobe resection, as well as researchers and postgraduate students in the fields of hepatobiliary surgery.

Features
► Comprehensively describes different kinds of caudate lobe resection ► Rich in intraoperative photographs and an instructional MPEG video ► Contains a detailed description of the transthepatic approach, for resecting huge tumors originating in the caudate lobe safely ► Introduces a special instrument, PMOD, and an operative dissection technique helpful for technically difficult operations

System requirements
For PC. For the complete system requirements see: springer.com

Fields of interest
Surgical Oncology; Surgery; Hepatology

Target groups
Researchers and postgraduate students in the fields of hepatobiliary surgery, as well as liver surgeons learning about caudate lobe resection

Discount group
MR

Gastrointestinal Bleeding
A Practical Approach to Diagnosis and Management

The diagnosis and management of gastrointestinal bleeding is multidisciplinary by nature involving surgeons, gastroenterologists and radiologists. Due to various pathologies, it involves upper gut, lower gut and occult bleeding. Gastrointestinal Bleeding: A Practical Approach to Diagnosis and Management covers all aspects of bleeding in a systemic approach organized by the site of bleeding. Elective and emergent bleeding is also covered. This volume provides a practical text for the practitioner in addressing patient issues in their practice, with a step-by-step approach through appropriate diagnosis and management strategies including surgical, endoscopic, medical and angiographic techniques, making this a truly multidisciplinary and disease based text. Specific sections in the book are crafted by experts in each topic.

Features
► Step-by-step approach through appropriate diagnosis and management ► Written by world known experts in gastrointestinal diseases ► Provides practical management of specific bleeding sources ► Multidisciplinary and disease based approach ► Specific sections crafted by experts in each topic

From the contents

Fields of interest
Gastroenterology; Minimally Invasive Surgery; Surgery

Target groups
Gastroenterologists, surgeons, radiologists plus residents and fellows in these specialties

Discount group
MR

Retinoblastoma

Treatment of retinoblastoma has evolved at a significant speed over the last two decades; ocular salvage approaches are now at the core of modern treatments, and assessment of visual and functional outcomes has become a priority. New discoveries in retinoblastoma biology are leading the way to the development of targeted therapies that could revolutionize our current approaches to the treatment. In this book, experts address all the important aspects of research and therapy - from biology to epidemiology to treatment. Retinoblastoma will provide a single source for the diagnosis and care of children with this malignancy.

Features
► Information regarding the biology, treatment, and research on retinoblastoma is very scattered and has not been put together in a single book ► This would be the first book focused specifically on this malignancy and would have a worldwide audience

Contents

Fields of interest
Oncology; Ophthalmology; Pediatrics

Target groups
Pediatric oncologists, ophthalmologists, radiation oncologists, neurobiologists and psychologists

Discount group
MR
Kanerva's Occupational Skin Diseases

The 1st edition of this Handbook of Occupational Dermatology was published in 2000 and has served as the main reference book of occupational skin diseases for general and occupational dermatologists and occupational physicians. The new edition is completely revised, updated and extended with respect to new developments. The layout allows for both quick access to practical information and in-depth reading. Included are concise tables, algorithms and figures on how to optimize the diagnostic procedure for daily patient management and expert opinion.

Fields of interest
Dermatology; Allergology; Occupational Medicine/Industrial Medicine

Target groups
Dermatologists, general practitioners, scientists; both experts and students

Discount group
MR

Basics of PET Imaging
Physics, Chemistry, and Regulations

This is an ideal text on PET and PET/CT imaging technology that focuses on the basics, such as physics, instrumentation, production of PET radionuclides and radiopharmaceuticals, and regulations affecting PET. The chapters are concise but comprehensive, making the topic easily understandable, and they are complete with reviews of pertinent basic science, sample questions, and lists of suggested reading. Practical tables and appendices contain a wealth of valuable data, reflecting the book's usefulness as a reference for nuclear medicine professionals, including physicians, residents and technologists. The book also benefits technologists and residents preparing for board examinations because of its brevity and clarity of content.

Fields of interest
Nuclear Medicine; Imaging / Radiology

Target groups
Nuclear medicine technologists, nuclear medicine physicians, residents, and fellows

Discount group
P

Hernia Repair Sequelae

Even the best hernia repair can result in postoperative difficulties for the patient caused by repair sequelae as for example pain, infertility, infection, adhesion and dislocation of the protheses. That can happen many years later and now, where the general principle of hernia repair is well understood all over the world, these sequelae are noticed more and more. To define them, to evaluate the absolute and relative risk of these sequelae and to describe the ways of their prevention, diagnosis and treatment, the 5th Suvretta meeting had focused on this subject. We discussed if there's a principle risk by technique, material or both. The results of these discussions and the future handling and evaluation of this problem was the aim of this meeting. Even the best method can be made better by optimization of its single components.

Contents
From the contents: I. Risk for the Spermatic Cord.- II. Risk for Infection.- III. Risk for Pain.- IV. Risk for Adhesion.- V. Risk for Migration and Erosion.- VI. Strategy to Improve Results.- VII. Pro and Contra.

Fields of interest
Surgery

Target groups
Surgeons, gastroenterologists

Discount group
MR
Breast Imaging Review
A Quick Guide to Essential Diagnoses

This book helps to prepare diagnostic radiology residents for the radiology oral board examination. It will also be a useful reference for the practicing radiologist. The book will consist of over 90 breast imaging cases that are often tested on the oral examination. Each case will have a full-page image along with patient history, radiographic findings, BI-RADS assessment, diagnosis, discussion, and references. There is currently only one other breast imaging review book on the market, but the images that appear in it are relatively small and of poor quality. This book will contain numerous color and black and white images of high quality and size. The discussion section will be concise and relevant to the ABR exam.

Contents

Field of interest
Imaging / Radiology

Target groups
Radiology residents, diagnostic radiologists

Discount group
MC

Aging Hair

The scalp and hair are subject to both intrinsic or physiologic aging and extrinsic or premature aging caused by external factors. This comprehensive and reader-friendly book offers an up-to-date overview on all aspects of hair aging, including in particular the two main streams of interest: the aesthetic problem, which relates to everything that happens outside the skin, and the biologic problem, which concerns the “secret life” of the hair follicle in the depth of the skin. Internationally recognized experts provide detailed contributions on the biologic basis of hair aging and current concepts for its diagnosis, treatment, and prevention. The intrinsic and extrinsic modulating factors for hair growth and pigmentation are explained and future directions for therapeutic intervention are examined.
In summary, this unique book offers valuable insights into hair aging and guidance on its treatment; it will prove invaluable both to dermatologists and to other interested physicians and basic scientists.

Features
➤ A comprehensive, reader-friendly book that outlines and discusses current concepts for the diagnosis, treatment, and prevention of hair aging
➤ Explains the different causes of hair aging
➤ Provides clear guidance on treatment options and examines future directions for therapeutic intervention
➤ Written by internationally recognized experts for dermatologists and other physicians and scientists interested in the field

Fields of interest
Dermatology; Geriatrics/Gerontology; General Practice / Family Medicine

Target groups
Dermatologists and all other physicians dealing with patients with hair disorders as well as scientists interested in hair research

Discount group
MR
Cancer and Energy Balance, Epidemiology and Overview

Energy Balance and Cancer, Epidemiology and Overview is the first in a series of monographs to address the multiple facets of the world wide pandemic of overweight and obesity and its relation to cancer. This volume, authored by leading experts in their respective fields, provides a broad and comprehensive overview of the problem from the epidemiologic viewpoint with focus on both general and special populations as well as a description of potential molecular mechanisms and reviews of the latest studies of factors impacting the association of energy balance and cancer including the effects of genetics, caloric restriction, exercise, behavior and the built environment.

The collected chapters and the authors contributing to this initial volume represent a transdisciplinary approach to analyze and develop novel approaches to understand and solve what, up to now, is a globally refractory problem. The book is written to be understandable and informative to individuals from all concerned disciplines.

Features

- This is a new area, in which there are not yet books
- However, the AACR just held a meeting on this up and coming topic

Contents


Fields of interest

Cancer Research; Pharmacology/Toxicology

Target groups

Cancer researchers

Discount group

P

Diet and Cancer

Series editor: A. Albini

These Series will be address to Scientists and Clinicians involved in Oncology and Cancer Prevention, to Nutritional Scientists and Epidemiologists. Diet and Cancer Book Series will focus on the important role of diet and dietary components for people at risk for several cancer.

Many scientific data have been collected and published on the importance of dietary ingredients of curing or preventing cancer with the reduction of cardiovascular side effects compared to cancer chemotherapy.

Here we would like to define the effects of some classes of aliments, drinks, dietary components, and explain their role as potential cancer prevention agents, suggest biomarkers and discuss about the benefits of certain lifestyle factors in tumour prevention.

The final objective of the Book Series is to help people with practical and scientific information in order to reduce cancer risk.

Features

- Gives the latest information on the possible benefits of w-3 PUFAs in cancer
- Distinguishes the results obtained in in vitro, preclinical and clinical studies
- Distinguishes the effects reported for different kinds of human cancers
- Covers discrepancies among epidemiologic studies

From the contents

Introduction: w-3 pufas, why do we speak about them? 1. possible mechanisms of w-3 pufa antitumor action; 2. w-3 pufas and colon cancer, a) w-3 pufas and colon cancer: epidemiological studies, b) w-3 pufas and colon cancer: experimental studies and human interventional trials; 3. w-3 pufas and hormone related cancers (breast and prostate), a) w-3 pufas and breast cancer: epidemiological studies.

Fields of interest

Cancer Research; Oncology; Nutrition

Target groups

Libraries, research workers, physicians, patients

Discount group

P

Dietary Omega-3 Polyunsaturated Fatty Acids and Cancer

Dietary Omega-3 Polyunsaturated Fatty Acids and Cancer provides all the latest information on the possible benefits of omega-3 polyunsaturated fatty acids (PUFAs) against a wide series of cancers.

Several influential scientists in this field have contributed to make this book an unique one amongst the others published so far in this field.

The chapters give detailed information about the results obtained in this field through experimental studies conducted on both animals and cultured cells, as well as through human intervention trials and epidemiological observational studies. This book represents an important tool for researchers working in nutrition and oncology, since it collects all the knowledge about omega-3 PUFAs and cancer, even the most recent, in a single publication. For the first time controversies among the different studies are also covered with great details in this book.

Features

- Gives the latest information on the possible benefits of w-3 PUFAs in cancer
- Distinguishes the results obtained in in vitro, preclinical and clinical studies
- Distinguishes the effects reported for different kinds of human cancers
- Covers discrepancies among epidemiologic studies

From the contents

Introduction: w-3 pufas, why do we speak about them? 1. possible mechanisms of w-3 pufa antitumor action; 2. w-3 pufas and colon cancer, a) w-3 pufas and colon cancer: epidemiological studies, b) w-3 pufas and colon cancer: experimental studies and human interventional trials; 3. w-3 pufas and hormone related cancers (breast and prostate), a) w-3 pufas and breast cancer: epidemiological studies.
Microarray Methods for Drug Discovery

While the utilization of microarrays for gene expression studies has been widely published, Microarray Methods for Drug Discovery describes the use of this technology for a multitude of other vital applications. Covering the field of drug discovery through its various aspects, including high throughput screening, target identification, drug metabolism and toxicity screening as well as clinical sample handling, this volume also addresses new emerging fields like miRNA profiling, ribonomic and glyconomic profiling. All chapters, contributed by experts in the field, follow the highly successful Methods in Molecular Biology® series format, which is comprised of brief introductions, lists of required materials and reagents, readily reproducible, step-by-step lab protocols, along with detailed tips on troubleshooting and avoiding known pitfalls, making this book an easy read for investigators at all levels of expertise.

Features
► Provides a single volume reference for all types of microarrays
► Covers a wide range of microarray platforms used in genomics, epigenomics, genotyping, proteomics, and small molecule screening
► Serves as a comprehensive step-by-step guide to design, implement, and analyze data from various array platforms
► A good reference for designing microarray experiments to decipher transcriptome regulation and DNA modifications

Fields of interest
Pharmacology/Toxicology; Human Genetics

Target groups
Biochemists, pharmaceutical scientists, geneticists, molecular and cellular biologists

Discount group
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Supportive Cancer Care with Chinese Medicine

The chapters coherently present an overview on the major treatment approaches of Chinese medicine and progresses made with different important aspects on supportive cancer care with acupuncture, herbal therapy and qigong. Moreover, there are reviews on the evidences and efficacies of Chinese medicine for controlling radiation-induced injuries, chemotherapy-related side effects, as well as pain control with Chinese medicine. In order to provide information from basic science at the bench to the patient’s bedside, modern researches and clinical trials would be overviewed so as to give an up-to-date and realistic evaluation of a therapy’s utility for cancer patients. It is also worth noting that toxicology, safety and herb-drug interactions are the main concerns of using Chinese medicine combined with western medicine. A chapter will expound on these issues and there will also be chapters discussing integrative Chinese and Western medicine, as well as cancer prevention with Chinese medicine.

Features
► A specialised book on supportive cancer care with Chinese medicine
► Gathering unparalleled topics of interest in supportive cancer care with Chinese medicine
► Apart from curative treatment lead by surgery, radiotherapy and chemotherapy, supportive cancer care and improvement in quality of life become more important as there are more cancer patients survive after primary treatment

Fields of interest
Cancer Research; Oncology; Complementary & Alternative Medicine

Target groups
Oncologists, cancer researchers pharmacologists, pharmaceutical specialists, traditional Chinese medicine practitioners, Chinese medicine educators, medicine postgraduates and undergraduates, cancer caregivers, cancer survivors, family members of cancer patients

Discount group
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Diabetes, Insulin and Alzheimer’s Disease

This volume brings together experts from basic and clinical science to provide a broad survey of the role of insulin in the brain, and to discuss the mechanisms through which insulin dysregulation contributes to the development of cognitive impairment and late-life neurodegenerative disease. Each author has greatly furthered our understanding of the relationships among insulin, diabetes, and Alzheimer’s disease, moving us far beyond the belief that the brain is an insulin-insensitive organ. Given the recent pandemic of conditions associated with insulin resistance, it is imperative that we achieve a comprehensive knowledge of the mechanisms through which insulin resistance affects brain function in order to develop therapeutic strategies to address these effects.

From the contents

Fields of interest
Neurosciences; Endocrinology; Geriatrics/Gerontology

Target groups
Researchers and scientists in the field of diabetes and neurodegenerative disorders

Discount group
P
Comparative and Veterinary Pharmacology

The topics addressed in this volume of comparative and veterinary pharmacology, as a series of succinct state of the art reviews, illustrate both the commonality and differences between drug pharmacodynamics and pharmacokinetics in animals and man and demonstrate the potential impact of drug use in animals on human health and the environment. Genetic modification of animals and the benefits this has brought to understanding human disease and the production of drugs for use in man is considered and the potential of new technologies for improving the treatment of animal disease explored.

Contents

Fields of interest
Pharmacology/Toxicology; Veterinary Medicine; Medicine/Public Health, general

Target groups
Libraries, researchers and clinicians in the fields of pharmacology and veterinary medicine

Discount group
P

Hippocampal Microcircuits
A Computational Modeler’s Resource Book

Covering the subject’s experimental background, leading neuroscientists discuss the morphological, physiological and molecular characteristics as well as the connectivity and synaptic properties of the various cell types found in the hippocampus. Here, ensemble activity, related to behavior, on the part of morphologically identified neurons in anesthetized and freely moving animals, lead to insights into the functions of hippocampal areas. In the second section, on computational analysis, computational neuroscientists present models of hippocampal microcircuits at various levels of detail, including single-cell and network levels. A full chapter is devoted to the single-neuron and network simulation environments currently used by computational neuroscientists in developing their models. In addition to the above, the chapters also identify outstanding questions and areas in need of further clarification that will guide future research by computational neuroscientists.

From the contents

Fields of interest
Neurosciences; Neurobiology; Computer Appl. in Life Sciences

Target groups
Computational neuroscientists, experimental neuroscientists

Discount group
P

Vaccine Adjuvants
Methods and Protocols

Spanning from discoveries in fundamental immunology to industrial and commercial concerns, the study of vaccine adjuvants has developed into an exciting area of work with great, vital potential in innovating techniques in which adjuvants may steer the immune system towards the responses required by unmet vaccination needs. In Vaccine Adjuvants: Methods and Protocols, expert researchers in the field provide clear and concise guidance on how to go about assessing the activity of adjuvant products. Rather than describing individual adjuvants, the volume strives to include detailed, practical information on measuring the responses produced by adjuvants in order to be relevant to the widest array of experiments. 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 notes on troubleshooting and avoiding known pitfalls.

Features
► Provides an easily accessible reference volume for methods used to evaluate vaccine adjuvants written by leading researchers in the field
► Presents methods to evaluate different aspects of the mechanism of action of vaccine adjuvants
► Presents an approach based on the results of adjuvant activity, covering in vitro and in vivo model biological systems and approaches to data analysis

Fields of interest
Immunology; Vaccine

Target groups
Vaccinologists, immunologists, biochemists and formulation specialists

Discount group
P

Biomedical and Life Sciences

Due March 2010

► $419.00
ISBN 978-3-642-10323-0

Due January 2010

► approx. $189.00
ISBN 978-1-4419-0995-4

Humana Press

Biomedical and Life Sciences

Due March 2010

2010. Approx. 310 p. 40 Illus. (Methods in Molecular Biology, Volume 626) Hardcover
► $119.00
Calorie Restriction, Aging and Longevity

Over the last 20 or more years there has been a progressive rise in food intake in many countries of the world, accompanied by a rising incidence of obesity. Thus our increasing food and calorie intake has been linked to the rising incidence of cardiovascular disease and diabetes in early adult life. It is accepted that overeating, accompanied by reduced physical exercise, will lead to more age-related diseases and shortening of life-span.

The answer is to reduce our calorie intake, improve our diet, and exercise more. But calorie restriction is extremely difficult to maintain for long periods. How then can we solve this problem?

Edited by a team of highly distinguished academics, this book provides the latest information on the beneficial effects of calorie restriction on health and life-span. This book brings us closer to an understanding at the molecular, cellular and whole organism level of the way forward.

Features
► Discusses how the long-term reduction in calorie or food intake will delay the onset of age-related diseases
► Provides the latest information on health and life-span effects of Calorie Restriction
► Covers effects on the molecular, cellular and whole organism level
► Edited by a team of highly distinguished academics

Contents
Part I Calorie Restriction In Different Species.- Part II Biochemical And Metabolic Mechanisms Of Calorie Restriction.- Part III Calorie Restriction In The Clinical Setting.

Fields of interest
Human Physiology; Geriatrics/Gerontology; Oxidative Stress

Target groups
Scientists and graduate students working in aging and gerontology, academic libraries, pharma- and biotech companies doing anti-aging research

Antimicrobial Peptides
Methods and Protocols

The action of antimicrobial peptides (AMPs), ranging from direct killing of invading pathogens to immune response modulation and other complex biological responses, has stimulated research and clinical interest for more than two decades, but the area is still burgeoning due to emerging discoveries in the functions, roles, and regulation of AMPs, thus making the study of antimicrobial peptides a multi-disciplinary and rapidly evolving field. In Antimicrobial Peptides: Methods and Protocols, leading investigators present a broad, up-to-date collection of current research and experimental methods for the isolation, characterization, production, and optimization of antimicrobial peptides. Additional chapters detail methodologies in several microscopy techniques, high-throughput screening, QSAR modeling, and computer-aided design used to study these compounds, while key review articles survey potential medical applications of antimicrobial peptides as innovative anti-infective and immunomodulatory agents.

Features
► Covers an expanding field of research with high applicative potential via the most cutting-edge methods
► Provides contributions from scientists from different disciplines and backgrounds, from both industry and academia
► Provides notes sections describing major sources of problems that may occur with a particular technique and how they can be identified and overcome

Fields of interest
Immunology; Antibodies

Target groups
Microbiologists, pharmacologists, immunologists, peptide chemists, and molecular biologists

Cancer Nanotechnology
Methods and Protocols

Early detection of cancer at the cellular level, even before anatomic anomalies are visible, is critical to more efficacious and cost-effective diagnosis and therapeutic advances. In Cancer Nanotechnology: Methods and Protocols, an international panel of experts provide the most recent, cutting-edge, “how-to” approaches developed and employed by researchers in a variety of disciplines to identify cancer specific biomarkers, construct suitable multifunctional targeted nanostructure platforms, along with enhanced imaging and therapeutic applications. Covering such topics as multifunctional and multimodal nanoparticles, nanoparticle mediated cancer theranostics, molecular targets for cancer nanotechnology, and nanoparticles for non-invasive image-guided cancer therapy, the volume addresses the key challenges of the field today, specifically targeted and localized delivery of the drugs.

Features
► Includes cutting-edge methods from leading experts in the field
► Details nanoparticle platforms currently employed for cancer
► Provides detailed protocols with notes written from extensive experience
► Contains applications of nanotechnology for cancer imaging
► Elucidates delivery and targeting of nanomaterials for cancer therapy

Fields of interest
Cancer Research; Oncology; Laboratory Medicine

Target groups
Cancer researchers, cancer biologists, pharmacologists, cancer physicians, materials scientists, translational scientists, biotechnologists, and biomedical engineers

Discount group
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Humana Press

Springer Protocols
Due January 2010

2010. Approx. 390 p. 72 Illus., 3 in color. (Methods in Molecular Biology, Volume 618) Hardcover
► $139.00
ISBN 978-1-60761-593-4
Frontiers in Brain Repair

In Chapter 1 the fundamentals of imaging transplanted cells is discussed with emphasis on animal models as well as the horizon for clinical trials. Then, detailed methods on the culture of neural stem cells is reviewed as a foundation for approaching therapeutic goals. Chapter 3 presents the broad scope of animal models that serve as the foundation for developmental and pre-clinical investigation, with mention of recent genetically engineered mouse models that represent the best models for studying disease development and treatment. Chapter 4 provides background on the delivery techniques to animals and patients that are available, providing vital information on the subtleties of technique necessary for optimal cellular grafting. Chapters 5 and 6 discuss new and evolving information on the origins of brain tumors and the indelible role of stromal and microenvironmental influences on oncogenesis and tumor progression.

Contents

Field of interest
Neurosciences

Target groups
Researchers and scientists

Discount group
P

The Handbook of Biomarkers

Of the thousands of biomarkers that are currently being discovered, relatively few are being validated for further applications, and the potential of a biomarker can be quite difficult to evaluate. To aid in this imperative research, Handbook of Biomarkers thoroughly describes many different types of biomarkers and their discovery using various “-omics” technologies, such as proteomics and metabolomics, along with the background information needed for the evaluation of biomarkers as well as the essential procedures for their validation and use in clinical trials. With biomarkers described first according to technologies and then according to various diseases, this detailed book features the key correlations between diseases and classifications of biomarkers, which provides the reader with a guide to sort out current and future biomarkers.

Features
► Provides uniformity of style and avoids duplication as only a single author book can ► Written by a physician-scientist author who blends his clinical experience and scientific expertise in new technologies to provide a definitive account of biomarker research ► Complete with a more up-to-date and comprehensive coverage of biomarkers than any other comparable work

Contents

Fields of interest
Pharmacology/Toxicology; Medicinal Chemistry

Target groups
Pharmacologists, biotechnologists, molecular diagnosticians, personalized medicine specialists, pathologists, and practicing physicians

Discount group
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Protein Kinase C in Cancer Signaling and Therapy

Protein kinase C (PKC), a family of serine-threonine kinases, rocketed to the forefront of the cancer research field in the early 1980’s with its identification as an effector of phorbol esters, natural products with tumor promoting activity. Phorbol esters had long been of interest to the cancer research field due to early studies in the mouse skin carcinogenesis model, which showed that prolonged topical application of phorbol esters promoted the formation of skin tumors on mice previously treated with mutagenic agents. Research in the last years has established key roles for PKC isozymes in the control of cell proliferation, migration, adhesion, and malignant transformation. In addition, there is a large body of evidence linking PKC to invasion and cancer cell metastasis. Moreover, it is now well established that the expression of PKC isozymes is altered in various types of cancers. More importantly, small molecule inhibitors have been developed with significant anti-cancer activity.

Features
- Focuses specifically on PKC signaling at a mechanistic level in the context of cancer
- The first to present in a very detailed manner the implication of PKC isozymes in different types of cancers
- There will be a full section on anticancer agents that target PKC and on how PKC modulates the sensitivity of cancer cells to chemotherapeutic drugs

Fields of interest
Cancer Research; Pharmacology/Toxicology

Target groups
Cancer researchers

Discount group
P

RT-PCR Protocols
Second Edition

Once a tedious, highly skilled operation, reverse-transcription polymerase chain reaction (RT-PCR) has become a routine and invaluable technique used in most laboratories. In RT-PCR Protocols, Second Edition, expert researchers fully update the technologies presented in the popular previous edition, such as competitive RT-PCR, nested RT-PCR, RT-PCR from single cells, and RT-PCR for cloning. In addition, newer technologies are also explored, including multiplex RT-PCR, RT-LATE-PCR, and the greatly advanced field of real-time quantitative RT-PCR, while recent advances in creating the optimum RT-PCR reaction, e.g. RNA extraction, primer design, and reverse transcription, end the book with their indispensable input. Written in the highly successful Methods in Molecular Biology™ series format, chapters include brief introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, ready reproducible protocols, and notes sections.

Features
- Provides detailed and easy to follow instructions for a wide range of RT-PCR protocols
- Features all the latest and hottest technology used in conventional and real-time RT-PCR
- Provides a broad scope covered in good depth, from detection of minute quantities of microRNA to the analysis of complex cell populations
- Serves as a comprehensive guide to setting up, running, and analyzing an RT-PCR experiment

Fields of interest
Human Genetics; Gene Expression

Target groups
Biochemists, molecular and cellular biologists, cancer and developmental biologists, virologists, microbiologists, physiologists, and immunologists

Discount group
P

Quality Issues in Clinical Genetic Services

Measuring quality of health care related processes became an issue in the 1990s, mainly in laboratory medicine, but also for hospitals and other health care systems. In many countries national authorities started to implement recommendations, guidelines or legal procedures regulating quality of health care delivery. In laboratory medicine, in parallel, the use of accreditation as a method assuring high quality standards in testing came in use. With the increasing possibilities of performing molecular genetic testing, genetic laboratories needed to become involved in this process. As many genetic disorders are rare, most laboratories worldwide offered analysis for a specific set of disorders, and, therefore, very early on a transborder flow of samples occurred. While international quality criteria (ISO) have been in existence for a number of years, the regulation of quality issues still may differ between countries.

Features
- First book on the topic reviewing a whole series of QA issues in clinical/medical genetics
- There is a need for laboratory managers and administrators to know the basic QA in clinical genetic services
- There is a need for health care administrators to have some insight in the topic they are regulating
- Important for young investigators planning a career in human genetic services

Contents
Foreword.- 1 Improving quality and harmonization of standards in clinical genetic services in Europe: The EuroGentest Network.

Fields of interest
Laboratory Medicine; Medicine/Public Health, general; Human Genetics

Target groups
Health care administrators, laboratory and clinical managers in clinical/medical genetics, staff involved in QA administration

Discount group
P
**Muscle Pain: Understanding the Mechanisms**

The two books, Muscle Pain: Understanding the Mechanisms and Muscle Pain: Diagnosis and Treatment will help the practitioner to understand why the patients feel pain, what to do about it and why the treatment works. In contrast to proceedings of scientific meetings on muscle pain, they center on practical aspects and can be used by the practitioner in his or her daily work. The two books together provide a unique combination of broad basic knowledge with comprehensive clinical information on the management of patients.

**Contents**

**Fields of interest**
Neurosciences; Human Physiology; Neurology

**Target groups**
Researchers, practitioners and libraries in the fields of neurophysiology, neuroanatomy, neurology and molecular neuroscience

**Discount group**
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**Muscle Pain: Diagnosis and Treatment**

The companion volume to Muscle Pain: Understanding the Mechanisms, this text shifts the emphasis from concepts to practical advice. It facilitates the diagnosis and management of the often enigmatic symptoms of chronic muscle pain and includes the combined expertise of leaders in the field who have contributed cutting-edge material on the major syndromes. As a set, this volume and its partner are essential reading for practitioners treating acute and chronic pain conditions involving muscle tissues.

**Contents**

**Fields of interest**
Neurosciences; Human Physiology; Neurology

**Target groups**
Researchers, practitioners and libraries in the fields of neurophysiology, neuroanatomy, neurology and molecular neuroscience

**Discount group**
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**Therapeutic Applications of Cell Microencapsulation**

The main objective has been to analyze in depth and discuss the different aspects related to the design and elaboration of cell-enclosing microcapsules, even the regulatory features and clinical trials under development. These improvements will lead to progression in this therapeutic approach which may become one day closer to a realistic proposal for clinical application.

The advances in drug delivery technology have enabled a new era of drug discovery and development. In this regard, cell microencapsulation is a technology that opens new venues and possibilities to the administration of new active principles and may be the key to solve several issues related to the correct administration of new therapeutic agents to final success in the clinical setting.

The editors believe that this technology may have important applicability not only in the field of drug delivery (to treat diseases such as cancer, neurodegenerative disorders, metabolic diseases etc.) but in cellular therapy and tissue regeneration.

**From the contents**

**Fields of interest**
Biomedicine general; Medical Microbiology

**Target groups**
Researchers and scientists

**Discount group**
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**Biomedical and Life Sciences**

**Due April 2010**
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► approx. $209.00
ISBN 978-3-540-85020-5

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**Biomedical and Life Sciences**

**Due April 2010**
2010, X, 350 p. Hardcover
► approx. $209.00
ISBN 978-3-642-05467-9

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**Due March 2010**
2010, Approx. 165 p. 32 Illus., 5 in color. (Advances in Experimental Medicine and Biology, Volume 670) Hardcover
► $179.00
ISBN 978-1-4419-5785-6
CCN proteins in health and disease
An overview of the Fifth International Workshop on the CCN family of genes

This book comprises a series of selected manuscripts that are based on the original communications that were presented at the meeting by worldwide leaders in the field of CCN biology. All major aspects of CCN proteins biology in both normal and pathological conditions are covered in this volume, from structure-functions analysis up to the involvement of CCN proteins in complex physiological functions. In addition to reports that support the Yin-Yang concept of CCN proteins driving opposite effects on the same biological process, this book also comprises several contributions that point to CCN proteins as amenable targets for therapeutic manipulation of disease processes. Together with the special issue of Journal of Cell Communication and Signaling in which authors have extended on the original data presented at the meeting, these Proceedings provide an instant picture and unique update of the state of the art in the CCN field.

Fields of interest
Biomedicine general; Gene Function; Molecular Medicine

Target groups
Researchers

Discount group
P

Pseudomonas
Volume 6: Molecular Microbiology, Infection and Biodiversity

The five previous volumes of Pseudomonas series covered the biology of pseudomonads in a wide context, including the niches they inhabit, the taxonomic relations among members of this group, the molecular biology of gene expression in different niches and under different environmental conditions, the analysis of virulence traits in plants, animals and human pathogens as well as the determinants that make some strains useful for biotechnological applications and promotion of plant growth. Pseudomonas volume 6 is intended to collect new information on molecular microbiology, infection and biodiversity. This sixth volume covers the following topics: transcription regulation, virulence control, physiology and metabolism, bacteriology, microbial genetics and genomics. Pseudomonas volume 6 will be of use to researchers working on these bacteria, particularly those studying genomics, physiology, quorum sensing, life styles, metabolism etc.

Features
► An excellent overview of the recently discovered bacterial regulatory systems, including small RNA, cyclic di-GMP or quinolone ► A very complete description of an unfamiliar Pseudomonas species, Pseudomonas stutzeri ► An in-depth molecular view of heavy metal resistance and metabolism of acyclic terpenes ► Pseudomonas and cystic fibrosis, a revisited overview of a dramatic host-bacteria interplay

Fields of interest
Bacteriology; Microbial Genetics and Genomics; Medical Microbiology

Target groups
Researchers working on pseudomonas, particularly those studying virulence, genomics, physiology, biotechnology, biotransformations, etc.; advanced students in biology, medicine and agronomy

Discount group
P

Müller Cells in the Healthy and Diseased Retina

Müller cells may be used in the future for novel therapeutic strategies to protect neurons against apoptosis (for example, somatic gene therapy), or to differentiate retinal neurons from Müller/stem cells. Meanwhile, a proper understanding of the gliotic responses of Müller cells in the diseased retina, and of their protective vs. detrimental effects, is essential for the development of efficient therapeutic strategies that use and stimulate the neuron-supportive/-protective and prevent the destructive mechanisms of gliosis.

Features
► Provides a comprehensive review of Müller glial cells in the retina ► Contains color images
► Will be of interest to neuroscientists as well as ophthalmologists

Contents

Fields of interest
Neurosciences; Ophthalmology; Neurobiology

Target groups
Neurobiologists, researchers in retinal degeneration, ophthalmologists

Discount group
P
**Modeling Phase Transitions in the Brain**

Some brain-state transitions, such as sleep cycling, anesthetic induction, epileptic seizure, are obvious and detected readily with a few EEG electrodes; others, such as the emergence of gamma rhythms during cognition, or the ultra-slow BOLD rhythms of relaxed free-association, are much more subtle. Modeling Phase Transitions in the Brain contains chapter contributions from leading researchers who apply state-space methods, network models, and biophysically-motivated continuum approaches to investigate a range of neuroscientifically relevant problems that include analysis of nonstationary EEG time-series; network topologies that limit epileptic spreading; saddle-node bifurcations for anesthesia, sleep-cycling, and the wake-sleep switch; prediction of dynamical and noise-induced spatiotemporal instabilities underlying BOLD, alpha-, and gamma-band Hopf oscillations, gap-junction-moderated Turing structures, and Hopf-Turing interactions leading to cortical waves.

**Features**
- Presents recent developments in EEG data analysis
- Places cortical modelling in historical context
- Provides an overview of the range of modern mass-action continuum approaches used to model cortical function

**From the contents**

**Fields of interest**
Neurosciences; Anesthesiology; Neurology

**Target groups**
Researchers, clinicians, physicians, neurologists

**Discount group**
P

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**Detection of Bacteria, Viruses, Parasites and Fungi**

When somebody mentions terrorism attack the attention is immediately on military type attacks such as bombs, kamikazes or similar kinds and nobody thinks about the possible existence of more sophisticated means such as the use of toxic gas or agents which may be transmitted by contaminated food, water and air and may interest a large number of people. This book intends to put the attention on this problem and to demonstrate how easy it is in particular to contaminate food. Four different sectors were analysed: bacteria, virus, parasites and pollutants and for each the possible agents and the facilities for creating diseases in many people through contaminated food are described. Also some species of common bacteria such as *Escherichia coli* or *Enterococci*, present in many foods, may produce toxins, causing diarrhoea in a large number of persons as happened in China in 1991 when 224,000 persons were affected by contaminated ice cream. Parasites can also be transmitted by uncooked fish and reptile meat.

**Fields of interest**
Medical Microbiology; Virology; Parasitology

**Target groups**
Public health authorities, policy makers, medical industry, military, government, students and scientists in molecular biology, medicine, epidemiology, biology, universities, research centers and industry

**Discount group**
P
**Parent-Child Interaction Therapy**

Over the past two decades, Parent-Child Interaction Therapy (PCIT) emerged as a leading-edge method for helping parents improve their children's disruptive and oppositional behavior. Today, PCIT has a robust evidence base; is used across the country in settings as diverse as hospitals, mental health centers, schools, and mobile clinics; and is rapidly gaining popularity in other parts of the world.

New features of the expanded second edition include: (1) Adaptations of PCIT for babies, toddlers, preteens, and siblings. (2) Applications for abuse survivors, children with developmental disabilities, ADHD, and severe aggression problems. (3) Uses of PCIT with separating or divorced parents. (4) Culturally relevant PCIT for ethnic minority and international families. (5) Teacher-child, staff-child, and home-based applications. (6) PCIT training guidelines. (7) A brand-new chapter summarizing current research supporting PCIT.

**Features**
- Summarizes the research regarding clinical innovations in the PCIT program as well as applications to specialized populations
- Retains much of the original information regarding the fundamentals of PCIT from the 1st edition, but also presents applications of PCIT to special populations
- Discusses how to apply these treatment techniques to toddlers, older children, and siblings

**Fields of interest**
Child and School Psychology; Clinical Psychology; Social Work

**Target groups**
Clinical child psychologists, school psychologists, and other mental health practitioners

**Discount group**
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**Insomnia and Anxiety**

Insomnia and Anxiety is the first clinician guidebook that considers the evaluation and management of insomnia and related sleep disturbances that occur conjointly with the common anxiety disorders. By exploring the ways that one condition may exacerbate the other, its authors present robust evidence of the limitations of viewing insomnia as secondary to GAD, agoraphobia, PTSD, and others in the anxiety spectrum. The book reviews cognitive and emotional factors common to anxiety and sleep disorders, and models a cognitive-behavioral approach to therapy in which improved sleep is a foundation for improved symptom management. Vital insights into all areas of these challenging cases include: (1) Diagnostic and assessment guidelines. (2) Cognitive-behavior therapy for insomnia. (3) Behavioral strategies for managing insomnia in the context of anxiety. (4) Cognitive strategies for managing comorbid anxiety and insomnia. (5) Sleep-related cognitive processes. (6) Pharmacological treatment considerations.

**From the contents**
- Anxiety and Insomnia: An Overview
- Cognitive Behavior Therapy Treatment Considerations
- Medication Considerations
- Anxiety Disorders and Comorbid Insomnia: Features, PSG findings, and treatment implications
- Sleep-related worry and helplessness: Fearful information processing
- Strategies for managing insomnia

**Features**
- Focuses on cognitive factors in insomnia, supplementing behavioral approaches with current cognitive findings and techniques for treating insomnia
- Focuses on treating the insomnia in the context of a highly prevalent comorbid condition

**Discount group**
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**Substance Abuse Recovery in College**

Using data from both conventional surveys and end-of-day daily Palm Pilot assessments as well as focus groups, the book examines community members’ experiences. In addition, the importance of a positive relationship between the recovery community and the school administration is emphasized. Topics covered include: (1) The growing need for recovery services at colleges. (2) How recovery communities support abstinence and relapse prevention. (3) Who are community members and their addiction and treatment histories. (4) Daily lives of young adults in a collegiate recovery community. (5) Challenges and opportunities in establishing recovery communities on campus. (6) Building abstinence support into an academic curriculum.

**Features**
- First volume to address the role of institutions in supporting adolescent and young adult recovery
- Combines qualitative and quantitative data to address the little-researched process of long-term recovery
- Presents daily diary analysis of the recovery process and the role of social support
- Presents stories of young adults in recovery across different university and college contexts

**Fields of interest**
Child and School Psychology; Higher Education; Social Work

**Target groups**
Developmental and clinical child psychologists; higher education leaders; social workers; related professionals in human development, family studies, student services, college healthcare, and community services

**Discount group**
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- $159.00
  ISBN 978-0-387-88638-1

Due February 2010

2010. Approx. 300 p. (Series in Anxiety and Related Disorders) Hardcover
- $129.00
  ISBN 978-1-4419-1433-0

Due February 2010

- $129.00

Due March 2010
Handbook of Individual Differences in Cognition
Attention, Memory, and Executive Control

As cognitive models of behavior continue to evolve, the mechanics of cognitive exceptionality, with its range of individual variations in abilities and performance, remains a challenge to psychology. Reaching beyond the standard view of exceptional cognition equaling superior intelligence, the Handbook of Individual Differences in Cognition examines the latest findings from psychobiology, cognitive psychology, and neuroscience, for a comprehensive state-of-the-art volume.

Breaking down cognition in terms of attentional mechanisms, working memory, and higher-order processing, contributors discuss general models of cognition and personality. Chapter authors build on this foundation as they revisit current theory in such areas as processing effort and general arousal and examine emerging methods in individual differences research, including new data on the role of brain plasticity in cognitive function.

Features
► Presents a unique approach to the subject of cognition, integrating different approaches to understand exceptionality in cognitive functions on the common basis of underlying biological mechanisms
► Offers a broad scope in contrast to already published volumes – the book contains a comprehensive survey that relates most of the major individual difference constructs to specific mechanisms of cognitive control

Fields of interest
Clinical Psychology; Cognitive Psychology; Neuropsychology

Target groups
Researchers, clinicians, and graduate students in psychology and cognitive sciences, including clinical psychology and neuropsychology; personality and social psychology; neurosciences; education

Discount group
P

Behavioral Science

Due March 2010


► $249.00
ISBN 978-1-4419-1209-1
Visions in Mathematics
GAFA 2000 Special Volume, Part I
pp. 1-453

“Visions in Mathematics - Towards 2000” was one of the most remarkable mathematical meetings in recent years. It was held in Tel Aviv from August 25th to September 3rd, 1999, and united some of the leading mathematicians worldwide. The goals of the conference were to discuss the importance, the methods, the past and the future of mathematics as we enter the 21st century and to consider the connection between mathematics and related areas.

The aims of the conference are reflected in the present set of survey articles, documenting the state of art and future prospects in many branches of mathematics of current interest.

This is the first part of a two-volume set that will serve any research mathematician or advanced student as an overview and guideline through the multifaceted body of mathematical research in the present and near future.

Fields of interest
Mathematics, general

Target groups
Any research mathematician and advanced students

Discount group
P

Visions in Mathematics
GAFA 2000 Special Volume, Part II
pp. 455-983

“Visions in Mathematics - Towards 2000” was one of the most remarkable mathematical meetings in recent years. It was held in Tel Aviv from August 25th to September 3rd, 1999, and united some of the leading mathematicians worldwide. The goals of the conference were to discuss the importance, the methods, the past and the future of mathematics as we enter the 21st century and to consider the connection between mathematics and related areas.

The aims of the conference are reflected in the present set of survey articles, documenting the state of art and future prospects in many branches of mathematics of current interest.

This is the second part of a two-volume set that will serve any research mathematician or advanced student as an overview and guideline through the multifaceted body of mathematical research in the present and near future.

Fields of interest
Mathematics, general

Target groups
Any research mathematician and advanced students

Discount group
P

A Glimpse at Hilbert Space Operators
Paul R. Halmos in Memoriam

The book is a commemorative volume honoring the mathematician Paul R. Halmos (1916-2006), who contributed passionately to mathematics in manifold ways, among them by basic research, by unparalleled mathematical exposition, by unselfish service to the mathematical community, and, not least, by the inspiration others found in his dedication to that community. Halmos made fundamental contributions in several areas of mathematics.

This volume emphasizes Halmos’s contributions to operator theory, his venue for most of his mathematical life. The core of the volume is a series of expository articles by prominent operator theorists providing an overview of how operator theory prospered during the Halmos era, in no small measure thanks to Halmos’s leadership and penetrating insights.

Features
- Emphasis on Halmos’s contributions to operator theory
- A series of expository articles by prominent operator theorists

From the contents

Fields of interest
Operator Theory

Target groups
Mathematicians with an interest in functional analysis, especially those who work in operator theory, operator algebras, and related areas

Discount group
P
V. Barbu

Nonlinear Differential Equations of Monotone Types in Banach Spaces

This book is concerned with basic results on Cauchy problems associated with nonlinear monotone operators in Banach spaces with applications to partial differential equations of evolutive type. This is a monograph about the most significant results obtained in this area in last decades but is also written as a graduate textbook on modern methods in partial differential equations with main emphasis on applications to fundamental mathematical models of mathematical physics, fluid dynamics and mechanics. This book is self-contained while the prerequisites in functional analysis are necessary to understand as it is being presented in a preliminary chapter. An up-to-date list of references and extended comments are included.

Contents

Fields of interest
Partial Differential Equations; Analysis

Target groups
Researchers, graduate students

Discount group
P

M. Berger, IHÉS, Bures-sur-Yvette, France

Geometry Revealed
A Jacob's Ladder to Modern Higher Geometry
Translated by: L. J. Senechal, Mount Holyoke College, South Hadley, MA, USA

Both classical geometry and modern differential geometry have been active subjects of research throughout the 20th century and lie at the heart of many recent advances in mathematics and physics. The underlying motivating concept for the present book is that it offers readers the elements of a modern geometric culture by means of a whole series of visually appealing unsolved (or recently solved) problems that require the creation of concepts and tools of varying abstraction. Starting with such natural, classical objects as lines, planes, circles, spheres, polygons, polyhedra, curves, surfaces, convex sets, etc., crucial ideas and above all abstract concepts needed for attaining the results are elucidated. These are conceptual notions, each built "above" the preceding and permitting an increase in abstraction, represented metaphorically by Jacob's ladder with its rungs: the 'ladder' in the Old Testament, that angels ascended and descended...

Features
► Newest work of best known mathematician Marcel Berger ► Offers readers elements of a modern geometric culture ► Demonstrate the unceasingly renewed spirit of geometry ► Visually rich and inviting ► Includes series of visually appealing unsolved (or recently solved) problems that require the creation of concepts and tools of varying abstraction

Fields of interest
Geometry; History of Mathematical Sciences; Convex and Discrete Geometry

Target groups
Researchers and graduate students in mathematics, physics, computer science and engineering

Discount group
P

M. Broué, Université Paris-Diderot, Paris, France

Introduction to Complex Reflection Groups and Their Braid Groups

Weyl groups are particular cases of complex reflection groups, i.e. finite subgroups of GLr(C) generated by (pseudo)reflections. These are groups whose polynomial ring of invariants is a polynomial algebra.

It has recently been discovered that complex reflection groups play a key role in the theory of finite reductive groups, giving rise as they do to braid groups and generalized Hecke algebras which govern the representation theory of finite reductive groups. It is now also broadly agreed upon that many of the known properties of Weyl groups can be generalized to complex reflection groups. The purpose of this work is to present a fairly extensive treatment of many basic properties of complex reflection groups (characterization, Steinberg theorem, Gutkin-Opdam matrices, Solomon theorem and applications, etc.) including the basic findings of Springer theory on eigenspaces. In doing so, we also introduce basic definitions and properties of the associated braid groups, as well as a quick introduction to Bessis' lifting of Springer theory to braid groups.

Contents

Fields of interest
Group Theory and Generalizations; Commutative Rings and Algebras; Associative Rings and Algebras

Target groups
Researchers and graduate students

Discount group
P
Modeling and Simulation in Scilab/Scicos with ScicosLab 4.4

Scilab is a free open-source software package for scientific computation. It includes hundreds of general purpose and specialized functions for numerical computation, organized in libraries called toolboxes, which cover such areas as simulation, optimization, systems and control, and signal processing. One important Scilab toolbox is Scicos. Scicos provides a block diagram graphical editor for the construction and simulation of dynamical systems. The objective of this book is to provide a tutorial for the use of Scilab/Scicos with a special emphasis on modeling and simulation tools. While it will provide useful information to experienced users it is designed to be accessible to beginning users from a variety of disciplines. Students and academic and industrial scientists and engineers should find it useful. The book is divided into two parts.

Features
► First book to focus on simulation and modeling
► First book to put a major emphasis on Scicos and discuss it in depth
► Over 100 illustrations
► Large number of carefully worked out examples and illustrations
► Does not presuppose familiarity with Scilab/Scicos
► Discusses some related aspects of simulation and modeling
► Provides guidance in the use of Scilab
► All code used in the book is available on the web

Fields of interest
Computational Mathematics and Numerical Analysis; Control, Robotics, Mechatronics; Dynamical Systems and Ergodic Theory

Target groups
Advanced undergraduate and graduate students, researchers from all fields who want to do simulations, engineers in R & D departments

Discount group
P

G. Della Sala, Universität Wien, Austria

Geometric properties of non-compact CR manifolds

The book deals with some questions related to the boundary problem in complex geometry and CR geometry. After a brief introduction summarizing the main results on the extension of CR functions, it is shown in chapters 2 and 3 that, employing the classical Harvey-Lawson theorem and under suitable conditions, the boundary problem for non-compact maximally complex real submanifolds of Cn, n=3 is solvable.

In chapter 4, the regularity of Levi flat hypersurfaces Cn (n=3) with assigned boundaries is studied in the graph case, in relation to the existence theorem proved by Dolbeault, Tomassini and Zaitsev.

Finally, in the last two chapters the structure properties of non-compact Levi-flat submanifolds of Cn are discussed; in particular, using the theory of the analytic multifunctions, a Liouville theorem for Levi flat submanifolds of Cn is proved.

Fields of interest
Differential Geometry

Target groups
Researcher

Discount group
P

The Versatile Soliton

If you have not already heard about solitons, you will sooner or later encounter them. The soliton, a solitary wave impulse preserving its shape and strikingly similar to a particle, is one of the most fascinating and beautiful phenomena in the physics of nonlinear waves. In this engaging book, the concept of the soliton is traced from the beginning of the last century to modern times, with recent applications in biology, oceanography, solid state physics, electronics, elementary particle physics, and cosmology. The main concepts and results of theoretical physics related to solitons can be explained without using much mathematics. Indeed, on the descriptive and historical level, only some knowledge of high school physics and mathematics is needed. At a higher level, for understanding the elementary theory of oscillations and waves, the reader can intuit much from the numerous illustrations and perhaps skip the formulas presented. But to appreciate the deep connections in this book between apparently different and diverse phenomena and ideas, the reader must be able to follow elementary mathematical computations. Still more advanced mathematics is required for the appendices.

From the contents

Fields of interest
Applications of Mathematics: Theoretical, Mathematical and Computational Physics; Elementary Particles, Quantum Field Theory

Target groups
General readers: math/physics, student, math/physics, researchers: target fields

Discount group
P

In chapter 4, the regularity of Levi flat hypersurfaces Cn (n=3) with assigned boundaries is studied in the graph case, in relation to the existence theorem proved by Dolbeault, Tomassini and Zaitsev. Finally, in the last two chapters the structure properties of non-compact Levi-flat submanifolds of Cn are discussed; in particular, using the theory of the analytic multifunctions, a Liouville theorem for Levi flat submanifolds of Cn is proved.

Fields of interest
Differential Geometry

Target groups
Researcher

Discount group
P

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If you have not already heard about solitons, you will sooner or later encounter them. The soliton, a solitary wave impulse preserving its shape and strikingly similar to a particle, is one of the most fascinating and beautiful phenomena in the physics of nonlinear waves. In this engaging book, the concept of the soliton is traced from the beginning of the last century to modern times, with recent applications in biology, oceanography, solid state physics, electronics, elementary particle physics, and cosmology. The main concepts and results of theoretical physics related to solitons can be explained without using much mathematics. Indeed, on the descriptive and historical level, only some knowledge of high school physics and mathematics is needed. At a higher level, for understanding the elementary theory of oscillations and waves, the reader can intuit much from the numerous illustrations and perhaps skip the formulas presented. But to appreciate the deep connections in this book between apparently different and diverse phenomena and ideas, the reader must be able to follow elementary mathematical computations. Still more advanced mathematics is required for the appendices.

From the contents

Fields of interest
Applications of Mathematics: Theoretical, Mathematical and Computational Physics; Elementary Particles, Quantum Field Theory

Target groups
General readers: math/physics, student, math/physics, researchers: target fields

Discount group
P
Introduction to Hyperfunctions and Their Integral Transforms
An Applied and Computational Approach

This textbook presents an introduction to generalized functions through Sato’s hyperfunctions, i.e., based on complex variables theory. Laplace transforms, Fourier transforms, Hilbert transforms, Mellin transforms and Hankel transforms of hyperfunctions and ordinary functions are then treated, and some applications mainly to integral equations are presented. The book is written from an applied and computational point of view and contains many concrete examples.

Contents

Fields of interest
Integral Transforms, Operational Calculus; Special Functions; Computational Science and Engineering

Target groups
Graduate students and researchers in applied mathematics, physics and engineering

Discount group
P

Higher Dimensional Algebraic Geometry

This book focuses on recent advances in the classification of complex projective varieties. It is divided into two parts. The first part gives a detailed account of recent results in the minimal model program. In particular, it contains a complete proof of the theorems on the existence of flips, on the existence of minimal models for varieties of log general type and of the finite generation of the canonical ring. The second part is an introduction to the theory of moduli spaces. It includes topics such as representing and moduli functors, Hilbert schemes, the boundedness, local closedness and separatedness of moduli spaces and the boundedness for varieties of general type. The book is aimed at advanced graduate students and researchers in algebraic geometry.

Contents
I Basics.- 1 Introduction.- 2 Preliminaries.- 3 Singularities.- 4 Recent advances in the MMP.- 5 The main result.- 6 Multiplier ideal sheaves.- 7 Finite generation of the restricted algebra.- 8 Rationality of the restricted algebra.- 9 Non-vanishing.- 10 Finiteness of log terminal models.- 11 Solutions and hints to some of the exercises.- III Compact moduli spaces.- 12 Moduli problems.- 13 Hilbert schemes.- 14 The construction of the moduli space.- 15 Families and moduli functors.

Fields of interest
Algebraic Geometry

Target groups
Advanced graduate students and researchers specializing in algebraic geometry

Discount group
P

Solving Ordinary Differential Equations I
Nonstiff Problems

This book deals with methods for solving nonstiff ordinary differential equations. The first chapter describes the historical development of the classical theory from Newton, Leibniz, Euler, and Hamilton to limit cycles and strange attractors. In a second chapter a modern treatment of Runge-Kutta and extrapolation methods is given. Also included are continuous methods for dense output, parallel Runge-Kutta methods, special methods for Hamiltonian systems, second order differential equations and delay equations. The third chapter begins with the classical theory of multistep methods, and concludes with the theory of general linear methods. Many applications from physics, chemistry, biology, and astronomy together with computer programs and numerical comparisons are presented. The book will be immensely useful to graduate students and researchers in numerical analysis and scientific computing, and to scientists in the fields mentioned above. “... This book is a valuable tool for students of mathematics and specialists concerned with numerical analysis, mathematical physics, mechanics, system engineering, and the application of computers for design and planning...” Optimization.

Fields of interest
Analysis; Numerical Analysis

Target groups
Researchers and graduate students of mathematics

Discount group
P
Introduction to Nonlinear and Global Optimization

Nonlinear Optimization is an intriguing area of study where mathematical theory, algorithms and applications converge to calculate the optimal values of continuous functions. Within this subject, Global Optimization aims at finding global optima for difficult problems in which many local optima might exist. This book provides a compelling introduction to global and non-linear optimization providing interdisciplinary readers with a strong background to continue their studies into these and other related fields. The book offers insight in relevant concepts such as "region of attraction" and "Branch-and-Bound" by elaborating small numerical examples and exercises for the reader to follow.

Features
► Can serve as both a graduate and undergraduate text in courses focusing on numerical optimization methods ► Focuses on problems relating to "region of attraction" and "branch and bound" ► Contains several instructional numerical examples and exercises providing the reader with working knowledge of the material

Contents

Fields of interest
Calculus of Variations and Optimal Control; Optimization; Operations Research, Management Science; Differential Geometry

Target groups
Researcher

Discount group
P

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.

Prof. Zhengyan Lin is a fellow of the Institute of Mathematical Statistics and currently a professor at Zhejiang University, Hangzhou, China. He is the prize winner of National Natural Science Award of China in 1997. Prof. Zhidong Bai is a fellow of TWAS and the Institute of Mathematical Statistics; he is a professor at the National University of Singapore and Northeast Normal University, Changchun, China.

Features
► First book available on commonly used probability inequalities ► Aggregation of most basic inequalities in this area with some proofs and references listed after ► All inequalities sorted to facilitate readers in finding what they need easily and quickly

From the contents

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

Target groups
Mathematicians, researchers and graduate students

Discount group
P

Homological Algebra of Semimodules and Semicontramodules

This is a monograph in semi-infinite homological algebra, concentrated mostly on the semi-infinite theory of associative algebraic structures, but including also some material on the semi-infinite homology and cohomology of Lie algebras and topological groups. The main objects of study are the double-sided derived functors SemiExt and CtrTor, and the phenomenon of comodule-contramodule correspondence, connecting them with the more conventional, one-sided Ext and Contr. Contramodules, introduced originally by Eilenberg and Moore in 1960's but almost forgotten for four decades, play a very prominent role in this book, with many versions of them introduced and discussed.

Features
► Intended as a definitive treatment of the subject of semi-infinite homology and cohomology of associative algebraic structures, this book contains also rich representation-theoretic and algebraic geometric examples and applications ► Exotic derived categories, contramodules, semialgebras, infinite-dimensional Lie algebras, algebraic Harish-Chandra pairs, and locally compact totally disconnected topological groups all interplay in the theories developed in this monograph

Fields of interest
Category Theory, Homological Algebra

Target groups
Graduates, postgraduates and researchers interested in semi-infinite cohomology, derived categories, homological algebra generally, corings and coalgebras, and many aspects of representation theory such as representations of infinite-dimensional Lie algebras, algebraic groups, quantum groups, or groups of points over one- or two-dimensional local fields, mathematical physicists
Option Prices as Probabilities
A New Look at Generalized Black-Scholes Formulae

The Black-Scholes formula plays a central role in Mathematical Finance; it gives the right price at which buyer and seller can agree with, in the geometric Brownian framework, when strike $K$ and maturity $T$ are given. This yields an explicit well-known formula, obtained by Black and Scholes in 1973. The present volume gives another representation of this formula in terms of Brownian last passages times, which, to our knowledge, has ever been made in this sense.

The volume is devoted to various extensions and discussions of features and quantities stemming from the last passages times representation in the Brownian case such as: past-future martingales, last passage times up to a finite horizon, pseudo-inverses of processes... They are developed in eight chapters, with complements, appendices and exercises.

Features
► To the best of our knowledge this book discusses in a unique way last passage times

Fields of interest
Probability Theory and Stochastic Processes; Quantitative Finance

Target groups
Researchers and graduate students in mathematical finance and probability theory

Discount group
P

Profinite Groups

The aim of this book is to serve both as an introduction to profinite groups and as a reference for specialists in some areas of the theory. The book is reasonably self-contained. Profinite groups are Galois groups. As such they are of interest in algebraic number theory. Much of recent research on abstract infinite groups is related to profinite groups because residually finite groups are naturally embedded in a profinite group. In addition to basic facts about general profinite groups, the book emphasizes free constructions (particularly free profinite groups and the structure of their subgroups). Homology and cohomology is described with a minimum of prerequisites.

Features
► This second edition contains three new appendices ► Contains a new conceptually simpler approach to the proof of some classical subgroup theorems ► Contains new results, improved proofs, typographical corrections, and an enlarged bibliography ► Contains comments and references about those previously open questions that have been solved after the first edition appeared

Contents

Fields of interest
Group Theory and Generalizations; Topological Groups, Lie Groups; Number Theory

Target groups
Group theorists, number theorists, algebraists, topologists

Discount group
P

Louis Couturat - Traité de Logique Algorithmique

The manuscript of the Traité de Logique algorithmique resulted from lectures Couturat gave at the University of Caen in 1898/99 on recent developments in symbolic logic, on the relations of logic and mathematics, and on the scope of the methods of mathematics. It is the only one of several manuscripts Couturat mentioned in his correspondence that meanwhile has been rediscovered. It is an outstanding document of the popularization and propagation of symbolic logic around 1900. It allows to better understand the difficult relations of algebraic logic and the so-called logistic program which surpasses the simple alternative of logic as an application of algebra vs. logic as the foundation of mathematics. The complicated interactions in the historical developments of these two currents become manifest in Couturat's hesitations and changing attitudes within his own intellectual biography. The publication of this manuscript helps to achieve a much more complete picture of the latter.

Features
► Only one of several manuscripts Couturat mentioned in his correspondence that meanwhile has been rediscovered

Fields of interest
History of Mathematical Sciences

Target groups
Philosophers, historians of logic, historians of universal languages, historians of science

Discount group
P
Pappus of Alexandria: Book 4 of the Collection
Edited With Translation and Commentary by Heike Sefrin-Weis

Although not so well known today, Book 4 of Pappus’ Collection is one of the most important and influential mathematical texts from antiquity. The mathematical vignettes form a portrait of mathematics during the Hellenistic “Golden Age”, illustrating central problems – for example, squaring the circle; doubling the cube; and trisecting an angle – varying solution strategies, and the different mathematical styles within ancient geometry.

This volume provides an English translation of Collection 4, in full, for the first time, including: a new edition of the Greek text, based on a fresh transcription from the main manuscript and offering an alternative to Hultsch’s standard edition, notes to facilitate understanding of the steps in the mathematical argument, a commentary highlighting aspects of the work that have so far been neglected, and supporting the reconstruction of a coherent plan and vision within the work, bibliographical references for further study.

Features
► Pappus’ work is the most important source on Greek mathematics from late antiquity, an invaluable source of information about the mathematics of the Hellenistic “Golden Age” ► This volume of the Collection give unique insights into Greek geometrical methodology

Fields of interest
History of Mathematical Sciences; Geometry

Target groups
Mathematicians, scholars, students and researchers with an interest in ancient Greek geometry

Discount group
P

Practical Bifurcation and Stability Analysis
R. Seydel

This book contains computational methods for numerically computing steady state and Hopf bifurcations. It is probably the first textbook to describe these types of numerical bifurcation techniques. The book requires only a basic knowledge of calculus, and uses detailed examples, problems, and figures. This will be appropriate as a textbook for graduate students.

In the third edition there is a chapter on applications and extensions of standard ODE approaches, for example, to delay equations, to differential-algebraic equations, and to reaction-diffusion problems. Additional material is inserted, including the topics deterministic risk, pattern formation, and control of chaos, and many further references.

Features
► Practical, hands-on approach ► Many examples and applications from science and engineering ► Numerical Approach ► Non-technical approach, only calculus required as background

Contents

Fields of interest
Dynamical Systems and Ergodic Theory; Appl. Mathematics/Computational Methods of Engineering; Mathematical Methods in Physics

Target groups
Graduate students, researchers

Discount group
P

Algorithms and Programming
Problems and Solutions
A. Shen, University of Marseille, LIF - Center of Mathematics and Informatics, Marseille, France

Algorithms and Programming is primarily intended for use in a first-year undergraduate course in programming. It is structured in a problem-solution format that requires the student to think through the programming process, thus developing an understanding of the underlying theory. The book is easily readable by a student taking a basic introductory course in computer science as well as useful for a graduate-level course in the analysis of algorithms and/or compiler construction.

Each self-contained chapter presents classical and well-known problems supplemented by clear and in-depth explanations. The material covered includes such topics as combinatorics, sorting, searching, queues, grammar and parsing, selected well-known algorithms and much more. Students and teachers will find this both an excellent text for learning programming and a source of problems for a variety of courses.

Features
► This second edition contains problems from new topics including suffix trees, games and strategies, and Huffman coding ► Good undergraduate introduction to programming course, especially one which is mathematically motivated ► May also be used as a textbook in a graduate course on the analysis of algorithms and/or compiler construction ► The “problem and solution” style makes the reader think through the programming process, making the book ideal for students in the classroom setting or for self study

Fields of interest
Algorithms; Programming Techniques; Computational Mathematics and Numerical Analysis

Target groups
Students, engineers, and other people who want to improve their computer skills

Discount group
P
Matrix Iterative Analysis

This is the softcover reprint of a very popular hardcover edition, a revised version of the first edition, originally published by Prentice Hall in 1962 and regarded as a classic in its field. In some places, new research results, e.g. results on weak regular splittings, have been incorporated in the revision, and in other places, new material has been added in the chapters, as well as at the end of chapters, in the form of additional up-to-date references and some recent theorems to give the reader some newer directions to pursue. The material in the new chapters is basically self-contained and more exercises have been provided for the readers. While the original version was more linear algebra oriented, the revision attempts to emphasize tools from other areas, such as approximation theory and conformal mapping theory, to access newer results of interest. The book should be of great interest to researchers and graduate students in the field of numerical analysis.

Features
► A monograph by a famous numerical analyst
► A classic in a revised and expanded edition

Fields of interest
Numerical Analysis; Linear and Multilinear Algebras, Matrix Theory

Target groups
Researchers and graduate students

Discount group
P

Principles of Computational Fluid Dynamics

This is a softcover reprint of a very popular hardcover edition, published in 1999. An account is given of the state of the art of numerical methods employed in computational fluid dynamics. Numerical principles are treated in detail, using elementary methods. Attention is given to difficulties arising from geometric complexity of the flow domain. Uniform accuracy for singular perturbation problems is studied, pointing the way to accurate computation of flows at high Reynolds number. Unified methods for compressible and incompressible flows are discussed, as well as the shallow-water equations. A basic introduction is given to efficient iterative solution methods. “This book is a well-written graduate level text in computational fluid dynamics with a good introduction to the two numerical methods, finite volume and finite difference. The material is well-organized, starting with simple one-dimensional equations and moving to numerical methods for two-dimensional and three-dimensional problems. There is a good mixture of theoretical and computational topics. This text should be of value to all researchers interested in computational fluid dynamics.” Mathematical Reviews

Features
► This book will become the standard reference for CFD for the next 20 years

Fields of interest
Numerical Analysis; Mathematical Methods in Physics; Numerical and Computational Physics

Target groups
Researchers, graduate students, engineers and physicists

Discount group
P

Collected Works/Gesammelte Werke

Volume I/Band I - Set Theory, Miscellanea/ Mengenlehre, Varia

Ernst Zermelo (1871-1953) is regarded as the founder of axiomatic set theory and best-known for the first formulation of the axiom of choice. However, his papers include also pioneering work in applied mathematics and mathematical physics. This edition of his collected papers will consist of two volumes. Besides providing a biography, the present Volume I covers set theory, the foundations of mathematics, and pure mathematics and is supplemented by selected items from his Nachlass and part of his translations of Homer’s Odyssey. Volume II will contain his work in the calculus of variations, applied mathematics, and physics. The papers are each presented in their original language together with an English translation, the versions facing each other on opposite pages. Each paper or coherent group of papers is preceded by an introductory note provided by an acknowledged expert in the field which comments on the historical background, motivations, accomplishments, and influence.

Fields of interest
Mathematical Logic and Foundations; Mathematical Logic and Formal Languages; Applications of Mathematics

Target groups
Mathematicians, logicians, computer scientists, historians of science

Discount group
P
Analysing Seasonal Health Data

Seasonal patterns have been found in a remarkable range of health conditions, including birth defects, respiratory infections and cardiovascular disease. Accurately estimating the size and timing of seasonal peaks in disease incidence is an aid to understanding the causes and possibly to developing interventions. With global warming increasing the intensity of seasonal weather patterns around the world, a review of the methods for estimating seasonal effects on health is timely. This is the first book on statistical methods for seasonal data written for a health audience. It describes methods for a range of outcomes (including continuous, count and binomial data) and demonstrates appropriate techniques for summarising and modelling these data. It has a practical focus and uses interesting examples to motivate and illustrate the methods. The statistical procedures and example data sets are available in an R package called ‘season’.

Features
- Description of methods for analysing seasonal data
- Statistical methods for finding and estimating seasonal patterns are explained
- With example code for the R statistical software
- An R package called ‘season’ can be downloaded via the R home page (http://www.r-project.org/), with example data sets

Contents

Fields of interest
Statistics for Life Sciences, Medicine, Health Sciences; Statistics, general; Environmental Health

Target groups
Researchers, practitioners

Discount group
P

Y. Dodge, Université de Neuchâtel, Switzerland

The Concise Encyclopedia of Statistics

The Concise Encyclopedia of Statistics presents the essential information about statistical tests, concepts, and analytical methods in language that is accessible to practitioners and students of the vast community using statistics in medicine, engineering, physical science, life science, social science, and business/economics. The reference is alphabetically arranged to provide quick access to the fundamental tools of statistical methodology and biographies of famous statisticians. The more than 500 entries include definitions, history, mathematical details, limitations, examples, references, and further readings. All entries include cross-references as well as the key citations. The back matter includes a timeline of statistical inventions. This reference will be an enduring resource for locating convenient overviews about this essential field of study.

Contents

Fields of interest
Statistics, general; Science, general; Engineering, general

Target groups
Reference work for scientists and practitioners

Discount group
P

T. Kneib, Carl von Ossietzky Universität, Oldenburg, Germany; G. Tutz, Ludwig-Maximilians-Universität München, Germany (Eds.)

Statistical Modelling and Regression Structures

Festschrift in Honour of Ludwig Fahrmeir

The contributions collected in this book have been written by well-known statisticians to acknowledge Ludwig Fahrmeir’s far-reaching impact on Statistics as a science, while celebrating his 65th birthday. The contributions cover broad areas of contemporary statistical model building, including semiparametric and geoadditive regression, Bayesian inference in complex regression models, time series modelling, statistical regularization, graphical models and stochastic volatility models.

Features
- State of the art of statistical modelling

Fields of interest
Statistics, general; Statistical Theory and Methods

Target groups
Scientists, researchers

Discount group
P
J. J. Perrett, Texas A&M University, College Station, TX, USA

A SAS/IML Companion for Linear Models

The book contains complete examples of SAS code for many of the computations relevant to a linear models course. However, the SAS code in these examples automates the analytic formulas. The code for high-level procedures like PROC MIXED is also included for side-by-side comparison. The book computes basic descriptive statistics, matrix algebra, matrix decomposition, likelihood maximization, non-linear optimization, etc. in a format conducive to a linear models or a special topics course. Also included in the book is an example of a basic analysis of a linear mixed model using restricted maximum likelihood estimation (REML). The example demonstrates tests for fixed effects, estimates of linear functions, and contrasts. The example starts by showing the steps for analyzing the data using PROC IML and then provides the analysis using PROC MIXED. This allows students to follow the process that lead to the output.

Contents

Fields of interest
Statistical Theory and Methods

Target groups
Grad students

Discount group
P

C. P. Robert, Université Paris Dauphine and CREST-INSEE, France; G. Casella, University of Florida, FL, USA

Introducing Monte Carlo Methods with R

This book does not require a preliminary exposure to the R programming language or to Monte Carlo methods, nor an advanced mathematical background. While many examples are set within a Bayesian framework, advanced expertise in Bayesian statistics is not required. The book covers basic random generation algorithms, Monte Carlo techniques for integration and optimization, convergence diagnoses, Markov chain Monte Carlo methods, including Metropolis-Hastings and Gibbs algorithms, and adaptive algorithms. All chapters include exercises and all R programs are available as an R package called mcsm. The book appeals to anyone with a practical interest in simulation methods but no previous exposure. It is meant to be useful for students and practitioners in areas such as statistics, signal processing, communications engineering, control theory, econometrics, finance and more. The programming parts are introduced progressively to be accessible to any reader.

Features
► The first book to present modern Monte Carlo and Markov Chain Monte Carlo (MCMC) methods from a practical perspective through a guided implementation in the R language
► All concepts are carefully described with the abstract theoretical background replaced with a corresponding R program that the reader can use and modify at will
► The whole entire series of examples from the book is accompanied by a free R package called mcsm that allows for immediate experimentation

Fields of interest
Statistics and Computing/Statistics Programs; Simulation and Modeling; Computational Mathematics and Numerical Analysis

Target groups
Researcher

Discount group
P
Building WPF and Silverlight Applications

Building WPF and Silverlight Applications: A Complete Guide gives developers learning about WPF and Silverlight 3 a deep grounding in the techniques required for using WPF and Silverlight in the professional environment. The book emphasizes the design patterns and n-tier architectural planning that is required to enable applications to stand up to real-world use and abuse by end users. This is critical information for the professional developer but it is very often omitted from training manuals and online articles. The book focuses on two of the most widely used, and widely purchased, technologies with the Microsoft programming environment: Windows Presentation Foundation (WPF) and Silverlight 3. By dealing with both technologies together the book covers both web and desktop programming and will have a very wide audience appeal.

Features
- Provides a unique insight into the process of creating fully-working, scalable, software for deployment to real-world end users
- All points are illustrated by a series of fully-worked case studies that show best practice and good architectural design at work
- Written by a team of highly influential and well respected authors that are deeply involved in the Microsoft development community

From the contents
1: Introduction. 2: WPF and Silverlight Design Patterns and Approaches. 3: Service Oriented Architecture and WCF. 4: Data Persistence using LINQ. 5: MVVM/Mediator Design Patterns.

Field of interest
Programming Techniques

Target groups
Intermediate to Advanced Web Designer

Discount group
P

Beginning Oracle SQL

Beginning Oracle SQL is a revision of Lex de Haan’s widely-respected, introductory book on SQL for Oracle developers and administrators. It carries with it the endorsement of a group of Oracle experts known as the Oak Table. It has been newly updated to cover the very latest Oracle features and syntax, and it has been renamed as a “Beginning” to reflect its key and ongoing position in Apress’ Oracle lineup.

Features
- What you’ll learn: Get started with JavaFX Script, including downloading the SDK and available tools
- Express user interfaces with declarative scripting
- Define classes, functions, and attributes
- Use JavaFX and associated tools so that an application developer and a graphics designer can effectively collaborate on an application

Contents

Field of interest
Programming Techniques

Target groups
Beginning Developer/Programmer

Discount group
P

Accelerated VB 2010

Accelerated VB 2010 is the fastest path to VB mastery. All VB programmers need to know and understand how VB really works but very few books address this. None cover it in the depth that this does. It teaches both core VB language concepts and how to use them in high-performance code. All programmers moving to VB from any language or moving up to VB 2010 from VB 2008 will find this book well worth buying, reading, and using as a reference.

Features
- Every VB programmer, experienced or new, needs to know what this book covers—more comprehensively, concisely, and deeply than any other
- The first book to provide detailed discussion of the new VB 2010 language features and how to exploit them for performance
- Valuable as both a rapid tutorial and a permanent reference

Contents

Field of interest
Programming Techniques

Target groups
Intermediate to Advanced Web Development

Discount group
P

Beginning Oracle SQL

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- Express user interfaces with declarative scripting
- Define classes, functions, and attributes
- Use JavaFX and associated tools so that an application developer and a graphics designer can effectively collaborate on an application

Contents

Field of interest
Programming Techniques

Target groups
Beginning Developer/Programmer

Discount group
P
D. Kaplan  
**iPhone Application Sketch Book**

This sketch book makes it easy to centralize and organize your ideas, featuring 1.5x sized iPhone templates that include common elements such as the status bar, signal strength, and battery icons. Professionally printed on high-quality paper, it has a total of 150 gridded templates to draft ideas and doodle designs while providing ample room to make notes, and document the app name and screen name. This book is a must-have and an invaluable tool for bringing the next great iPhone app idea to life!

**Field of interest**  
Programming Techniques

**Target groups**  
Beginning to Advanced Macintosh

**Discount group**  
C

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T. Kelsey  
**Social Networking Spaces**

Facebook and Twitter are extremely popular tools for both personal communications and business use, and LinkedIn is fast becoming a requirement for business networking. This book not only explains how to use each of these tools, it also shows you how to integrate them and stay safe and secure while using them. It also addresses how to use these tools to communicate internationally, and it covers additional types of social networking via blogs and games.

**Features**
- Informative about social media while retaining a light touch and friendly style
- Covers the major social networking applications of Facebook, Twitter, MySpace, and blogs
- Addresses the most common concerns about privacy and use by younger family members

**Contents**

**Field of interest**  
Programming Techniques

**Target groups**  
Beginning General Computing

**Discount group**  
C

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M. MacDonald  
**Beginning ASP.NET 4.0 in VB 2010**

Beginning ASP.NET 4.0 in VB 2010 follows in the footsteps of the highly successful .NET 2.0 and .NET 3.5 editions, teaching novice users how to use ASP.NET by gradually building their knowledge of the technology up in a pyramidal fashion chapter by chapter. Comprehensively revised for both ASP.NET 4.0 and the new Visual Basic 2010 language this book presents the easiest path to ASP.NET 4.0 mastery.

**Features**
- One of the first books introducing novices to this important new technology area, and written specifically in their coding language of preference
- Provides thorough coverage of all the issues that a novice programmer is likely to meet and presents them in a clean, logical manner where each chapter builds on the concepts introduced by those before it

**Contents**

**Field of interest**  
Programming Techniques

**Target groups**  
Beginning to Intermediate Web Development

**Discount group**  
P

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**Apress**  
**Computer Science**

Due January 2010

Distribution rights for Hongkong, Taiwan, Republic of Korea, Singapore, Malaysia, Thailand, Indonesia, Philippines, Vietnam, Brunei, Myanmar: Transquest Publishers Pte Ltd. For Israel: Com.Books Ltd. For Jordan, Irak, Oman, Qatar, Palestine: Jordan Book Center

2010. Approx. 150 p. Softcover  
► $14.99  

**Apress**  
**Computer Science**

Due January 2010

Distribution rights for Hongkong, Taiwan, Republic of Korea, Singapore, Malaysia, Thailand, Indonesia, Philippines, Vietnam, Brunei, Myanmar: Transquest Publishers Pte Ltd. For Israel: Com.Books Ltd. For Jordan, Irak, Oman, Qatar, Palestine: Jordan Book Center

2010. Approx. 400 p. Softcover  
► approx. $29.99  

**Apress**  
**Computer Science**

Due January 2010

Distribution rights for Hongkong, Taiwan, Republic of Korea, Singapore, Malaysia, Thailand, Indonesia, Philippines, Vietnam, Brunei, Myanmar: Transquest Publishers Pte Ltd. For Israel: Com.Books Ltd. For Jordan, Irak, Oman, Qatar, Palestine: Jordan Book Center

2010. Approx. 955 p. Softcover  
► approx. $49.99  
ISBN 978-1-4302-2611-6
**Beginning ASP.NET 4.0 in C# 2010**

M. MacDonald

Beginning ASP.NET 4.0 in C# 2010 follows in the footsteps of the highly successful .NET 2.0 and .NET 3.5 editions, teaching novice users how to use ASP.NET by gradually building their knowledge of the technology up in a pyramidal fashion chapter by chapter. Comprehensively revised for both ASP.NET 4.0 and the new Visual C# 2010 language this book presents the easiest path to ASP.NET 4.0 mastery.

**Features**
- One of the first books introducing novices to this important new technology area, and written specifically in their coding language of preference
- Provides thorough coverage of all the issues that a novice programmer is likely to meet and presents them in a clean, logical manner where each chapter builds on the concepts introduced by those before it

**Contents**

**Field of interest**
Programming Techniques

**Target groups**
Beginning to Intermediate .NET

**Discount group**
C

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**WPF Projects**

S. Mukhtar

**WPF Projects** provides intermediate level .NET developers with a series of fully working WPF projects to help them master WPF’s steep learning curve and jump the gap between an understanding of the technology’s syntax in theory and being able to build fully-working applications in practice. The book provides eight separate projects, each of which demonstrates how to build a popular type of application from scratch, ranging from the simple to the complex.

**Features**
- Builds a series of fully-working applications that gives readers a complete working architecture upon which they can build their own projects
- Emphasizes the areas of the WPF framework that readers need to know most and tailors the examples to facilitate their learning
- Written by an experienced author who has worked widely as a software engineer implementing these programmatic techniques for clients across the USA

**Contents**
1: Introduction to WPF. 2: Project #1: Let's do some calculations - The Calculator application. 3: Project #2: Building Blocks of a Board Game - The Bubble Popper Game. 4: Project #3: Backup and Restore Application - The EzeBackup application. 5: Project #4: Let's Plot Scientific Layered Graphs - EzePlotter application. 6: Project #5: Understanding computer-aided design (CAD) - EzeCAD application. 7: Project #6: Mapping and GIS - EzeMap application. 8: Project #7: Writing a Dashboard Reporting Application - EzeDashBoard application. 9: Project #8: Do you have something to Auction - EzeBay Client application.

**Field of interest**
Programming Techniques

**Target groups**
Beginning to Intermediate .NET

**Discount group**
C

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**Practical Clojure**

L. van der Hart

**Practical Clojure** is a comprehensive guide to Clojure, meant to be read either chapter-by-chapter or used as a reference by more experienced Clojure developers. Clojure is a new functional programming language that has a very rapidly growing user base. For example, Clojure’s primary mailing list has had more traffic in 2009 than those of Scala and Groovy (its closest relatives) put together, despite the fact that they have been in existence since 2003. Also, although Clojure 1.0 was only released in early May of 2009, it is already being used in several production projects. Currently, Clojure users depend on mailing lists, documentation, and a tutorial book to help them learn the details of the language. The Definitive Guide to Clojure will provide clear, up-to-date explanations and examples for developers interested in learning Clojure and applying it to their own projects.

**Features**
- One of the first Clojure books on the market, and the first to cover the language in depth
- An author who is an experienced Clojure developer and a very active member of the Clojure community
- Appeals to both functional language enthusiasts and object-oriented developers

**Contents**

**Field of interest**
Programming Techniques

**Target groups**
Beginning to Intermediate Developer/Programmer

**Discount group**
C
Developing Better Multi-Database Mining Applications

In this book, we discuss various issues regarding the systematic and efficient development of multi-database mining applications. It explains how systematically one could prepare data warehouses at different branches. As appropriate multi-database mining technique is essential to develop better applications. Also, the efficiency of a multi-database mining application could be improved by processing more patterns in the application. A faster algorithm could also play an important role in developing a better application. Thus the efficiency of a multi-database mining application could be enhanced by choosing an appropriate multi-database mining model, an appropriate pattern synthesizing technique, a better pattern representation technique, and an efficient algorithm for solving the problem. This book illustrates each of these issues either in the context of a specific problem, or in general.

Contents
Introduction.- An extended model of local pattern analysis.- Mining multiple large databases.- Mining patterns of select items in multiple databases.- Enhancing quality of knowledge synthesized from multi-database mining.- Efficient clustering of databases induced by local patterns.- A Framework for developing effective multi-database mining applications.

Fields of interest
Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet)

Target groups
Researchers, practitioners

Discount group
P

Robust and Online Large-Scale Optimization
Models and Techniques for Transportation Systems

Examples of scheduled transportation include bus, ferry, airline, and railway networks, with the latter being a prime application domain that provides a fair amount of the most complex and largest instances of such optimization problems. Scheduled transport optimization deals with planning and scheduling problems over several time horizons, and substantial progress has been made for strategic planning and scheduling problems in all transportation domains.

This state-of-the-art survey presents the outcome of an open call for contributions asking for either research papers or state-of-the-art survey articles. We received 24 submissions that underwent two rounds of the standard peer-review process, out of which 18 were finally accepted for publication. The volume is organized in four parts: Robustness and Recoverability; Robust Timetabling and Route Planning; Robust Planning Under Scarce Resources, and Online Planning: Delay and Disruption Management.

Fields of interest
Performance and Reliability; System Performance and Evaluation; Special Purpose and Application-Based Systems

Target groups
Researchers and professionals

Discount group
P

Researching Learning in Virtual Worlds

Most of the chapters in this book are extended papers from Research Learning in Virtual Environments (reLIVE08), an international conference held by the UK Open University in Milton Keynes in November 2008. Authors of the best papers and presentations from the conferences were invited to contribute to Research Learning in Virtual Worlds, the first book to specifically address research methods and related issues for education in virtual worlds.

The book covers a range of research undertaken in virtual worlds. It opens with an accessible introduction both to the book and the subject area, making it an ideal springboard for those who are new to research in this area. The subsequent ten chapters present work covering a range of research methodologies across a broad discipline base, providing essential reading for advanced undergraduate or postgraduate researchers working in education in virtual worlds, and engaging background material for researchers in similar and related disciplines.

From the contents

Fields of interest
Computers and Education

Target groups
Researchers, lecturers, graduates, undergraduate, practitioners (anyone working in an industry related to teaching, learning, training or supporting those practices in virtual worlds), AERA.- BERA.- EERA.- Linden Lab.- Serious Games Institute.- WERA

Discount group
P
Cognitive Reasoning

A Formal Approach

This book describes the theory and methodology of a new, scientifically well-founded general approach, and its realization in the form of intelligent systems applicable in disciplines ranging from social sciences, such as cognitive science and sociology, through natural sciences, such as life sciences and chemistry, to applied sciences, such as medicine, education, and engineering.

The main subject developed in the book is cognitive reasoning investigated at three levels of abstraction: conceptual, formal, and realizational. The authors offer a model of a cognizing agent for the conceptual theory of cognitive reasoning, and they also present a logically well-founded formal cognitive reasoning framework to handle the various plausible reasoning methods. They conclude with an object model of a cognitive engine.

Features
► Describes the theory, methodology and algorithmization of a new approach to problem solving and its realization in the form of intelligent systems.

Contents

Fields of interest
Artificial Intelligence (incl. Robotics); Theory of Computation; Mathematical Logic and Foundations.

Target groups
Scientists, researchers, graduate students.

Discount group
P.

Emergent Web Intelligence: Advanced Semantic Technologies

The Web intelligence discipline attempts to deal with this challenge by exploits information technologies and artificial intelligence approaches to design next generation of web-empowered systems and services. The "Emergent Web Intelligence: Advanced Semantic Technologies" book provides valuable references and cutting-edge technologies for: undergraduate and postgraduate students who are studying Web Intelligence and Semantic Web courses, developers who need to design innovative approaches by applying different emergent semantic techniques to real-world problems, researchers who seek to understand the state of the art and foresee future research strategies in Web Intelligence and Semantic Web.

The book is organized in self-contained chapters to provide greatest reading flexibility.

Features
► Explains basic concepts in simple language with plenty of diagrams, illustrations and examples, to help readers new to this field to capture clear concept about the subject matter ► Plenty of worked out examples in each chapter, helpful for both lecturers and students ► Simulation programs will be provided for practical and better understanding so that both students and lecturers will find them very useful.

Fields of interest
Information Systems Applications (incl.Internet); Information Storage and Retrieval; Multimedia Information Systems.

Target groups
Graduate, undergraduate students, lecturers, researchers, practitioners.

Discount group
P.

Domain Driven Data Mining

This book offers state-of-the-art research and development outcomes on methodologies, techniques, approaches and successful applications in domain driven, actionable knowledge discovery. It enhances the actionability and wider deployment of existing data-centered data mining through a combination of domain and business oriented factors, constraints and intelligence. The text also details a paradigm shift from “data-centered pattern mining” to “domain driven actionable knowledge discovery” for next-generation KDD research and applications.

Features
► Bridges the gap between business expectations and research output ► Includes techniques, methodologies and case studies in real-life enterprise dm ► Addresses new areas such as blog mining.

Fields of interest
Data Mining and Knowledge Discovery; Information Systems; Information Systems Applications (incl.Internet).

Target groups
Data mining researchers and practitioners.

Discount group
P.
Emergent Web Intelligence: Advanced Information Retrieval

Multimedia and XML-based data are produced regularly and in increasing ways in our daily digital activities, and their retrieval must be explored and studied in this emergent web-based era. ‘Emergent Web Intelligence: Advanced information retrieval’ provides a review of the related cutting-edge technologies and insights.

It is valuable companion and comprehensive reference for undergraduate and postgraduate students who are taking a course in Web intelligence and need to study current concepts of retrieval of multimedia and XML-based data, developers who need to implement advanced search engines and make benefit of web intelligence technologies, researchers who desire to understand exiting approaches, pin down their limits, and identify several future directions.

The book is organized in self-contained chapters to provide greatest reading flexibility.

Features
- Basic concepts will be explained in simple language with plenty of diagrams, illustrations and examples
- Helps readers new to this field understand concepts at play regarding the subject matter
- There will be plenty of worked out examples in each chapter, which will be helpful for both lecturers and students to use this book as a text
- Simulation programs will be provided for practical and better understanding

Fields of interest
Information Storage and Retrieval; Information Systems Applications (incl. Internet); Multimedia Information Systems

Target groups
Graduate and undergraduate students, lecturers, researchers, practitioners

Discount group
P

3-Dimensional VLSI

A 2.5-Dimensional Integration Scheme

“3-Dimensional VLSI: A 2.5-Dimensional Integration Scheme” elaborates the concept and importance of 3-Dimensional (3-D) VLSI. The authors have developed a new 3-D IC integration paradigm, so-called 2.5-D integration, to address many problems that are hard to resolve using traditional non-monolithic integration schemes. The book also introduces major 3-D VLSI design issues that need to be solved by IC designers and Electronic Design Automation (EDA) developers. By treating 3-D integration in an integrated framework, the book provides important insights for semiconductor process engineers, IC designers, and those working in EDA R&D.

Features
- A new integration scheme considering both performance and yield
- Novel cost model to compare difference integration styles
- Design driven approach to prove the performance advantages of 2.5/3-D IC’s
- Full EDA tool support for 3-D layout creation

Contents
Background of 2.5-D VLSI Integration.- Cost Modeling of VLSI Integration Strategies.- Custom Design Case Studies of 2.5-D Integration.- ASIC Design Case Studies with 2.5-D Layout Design Automation Tools.- Looking into The Future.

Fields of interest
Circuits and Systems

Target groups
Semiconductor process engineers, IC designers, and those working in EDA R and D

Discount group
P
**Stochastic Coalgebraic Logic**

Stochastic systems provide important tools for systems modeling, and recent work shows that categorical reasoning may lead to new insights, previously not available in a purely probabilistic setting.

This book combines coalgebra reasoning, stochastic systems and logics. It provides an insight into the principles of coalgebraic logic from a categorical point of view, and applies these systems to interpretations of stochastic coalgebraic logics, which include well-known modal logics and continuous time branching logics. The author introduces stochastic systems together with their probabilistic and categorical foundations and gives a comprehensive discussion of the Giry monad as the underlying categorical construction, presenting many new, hitherto unpublished results. He discusses modal logics, introduces their probabilistic interpretations, and then proceeds to an analysis of Kripke models for coalgebraic logics.

**Features**
- Provides an insight into the principles of coalgebraic logic from a categorical point of view
- Applies these systems to interpretations of stochastic coalgebraic logics

**Contents**

**Fields of interest**
Mathematical Logic and Formal Languages; Probability Theory and Stochastic Processes; Artificial Intelligence (incl. Robotics)

**Target groups**
Researchers and professionals

**Discount group**
P

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**Programming Languages**

This self-contained textbook assumes that the reader has some familiarity with one programming language, and adopts a simple yet rigorous approach.

The author explains the main programming paradigms (imperative, object-oriented, functional, and logic), and makes clear separation between the design, implementation and pragmatic aspects of programming languages.

As well as an excellent guide for undergraduates the content will also be useful for software practitioners who want to consolidate and update their knowledge of programming languages.

**Features**
- Self-contained and straightforward approach that requires some familiarity with only one programming language (unlike many competitor books)
- Clearly separates between the design, implementation and pragmatic aspects of programming languages
- Explicit treatment of the main programming paradigms

**Contents**

**Fields of interest**
Computer Science, general; Programming Languages, Compilers, Interpreters

**Target groups**
Researchers and professionals

**Discount group**
P

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**Agent-Based Service-Oriented Computing**

Service-Oriented Computing (SOC) allows software development time to be shortened by the composition of existing services across the Internet. Further exploitation of this revolutionary trend is feasible through automation, thanks to the use of software agents and techniques from distributed artificial intelligence.

This book provides an overview of the related technologies and insight into state-of-the art research results in the field. The topics discussed cover the various stages in the life cycle of service-oriented software development using agent technologies to automate the development process and to manage services in a dynamic environment. The book presents both academic research results and the latest developments from industry.

Researchers from academia and industry, as well as postgraduates, will find this cutting-edge volume indispensable in order to gain understanding of the issues associated with agent-based service-oriented computing along with recent, and likely future technology trends.

**Features**
- Provides an overview of the related technologies and insight into state-of-the art research results in the field – both academic and industry developments
- Offers insights into the potential future directions of the topic
- Bridges existing technological gaps between agents and SOC
- Presents the various stages in the life cycle of service-oriented software development

**From the contents**
Introduction. - Service Advertisement and Discovery. - Multi-Agent Coordination for Service Composition. - Flexible Workflow Management in Service Oriented Environments..

**Fields of interest**
Models and Principles; Software Engineering; Management of Computing and Information Systems

**Target groups**
Researchers, postgraduate students

**Discount group**
P
Algorithmic discrete mathematics plays a key role in the development of information and communication technologies, and methods that arise in computer science, mathematics and operations research – in particular in algorithms, computational complexity, distributed computing and optimization – are vital to modern services such as mobile telephony, online banking and VoIP. This book examines communication networking from a mathematical viewpoint. The contributing authors took part in the European COST action 293 – a four-year program of multidisciplinary research on this subject. In this book they offer introductory overviews and state-of-the-art assessments of current and future research in the fields of broadband, optical, wireless and ad hoc networks. Particular topics of interest are design, optimization, robustness and energy consumption.

**Features**
- The most comprehensive book on communication networking from a mathematical viewpoint

**From the contents**

**Fields of interest**
Algorithm Analysis and Problem Complexity; Computer Communication Networks; Communications Engineering, Networks

**Discount group**
P

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**Digital Preservation for Heritages**

**Technologies and Applications**

Digital Preservation for Heritages: Technologies and Applications provides a comprehensive and up-to-date coverage of digital technologies in the area of cultural heritage preservation, including digitalization, research aiding, conservation aiding, digital exhibition, and digital utilization. Processes, technical frameworks, key technologies, as well as typical systems and applications are discussed in the book. It is intended for researchers and students in the fields of computer science and technology, museology, and archaeology.

**Features**
- Provides successful examples of digital conservation and utilization, such as Dunhuang Mogao Caves, Jinsha site, Liangzhu site, and Hemudu site
- Supplies almost 200 illustrations

**Contents**

**Fields of interest**
Computer Appl. in Arts and Humanities; Cultural Heritage

**Discount group**
P

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**Publication details**

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2010. Approx. 220 p. 121 illus. (Advanced Topics in Science and Technology in China) Hardcover
- $139.00
ISBN 978-3-642-04861-6
Collaborative Software Engineering

The editors of this book have assembled an impressive selection of authors, who have contributed to an authoritative body of work tackling a wide range of issues in the field of collaborative software engineering. The resulting volume is divided into four parts, preceded by a general editorial chapter providing a more detailed review of the domain of collaborative software engineering. Part 1 is on Characterizing Collaborative Software Engineering, Part 2 examines various Tools and Techniques, Part 3 addresses organizational issues, and finally Part 4 contains four examples of Emerging Issues in Collaborative Software Engineering. As such, this book delivers a comprehensive state-of-the-art overview and empirical results for researchers in academia and industry in areas like software process management, empirical software engineering, and global software development.

Fields of interest
Software Engineering; User Interfaces and Human Computer Interaction; Management of Computing and Information Systems

Target groups
Researchers and professionals

Discount group
P

Machine-based Intelligent Face Recognition

Machine-based Intelligent Face Recognition discusses the general engineering method of imitating intelligent human brains for video-based face recognition in a fundamental way, which is completely unsupervised, automatic, self-learning, self-updated and robust. It also overviews state-of-the-art research on cognitive-based biometrics and machine-based biometrics, and especially the advances in face recognition. This book is intended for scientists, researchers, engineers, and students in the field of computer vision, machine intelligence, and particularly of face recognition.

Features
► Discusses the general engineering methods for imitating intelligent human brains for video-based face recognition that is completely unsupervised, self-adaptive and robust ► All cues are combined together

Contents

Fields of interest
Biometrics; Computer Imaging, Vision, Pattern Recognition and Graphics; Artificial Intelligence (incl. Robotics)

Target groups
Institutions and researchers in computer vision and machine intelligence and learning

Discount group
P

Introduction to Databases

From Biological to Spatio-Temporal

This textbook reveals the workings of numerous database systems, enabling readers to develop complex database applications. Students will gain hands-on experience by following the exercises. The theory is complemented by detailed examination of specific applications from a broad range of areas. The text assumes only basic discrete mathematics, linear algebra, and programming knowledge. Features: Provides descriptions of 11 types of databases, and 2 database systems; Concludes each chapter with bibliographic notes and exercises; Examines database design, including issues of database interoperability, data integration, interpolation and approximation, and prediction and data mining; Presents course aids at a supporting website; Covers topics on indexing methods, data visualization, the safety of queries, general evaluation algorithms, the efficient implementation of evaluation algorithms, and the complexity of the evaluation of different types of queries; Structured to allow for flexible course design.

Features
► Provides a comprehensive coverage of the field of databases

From the contents

Fields of interest
Database Management; Artificial Intelligence (incl. Robotics); Programming Techniques

Target groups
Advanced undergraduates, graduate students, practitioners

Discount group
P
Introduction to Brain-Computer Interfacing Using BCI2000

This practical guide to successful Brain-Computer Interface (BCI) experiments, uses the general-purpose software platform BCI2000. It provides comprehensive introductory and intermediate concepts of all relevant aspects pertaining to common BCI experiments. Opening with a general introduction to the principles of BCI operation, brain signal acquisition using different types of sensors, BCI signal processing (including common feature extraction and feature translation methods), and device output, this general introduction to BCI research is followed by an introduction to the BCI2000 software platform, including a step-by-step tour and step-by-step tutorials for using BCI2000 with sensorimotor rhythms and P300 evoked potentials. Advanced concepts are discussed and a programming reference and exercises included. There is a section for frequently asked questions and technical references.

Features
- Only very few books have been published on Brain-Computer Interfacing, they are of mostly academic nature whereas this book is introductory, and contains tutorials and BCI2000 software

From the contents

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

Target groups
Researchers and professionals

Discount group
P
Transactions on Computational Science VI

Editors-in-chief: M. Gavrilova, University of Calgary, Canada; C. K. Tan, Exascale Ltd., Birmingham, UK

This volume of the LNCS journal Transactions on Computational Science addresses researchers and practitioners in areas ranging from aerospace to biochemistry, from electronics to geosciences, from mathematics to software architecture, presenting verifiable computational methods, findings and solutions and enabling industrial users to apply techniques of leading-edge, large-scale, high performance computational methods.

The sixth volume of the Transactions on Computational Science journal contains the thoroughly refereed best papers selected from the International Conference on Computational Science and Its Applications, ICCSA 2008. All 21 papers included in the issue have been significantly revised and extended following the event. The journal has been divided into two parts. The 11 papers in Part 1 are devoted to the theme of information systems and communications and the 10 papers in Part 2 focus on geographical analysis and geometric modeling.

Fields of interest
Information Storage and Retrieval; Geographical Information Systems/Cartography; Data Mining and Knowledge Discovery

Target groups
Researchers and professionals

Discount group
P

Secure Integrated Circuits and Systems

On any advanced integrated circuit or “system-on-chip” there is a need for security. In many applications the actual implementation has become the weakest link in security rather than the algorithms or protocols. The purpose of the book is to give the integrated circuits and systems designer an insight into the basics of security and cryptography from the implementation point of view. As a designer of integrated circuits and systems it is important to know both the state-of-the-art attacks as well as the countermeasures. Optimizing for security is different from optimizations for speed, area, or power consumption. It is therefore difficult to attain the delicate balance between the extra cost of security measures and the added benefits.

Features
► Fills a gap between the crypto community and the designers of integrated circuits and systems
► Gives insight into the basics of security and cryptography from the implementation viewpoint
► Addresses side-channel attacks that can occur due to weak implementation

From the contents

Fields of interest
Special Purpose and Application-Based Systems; Circuits and Systems; Systems and Data Security

Target groups
Integrated circuit or embedded systems designers

Discount group
P

Introduction to the Mathematics for Computer Graphics

John Vince explains a wide range of mathematical techniques and problem-solving strategies associated with computer games, computer animation, virtual reality, CAD, and other areas of computer graphics. Covering all the mathematical techniques required to resolve geometric problems and design computer programs for computer graphic applications, each chapter explores a specific mathematical topic prior to moving forward into the more advanced areas of matrix transforms, 3D curves and surface patches. Problem-solving techniques using vector analysis and geometric algebra are also discussed. All the key areas are covered including: Numbers, Algebra, Trigonometry, Coordinate geometry, Transforms, Vectors, Curves and surfaces, Barycentric coordinates, Analytic geometry. Plus – and unusually in a student textbook – a chapter on geometric algebra is included.

Contents

Fields of interest
Computer Graphics

Target groups
Undergraduates, graduates

Discount group
P
Hierarchical Voronoi Graphs
Spatial Representation and Reasoning for Mobile Robots

Voronoi graphs and their hierarchical extensions have become a widely used tool for deriving abstract spatial representations from environmental data. They are currently being studied and applied in several subfields of computer science such as AI and robotics, computational geometry, and geoinformatics. This book investigates the application of hierarchical Voronoi graphs for the internal spatial memory of a mobile robot, focusing on the robot mapping problem of deriving the correct representation from uncertain data. The author develops and illustrates several fundamental techniques for constructing hierarchical Voronoi graph representations, employing a broad set of methods ranging from spatial abstraction approaches to graph matching, search, and qualitative spatial reasoning. It is further shown how the developed tools can be combined to form an overall robot mapping system.

Features
- The author focuses on a particular kind of topological representation of space, the hierarchical annotated generalized Voronoi graph

Contents

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

Target groups
Researchers and professionals

Discount group
P

Coverage Control in Sensor Networks

This easy-to-read text focuses on challenges in coverage control in sensor networks, examines fundamental coverage problems, and presents the most recent advances and techniques in the field. Features: provides an introduction to sensors, sensor nodes, sensor networks, and sensor coverage models; supplies an informal definition and taxonomy for network-wide coverage control; explores the node placement optimization problem for coverage configuration before network deployment; investigates the coverage lifetime maximization problem by controlling coverage characteristics in a randomly deployed network; discusses the critical sensor-density problem for coverage configuration before network deployment; examines the sensor-activity scheduling problem of controlling network coverage characteristics in a randomly deployed network; introduces the node movement strategy problem for sensor networks containing mobile nodes; presents the challenges of building intrusion barriers and finding penetration paths.

Features
- This practical, concise, yet comprehensive text is the first to inspect the diverse coverage problems in distributed/wireless sensor networks

Contents

Fields of interest
Computer Communication Networks

Target groups
Researchers, graduate students

Discount group
P

Semantic Methods for Execution-level Business Process Modeling
Modeling Support Through Process Verification and Service Composition

Ingo Weber develops new approaches for the rapid development and flexible adaption of business processes, which are often the main requirements in today's IT support for enterprises. Key issues covered by his work are the automatic composition of processes out of predefined components and the verification of specific process properties. His research aims at quickly creating executable process models, which orchestrate the usage of Web services. He investigates how process modelers can be supported by semantic technologies, e.g., by semantically enriched process models or annotated Web services, and puts special emphasis on expressiveness and scalability.

Fields of interest
Information Systems Applications (incl.Internet); Information Systems; Artificial Intelligence (incl. Robotics)

Target groups
Researchers and professionals

Discount group
P
Quantum Private Communication

Quantum Private Communication covers the fundamentals of the areas of secure communication, quantum cryptography, quantum communication, and their physical implementation with applications. The book appears in a timely manner for an emerging field at the crossroad of classic private communication and quantum physics. Graduate students and scientists alike in communication engineering, computer science, electronic engineering, physics and mathematics will benefit from the book.

Features
- Comprehensive and systematical framework for QPC
- Combination of QPC and classic private communication
- Combination of science and engineering

Contents

Fields of interest
Computer Science, general; Communications Engineering, Networks; Electrical Engineering

Target groups
Researchers and graduate students in computer science, communication engineering, electronic engineering, physics and mathematics

Discount group
P

Computer Science

Due March 2010

Distribution rights in China: Higher Education Press

Jointly published with Higher Education Press

2010. Approx. 380 p. 95 illus. Hardcover

$129.00
ISBN 978-3-642-03295-0
Theoretical Chemical Engineering
Modeling & Simulation

This survey presents the theoretical methods of chemical engineering for modeling and simulation of industrial processes. On this base it is possible to formulate correct experimental conditions and to understand rightly the experimental results. The book uses the mechanics of continuous media approach for modeling of the simple processes as hydrodynamic processes, mass and heat transfer processes. The theory of the scalar, vector and tensor fields permit to create the basic equations and boundary conditions. The problems of rheology, turbulence, turbulent diffusion and turbulent mass transfer are examined too. The book incorporates a lot of fundamental knowledge, but it is assumed that the readers are familiar with the mathematics at engineering level and that they thought some special topics in usual university courses. It includes examples at the end of all chapters using the author’s investigations. Therefore, it is highly valuable for scientists as well as graduate and PhD students.

Features
► Presents the theoretical methods of chemical engineering for modeling and simulation of industrial processes ► Enables the reader to formulate correct experimental conditions and to understand rightly the experimental results ► Incorporates a lot of fundamental knowledge

Contents

Fields of interest
Industrial Chemistry/Chemical Engineering; Engineering Thermodynamics, Heat and Mass Transfer

Target groups
Scientists as well as graduate and PhD students

Discount group
P

Recent Progress in Coupled Cluster Methods
Theory and Applications

The coupled cluster method represents one of the most successful and often used approaches to a quantum-theoretical determination of atomic, molecular, and solid state electronic structure and properties. These methods are relevant to a broad spectrum of disciplines ranging from astrophysics to pharmacology.

“Recent Progress in Coupled Cluster Methods” provides an excellent overview of status quo and future trends in coupled cluster methodology which will enable both researchers and students to become acquainted with recent progress in this area of continuing intense activity. Each of the 22 chapters has been prepared by eminent practitioners in this field of endeavor and emphasizes the fundamental aspects as well as related methodology.

This book provides a useful source of reference for both researchers in chemistry, molecular physics and molecular biology and practitioners working in these fields. It is also recommendable to people using related software packages.

Features
► A powerful reference for those researchers who actively participate in the development of quantum chemical computational methods ► Provides a rigorous and yet accessible treatment of CCT to all types of users of quantum chemical software of computational chemistry and physics, material science, nanotechnology, and drug design

Fields of interest
Theoretical and Computational Chemistry

Target groups
Computational chemists, molecular biologists, molecular physicists, scientists developing quantum chemical computational methods, users of quantum chemical software

Discount group
P

Concepts in Transition Metal Chemistry

This book, together with The Periodic Table DVD, provides an introduction to the transition metals, examining the behavior of the metals and their aqueous ions and complexes. The first four chapters provide an introduction to the transition metals, coordination chemistry, stereochemistry and isomerisms and ligands. The fifth chapter introduces the orbitals in transition metal complexes and then moves on to crystal-field theory. Finally in the last chapter, the disparate properties of magnetism, spectra and bonding are brought together with one unifying theory, in molecular orbital theory.

Contents
Introduction to the transition metals.- Thermo-dynamic stability.- Coordination chemistry.- The stability of coordination compounds.- Crystal-field theory.- Molecular orbital theory of transition-metal complexes.- The Periodic Table DVD.

Field of interest
Inorganic Chemistry

Target groups
College, higher education

Discount group
P

Chemistry and Materials Science

Due February 2010
2010. Approx. 600 p. Hardcover
► $209.00
ISBN 978-3-642-10777-1

Due May 2010
2010. Approx. 650 p. (Challenges and Advances in Computational Chemistry and Physics, Volume 11) Hardcover
► approx. $249.00

RSCPublishing

Due January 2010
Only available in print

Distribution rights outside North and South America: Royal Society of Chemistry, Cambridge, UK

Jointly published with The Open University, Milton Keynes, UK

2010. Approx. 140 p. With DVD. Hardcover
► approx. $119.00
ISBN 978-1-84973-062-4

Also available as Softcover
► approx. $39.95
ISBN 978-1-84973-060-0
Metals and Life

The book covers how organisms acquire metals, their transport and storage, illustrated by such diverse examples as iron in the human body, and structures such as shells and teeth. The volume contains in-text questions with answers, full colour diagrams and revision exercises on an associated website www.rsc.org/metalsandlife.

Contents
Preface.- Introduction.- Ligands and biological significance.- Metal uptake – increasing the solubility of iron.- Metal transport.- Metal storage.- Biomineralisation.- The role of metal-containing proteins in biological processes.- Some key biological processes.- Metals in medicine.- References.

Fields of interest
Inorganic Chemistry; Biochemistry, general

Target groups
College, higher education

Discount group
P

Nanoparticles in the Water Cycle

Properties, Analysis and Environmental Relevance

As nanotechnology enters everyday life, engineered nanoparticles (ENP) will find their way into nature, including surface and groundwater. Here, distinguished experts of water chemistry present dedicated methods for the analysis of nanoparticles in the aquatic environment, their distribution and fate. This includes the influence of complex matrices such as wastewater, brown water with natural organic matter (NOM), and high salt concentrations as well as available and future standardized methods. The background of geogenic, natural nanoparticles is considered in a discussion of known environmental effects, including strategies to test for potential effects on human and environmental health.

Features
- The first book to present dedicated methods for the analysis of nanoparticles in the aquatic environment
- Also covers environmental effects of nanoparticles in surface and groundwater

From the contents

Fields of interest
Monitoring/Environmental Analysis; Nanotechnology; Geochemistry

Target groups
Researchers, legislators and postgraduates in water protection and related environmental subjects, development and product design in industry

Discount group
P

Erich Hückel (1896–1980)
From Physics to Quantum Chemistry

This study, the first comprehensive account of Erich Hückel’s career, examines his scientific work as well as his importance for the emergence of quantum chemistry as an independent discipline in Germany during the 1930s. Hückel began his career by studying quantum physics in Göttingen, but his background in chemistry led him to take up pioneering research on the physics of chemical bonding.

Drawing on a variety of sources, Andreas Karachalios offers a probing account of fast-breaking developments in quantum theory that paved the way for Hückel’s research. In Göttingen and later in Leipzig, Hückel interacted with leading figures not only in quantum physics and physical chemistry but also with others in nearby fields, including organic chemistry and mathematics.

Features
- First comprehensive account of Erich Hückel’s career and work
- Insight in the start of the field of quantum chemistry
- Study of Hückel’s private correspondence and personal files from Marburg and the Rockefeller Archive Center

From the contents

Fields of interest
Chemistry/Food Science, general; Philosophy of Science; Physical Chemistry

Target groups
Physical chemists, philosophers of chemistry, philosophers of science

Discount group
P
Food Analysis

This book provides information on the techniques needed to analyze foods in laboratory experiments. All topics covered include information on the basic principles, procedures, advantages, limitations, and applications. This book is ideal for undergraduate courses in food analysis and is also an invaluable reference to professionals in the food industry. General information is provided on regulations, standards, labeling, sampling and data handling as background for chapters on specific methods to determine the chemical composition and characteristics of foods. Large, expanded sections on spectroscopy and chromatography are also included. Other methods and instrumentation such as thermal analysis, ion-selective electrodes, enzymes, and immunoassays are covered from the perspective of their use in the analysis of foods. A website with related teaching materials is accessible to instructors who adopt the textbook.

From the contents

Field of interest
Food Science; Industrial Chemistry/Chemical Engineering

Target groups
Students

Discount group
P

Structure and Bonding


Volume 136
G. Parkin, Columbia University, New York, NY, USA (Ed.)

Metal-Metal Bonding


Features
- This series presents critical reviews of the present position and future trends in modern chemical research concerned with chemical structure and bonding. - Short and concise reports, each written by the world’s renowned experts. - Still valid and useful after 5 or 10 years. - More information as well as the electronic version of the whole content available at: springerlink.com

Field of interest
Inorganic Chemistry

Target groups
Scientists and practitioners in inorganic chemistry

Discount group
P

Topics in Organometallic Chemistry


Volume 29
A. J. Lees, University Binghamton, NY, USA (Ed.)

Photophysics of Organometallics

Arvind Kumar, Shih-Sheng Sun, and Alistair J. Lees: Photophysics and Photochemistry of Organometallic Rhenium Diimine Complexes; Conor Long: Photophysics of CO Loss from Simple Metal Carbonyl Complexes; Antonin Vlcek Jr: Ultrafast Excited-State Processes in Re(I) Carbonyl-Diimine Complexes: From Excitation to Photochemistry; Kenneth Kam-Wing Lo: Exploitation of Luminescent Organometallic Rhenium(I) and Iridium(III) Complexes in Biological Studies; Maria L. Muro, Aaron A. Rachford, Xianghuai Wang, and Felix N. Castellano: Platinum II Acetylide Photophysics; Andreas F. Rausch, Herbert H. H. Homeier, and Hartmut Yersin: Organometallic Pt(II) and Ir(III) Triplet Emitters for OLED Applications and the Role of Spin–Orbit Coupling: A Study Based on High-Resolution Optical Spectroscopy.

Features
- Each volume of Topics in Organometallic Chemistry provides the broad scientific readership with a comprehensive summary and critical overview of a specific topic in organometallic chemistry. - Research in this rapidly developing transdisciplinary field is having profound influence on other areas of scientific investigation, ranging from catalytic organic synthesis to biology, medicine and material science.

Fields of interest
Organometallic Chemistry; Physical Chemistry; Laser Technology, Photonics

Target groups
Academic and industrial researchers in organometallics, photochemistry and photophysics, organic chemistry, and inorganic chemistry

Discount group
P
Topics in Organometallic Chemistry


Volume 30

R. Chauvin, Y. Canac, Université Paul Sabatier, Toulouse, France (Eds.)

Transition Metal Complexes of Neutral $\eta^1$-Carbon Ligands


Features

► Each volume of Topics in Organometallic Chemistry provides the broad scientific readership with a comprehensive summary and critical overview of a specific topic in organometallic chemistry.
► Research in this rapidly developing transdisciplinary field is having profound influence on other areas of scientific investigation, ranging from catalytic organic synthesis to biology, medicine and material science.

Fields of interest

Organometallic Chemistry; Organic Chemistry; Medicinal Chemistry

Target groups

Researchers in organometallic and organic chemistry as well as medicinal chemistry

Discount group

P

HACCP

A Toolkit for Implementation

This book is an updated version of the 2007 'HACCP: a Toolkit for Implementation' book which provided an outline of the HACCP principles and guidance for completing a HACCP study. (HACCP is Hazard Analysis and Critical Control Points: a system which identifies, evaluates and controls hazards which are significant for food safety. The new book will update the basic information and provide new case studies with increased depth. Some consideration to the format has been given and an improvement will be boxes throughout the text with examples of good and bad points/ways to carry out the study. A unique feature of this book is the accompanying website, hosted by LFI, which will hold pdfs of pages to aid implementation of the plans.

Contents

Preparation for HACCP.- Conducting the Study - HACCP Principles.- Implementation and Maintenance of the HACCP Plan.

Fields of interest

Food Science; Biotechnology; Quality Control, Reliability, Safety and Risk

Target groups

Professional and scholarly

Discount group

P

Atmospheric Chemistry

This book provides undergraduate readers with a basic knowledge of the chemistry of the Earth’s atmosphere and an understanding of the role that chemical transformations play in this vital part of our environment. The composition of the ‘natural’ atmosphere are described in terms of the physical and chemical cycles that govern the behavior of the major and the many minor species present and consider the atmospheric lifetimes of those species. An extension of these ideas leads to a discussion of the impacts of Man’s activities on the atmosphere, and to an understanding of some of the most important environmental ‘issues’ of our time.

Contents

Introduction.- Physics of the atmosphere.- Sources and Sinks of Atmospheric Species.- Observations and models.- Ozone.- Cyclic processes.- Life and the atmosphere.- Chemistry in the atmosphere.- The stratosphere.- Airglow, aurora and ions.- Man’s adverse influences on the atmosphere.

Fields of interest

Environmental Chemistry; Atmospheric Protection/Air Quality Control/Air Pollution; Environmental Engineering/Biotechnology

Target groups

Undergraduate students

Discount group

P

RSCPublishing

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Only available in print

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Royal Society of Chemistry, Cambridge, UK

Jointly published with Leatherhead Food International, Leatherhead, UK

Due April 2010

Distribution rights outside North and South America:
Royal Society of Chemistry, Cambridge, UK

P

R. P. Wayne, A. M. Holloway, University of Oxford, UK

Due March 2010

► $299.00

2010. Approx. 80 p. Softcover
► $119.00
ISBN 978-1-84973-048-8

P. Wareing, Leatherhead Food International, Leatherhead, UK

Due March 2010

► $299.00

2010. Approx. 80 p. Softcover
► $119.00
ISBN 978-1-84973-048-8

P. Wareing, Leatherhead Food International, Leatherhead, UK
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 -- 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 inspects 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
► Develops and explains an innovative theory on the fundamental features and rules of construction of phase diagrams ► Delivers a new approach to inspect phase diagrams by examining the relationships among the phase regions and their boundaries

Fields of interest
Physical Chemistry; Characterization and Evaluation of Materials; Metallic Materials

Target groups
Researchers and engineers as well as graduate students in the areas of chemistry, metallurgy and materials science

Discount group
P

Due March 2010


Jointly published with Science Press.

2010. Approx. 300 p. 63 illus., 3 in color. Hardcover
 ► approx. $179.00
ISBN 978-3-642-02939-4
Animation and Performance Capture Using Digitized Models

The realistic generation of virtual doubles of real-world actors has been the focus of computer graphics research for many years. However, some problems still remain unsolved: it is still time-consuming to generate character animations using the traditional skeleton-based pipeline, passive performance capture of human actors wearing arbitrary everyday apparel is still challenging, and until now, there is only a limited amount of techniques for processing and modifying mesh animations, in contrast to the huge amount of skeleton-based techniques. In this thesis, we propose algorithmic solutions to each of these problems. First, two efficient mesh-based alternatives to simplify the overall character animation process are proposed. Although abandoning the concept of a kinematic skeleton, both techniques can be directly integrated in the traditional pipeline, generating animations with realistic body deformations.

Features
- First book on the Subject of Performance Capture
- The overall system is detailed in steps which helps the implementation
- Includes an updated review of the most related work in the area
- Shows the whole pipeline from data capture to rendering the final result

Fields of interest
Computer Graphics; Computer Imaging, Vision, Pattern Recognition and Graphics; Image Processing and Computer Vision

Target groups
Scientists at universities, professionals

Discount group
P

Pipelined ADC Design and Enhancement Techniques

Pipelined ADCs have seen phenomenal improvements in performance over the last few years. As pipelined ADCs are key circuit blocks in a wide variety of applications such as video processing and high-speed communication, when designing a pipelined ADC a clear understanding of the tradeoffs as well as state of the art techniques used to implement today’s high-performance low-power ADCs is required.

Features
- Based on award winning and practical works published at ISSCC and ESSCIRC. The fact that the ideas discussed in the book have already been vetted by a high calibre peer-review ensures the reader will be getting premium content
- Discusses many approaches used to enable very low power consumption; an area of interest for ‘green’ electronics

Contents

Fields of interest
Circuits and Systems; Processor Architectures

Target groups
Researchers and graduate level students in the field of circuit design and data converters, graduate students/researchers in electronics looking for a tutorial reference and reference design to help them with their projects. Similarly professional IC designers who are looking for a reference to help them with their designs

Discount group
P

Fuzzy Mathematics: Approximation Theory

This monograph belongs to the broader area of Fuzzy Mathematics and it is the first one in Fuzzy Approximation Theory. The chapters are self-contained with lots of applications to teach several advanced courses and the topics covered are very diverse. An extensive background of Fuzziness and Fuzzy Real Analysis is given. The author covers Fuzzy Differentiation and Integration Theory followed by Fuzzy Ostrowski inequalities. Then results on classical algebraic and trigonometric polynomial Fuzzy Approximation are presented. The author develops a complete theory of convergence with rates of Fuzzy Positive linear operators to Fuzzy unit operator, the so-called Fuzzy Korovkin Theory. The related Fuzzy Global Smoothness is included. Then follows the study of Fuzzy Wavelet type operators and their convergence with rates to Fuzzy unit operator. Similarly the Fuzzy Neural Network Operators are discussed followed by Fuzzy Random Korovkin approximation theory and Fuzzy Random Neural Network approximations.

Features
- Introductory book to Fuzzy Mathematics
- The State of the art of Approximation theory and Fuzzy Mathematics

From the contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics); Probability Theory and Stochastic Processes

Target groups
Engineers, researchers, and students in fuzziness, mathematics and soft computing

Discount group
P
Radiolocation in Ubiquitous Wireless Communication

The subject of the book is application of multi-antenna radiolocation to the environment of fast, ubiquitous wireless communication among portable devices. It is a systematic presentation of the author's research and development in the field, within the 802.11b standard, while explaining the general principles and exploring applications to other standards and situations. The purpose is to fill a gap in the current technical literature and present the issues involved in locating mobile wireless network agents, in a single volume, accessible to system designers and other practitioners in the wireless field.

Features
- Description of a real-time, single-packet radio-location methodology
- Detailed description of the architecture of two generations of working prototypes
- Analysis of extensions and generalizations of this methodology to other applications

Contents

Fields of interest
Communications Engineering, Networks; Computer Communication Networks; Signal, Image and Speech Processing

Target groups
System design engineers and experts in wireless network management and security

Discount group
P

Robotics

This supplementary introductory tutorial treats the following subjects: the basic characteristics of industrial robot mechanisms; the pose and movement of an object, which are described by homogenous transformation matrices; a geometric model of robot mechanism; a short introduction into kinematics and dynamics of robots; robot sensors and the planning of robot trajectories; basic control schemes resulting in either desired end-effector trajectory or force; robot grippers and feeding devices, which are described together with the basics of robot vision; the planning of robot assembly; and finally, robot standards and safety are briefly dealt with. The book concludes with a glossary in English, French and German.

Features
- Major feature of the book is its simplicity
- No book on this topic exists at this level
- The work contains a glossary in English, French and German

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

Target groups
Students of engineering (electrical, mechanical, computer, civil) and engineers who wish to acquire knowledge of robotics in a simple and fast manner

Discount group
P

Earthquake Resistant Buildings

This concise work provides a general introduction to the design of buildings which must be resistant to the effect of earthquakes. A major part of this design involves the building structure which has a primary role in preventing serious damage or structural collapse. Much of the material presented in this book examines building structures. Due to the recent discovery of vertical components, examines not only the resistance to lateral forces but also analysis the disastrous influence of vertical components.

The work is written for Practicing Civil, Structural, and Mechanical Engineers, Seismologists and Geoscientists. It serves as a knowledge source for graduate students and their instructors.

Features
- This is the first comprehensive introduction into earthquake resistant design and construction of buildings, providing the reader with a plan of the most important topics – starting from the soil analysis to the anchorage of tall buildings
- Particular attention is pay to vertical movement – the most dangerous and destructive motion
- Many design examples and case studies are included

Contents

Fields of interest
Building Construction, HVAC, Refrigeration; Civil Engineering; Structural Mechanics

Target groups
All persons dealing with design and construction of buildings: professionals, researchers, students

Discount group
P
Elasticity

This is a first year graduate textbook in Linear Elasticity. It has been written with the practical engineering reader in mind, with minimal previous knowledge of solid mechanics, continuum mechanics or mathematics required. Emphasis is placed on engineering applications of elasticity and examples are generally worked through to final expressions for the stress and displacement fields in order to explore the engineering consequences of the results. Now in its third edition, detailed improvements occur throughout the work, some suggested by users of earlier editions. The range of topics treated has been expanded to include, for example, complex variable methods, variational methods and three-dimensional plate and beam solutions. The work contains chapters on antiplane stress systems, Saint-Venant torsion and bending and an expanded section on three-dimensional problems in spherical and cylindrical coordinate systems, including axisymmetric torsion of bars of non-uniform circular cross-section.

Features
- Expansion of topics to include more on complex variable methods, variational methods and three-dimensional plate and beam solutions
- Additional end-of-chapter problems
- Detailed improvements elsewhere, some suggested by users of the earlier editions
- Modern treatment of the subject
- Clarity of presentation
- Supplementary electronic files in Mathematica and Maple available for download

Fields of interest
Continuum Mechanics and Mechanics of Materials; Analysis; Applications of Mathematics

Target groups
Graduate classes in elasticity, scientists in solid mechanics

Discount group
P

Dynamic Reconfigurable Architectures and Transparent Optimization Techniques

Automatic Acceleration of Software Execution

Dynamic Reconfigurable Architectures and Transparent Optimization Techniques presents a detailed study on new techniques to cope with the aforementioned limitations. First, characteristics of reconfigurable systems are discussed in details, and a large number of case studies is shown. Then, a detailed analysis of several benchmarks demonstrates that such architectures need to attack a diverse range of applications with very different behaviours, besides supporting code compatibility. This requires the used of dynamic optimization techniques, such as Binary Translation and Trace reuse. Finally, works that combine both reconfigurable systems and dynamic techniques are discussed and a quantitative analysis of one them, the DIM architecture, is presented.

Features
- Provides a clear review of static and dynamic architecture optimization strategies in the field of reconfigurable computing
- Shows the importance of dynamic mechanism to accelerate heterogeneous code
- Demonstrates how different dynamic techniques can be combined in a single architecture that can accelerate heterogeneous code

Contents
Chapter 1. Introduction.
Chapter 2. Reconfigurable Systems.
Chapter 3. Deployment of Reconfigurable Systems.
Chapter 4. Dynamic Optimization Techniques.
Chapter 5. Dynamic Detection and Reconfiguration.
Chapter 6. The DIM Reconfigurable System.

Fields of interest
Circuits and Systems; Processor Architectures

Target groups
Researchers and graduate students in applied and computational mechanics

Discount group
P

Elastomere Friction

Theory, Experiment and Simulation


Fields of interest
Continuum Mechanics and Mechanics of Materials; Mechanics; Polymer Sciences

Target groups
Researchers and graduate students in applied and computational mechanics

Discount group
P
B. Bouchon-Meunier, L. Magdalena, M. Ojeda-Aciego, J. Verdegay, R. R. Yager (Eds.)

Foundations of Reasoning under Uncertainty

This volume draws on papers presented at the 2008 Conference on Information Processing and Management of Uncertainty (IPMU), held in Málaga, Spain, organized by the University of Málaga. The conference brought together some of the world’s leading experts in the study of uncertainty.

Features
- State of the art of Uncertainty Research
- Outcome of the 2008 Conference on Information Processing and Management of Uncertainty (IPMU) in Málaga, Spain

Contents

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

Target groups
Researchers, engineers, graduate students in fuzziness

Discount group
P

D. Bradley, D. W. Russell (Eds.)

Mechatronics in Action
Case Studies in Mechatronics Education and Applications

Mechatronics in Action’s case-study approach provides the most effective means of illustrating how mechatronics can make products and systems more flexible, more responsive and possess higher levels of functionality than would otherwise be possible. The series of case studies serves to illustrate how a mechatronic approach has been used to achieve enhanced performance through the transfer of functionality from the mechanical domain to electronics and software.

Educationally, case-based learning forms an important part of mechatronics course design and Mechatronics in Action not only provides readers with access to a range of case studies, and the experts’ view of these, but also offers case studies in course design and development to support tutors in making the best and most effective use of the technical coverage provided.

Features
- Provides course tutors and students with access to a range of mechatronics case studies, and the experts’ view of these, as well as case studies of course design and development

From the contents

Fields of interest
Engineering Design; Control, Robotics, Mechatronics; Automotive Engineering

Target groups
Students at both undergraduate and masters level, course tutors and developers, practising designers

Discount group
P

P. Brox, I. Castillo, S. S. Solano, Instituto de Microelectrónica de Sevilla (CNM-CSIC), Sevilla, Spain

Fuzzy Logic-Based Algorithms for Video De-Interlacing

This book is organized in five chapters. In Chapter 1, some basic concepts are explained to completely understand the contribution of the algorithms developed in this research work. The evaluation of how motion is present and how it influences on de-interlacing is studied in Chapter 2. The design options of the proposed fuzzy motion-adaptive de-interlacing algorithm is studied in Chapter 3. A spatial interpolator that adapts the interpolation to the presence of edges in a fuzzy way is developed in Chapter 4. A temporal interpolator that adapts the strategy of the interpolation to possible repetition of areas of fields is presented in Chapter 5. Using both interpolators in the fuzzy motion-adaptive algorithm described in Chapter 3 clearly improves the de-interlaced results.

Features
- State of the art of fuzzy logic-based algorithms for video de-interlacing

Contents

Fields of interest
Computational Intelligence; Image Processing and Computer Vision; Communications Engineering, Networks

Target groups
Researchers, engineers, graduate students in soft computing, digital video processing

Discount group
P

£129.00
ISBN 978-3-642-10726-9

£139.00

Springer News 1/2010
The DARPA Urban Challenge
Autonomous Vehicles in City Traffic

This volume, edited by Martin Buehler, Karl Iagnemma and Sanjiv Singh, presents a unique and comprehensive collection of the scientific results obtained by finalist teams that participated in the DARPA Urban Challenge in November 2007, in the mock city environment of the George Air Force base in Victorville, California. This book is the companion of a previous volume by the same editors which was devoted to the Grand Challenge, which took place in the Nevada desert during October 2005, and was the second in the series of autonomous vehicle races sponsored by DARPA. The Urban Challenge demonstrated how cutting-edge perception, control, and motion planning techniques can allow intelligent autonomous vehicles not only to travel significant distances in off-road terrain, but also to operate in urban scenarios.

Features
- Original papers of all the important participants of the famous DARPA Urban Challenge
- A “must have” for robotics researchers and students
- Describes the state of the art in perception, planning and control of robots

From the contents

Fields of interest
Control, Robotics, Mechatronics; Artificial Intelligence (incl. Robotics); Machinery and Machine Elements

Target groups
Researchers, graduate students and professionals in robotics

Discount group
P

B. Cao, Guangzhou University, Guangdong, China

Optimal Models and Methods with Fuzzy Quantities

The book contains ten chapters as follows, Prepare Knowledge, Regression and Self-regression Models with Fuzzy Coefficients; Regression and Self-regression Models with Fuzzy Variables, Fuzzy Input/output Model, Fuzzy Cluster Analysis and Fuzzy Recognition, Fuzzy Linear Programming, Fuzzy Geometric Programming, Fuzzy Relative Equation and Its Optimizing, Interval and Fuzzy Differential Equations and Interval and Fuzzy Functional and Their Variation. It can not only be used as teaching materials or reference books for under-graduates in higher education, master graduates and doctor graduates in the courses of applied mathematics, computer science, artificial intelligence, fuzzy information process and automation, operations research, system science and engineering, and the like, but also serves as a reference book for researchers in these fields, particularly, for researchers in soft science.

Features
- Studies optimized model with fuzzy quantities

Contents

Fields of interest
Applied Mathematics/Computational Methods of Engineering; Artificial Intelligence (incl. Robotics)

Target groups
Engineers, researchers, and students in fuzziness

Discount group
P

G. Chesi, University of Hong Kong, Pokfulam Road, Hong Kong; K. Hashimoto, Tohoku University, Sendai, Japan. (Eds.)

Visual Servoing via Advanced Numerical Methods

The text of Visual Servoing via Advanced Numerical Methods has its roots in an invited session presented at the IEEE International Conference on Robotics and Automation at Kobe in May 2009. The work presented here has been much expanded and gives a comprehensive overview of the state of the art in this important area of robotics. The latest contributions from well-known experts in visual servoing provide the reader with solutions to the fundamental and specific problems that have to be solved in using camera-derived feedback to control robotic motion and make it imitative of the actions of human beings. These solutions are based on dedicated numerical methods the development of which has been facilitated by recent progress in video devices, computer hardware and optimisation techniques. The book is organised into three parts reflecting: the uses of image processing and computer vision; control, optimal and robust control; and stability, performance and robustness analysis in visual servoing.

Features
- Provides readers with extensive research in important method of robotic sensing and control
- Results reported in the text are supported by video and other on-line material
- Takes account of the most recent developments in video and computer technology
- Facilitates the construction of robots which interact with the environment in more human-like ways – reducing the need for specially designed environments

Fields of interest
Control; Image Processing and Computer Vision; Signal, Image and Speech Processing

Target groups
Academic researchers in control, robotics and computer vision; industrial practitioners working with robotic systems; libraries

Discount group
P
Advances in Multi-Objective Nature Inspired Computing

The purpose of this book is to collect contributions that deal with the use of nature inspired metaheuristics for solving multi-objective combinatorial optimization problems. Such a collection intends to provide an overview of the state-of-the-art developments in this field, with the aim of motivating more researchers in operations research, engineering, and computer science, to do research in this area. This book will constitute a valuable reference for those wishing to do research on the use of nature inspired metaheuristics for solving multi-objective combinatorial optimization problems, since that has been the main goal of this book.

Features
► Recent research in multi-objective nature inspired computing

Contents

Fields of interest
Appl.Mathematics/Computational Methods of Engineering; Artificial Intelligence (incl. Robotics)

Target groups
Researchers, engineers, graduate students in computational intelligence, natural computing

Discount group
P

Speech Processing in Modern Communication

Challenges and Perspectives
Modern communication devices, such as mobile phones, teleconferencing systems, VoIP, etc., are often used in noisy and reverberant environments. Therefore, signals picked up by the microphones from telecommunication devices contain not only the desired near-end speech signal, but also interferences such as the background noise, far-end echoes produced by the loudspeaker, and reverberations of the desired source. These interferences degrade the fidelity and intelligibility of the near-end speech in human-to-human telecommunications and decrease the performance of human-to-machine interfaces (i.e., automatic speech recognition systems). The proposed book deals with the fundamental challenges of speech processing in modern communication, including speech enhancement, interference suppression, acoustic echo cancelation, relative transfer function identification, source localization, dereverberation, and beamforming in reverberant environments.

Features
► Delivers timely overview of the fundamental challenges in modern speech communication systems ► Provides concise insights into recent research topics

Fields of interest
Signal, Image and Speech Processing; User Interfaces and Human Computer Interaction; Acoustics

Target groups
Graduate students and experienced researchers in physics, chemistry, engineering and applied mathematics

Discount group
P

Pattern Formation at Interfaces

The book deals with modern methods of nonlinear stability theory applied to problems of continuous media mechanics in the presence of interfaces, with applications to materials science, chemical engineering, heat transfer technologies, as well as in combustion and other reaction-diffusion systems. Interfaces play a dominant role at small scales, and their correct modeling is therefore also crucial in the rapidly expanding fields of microfluidics and nanotechnologies. To this aim, the book combines contributions of eminent specialists in the field, with a special emphasis on rigorous and predictive approaches. Other goals of this volume are to allow the reader to identify key problems of high scientific value, and to see the similarity between a variety of seemingly different physical problems.

Fields of interest
Engineering Fluid Dynamics

Target groups
Graduate students and experienced researchers in physics, chemistry, engineering and applied mathematics

Discount group
P
R. David, H. Alla, Laboratoire d’Automatique de Grenoble, St Martin D’Heres, France

**Discrete, Continuous, and Hybrid Petri Nets**

Petri Nets were introduced and still successfully used to analyze and model discrete event systems especially in engineering and computer sciences such as in automatic control. Recently this discrete Petri Nets formalism was successfully extended to continuous and hybrid systems. This monograph presents a well written and clearly organized introduction in the standard methods of Petri Nets with the aim to reach an accurate understanding of continuous and hybrid Petri Nets, while preserving the consistency of basic concepts throughout the book. The book is a monograph as well as a didactic tool which is easy to understand due to many simple solved examples and detailed figures. In its second completely reworked edition various sections, concepts and recently developed algorithms are added as well and additional examples/exercises.

**Features**
- Scientific monograph as well as a didactic tutorial by the pioneers of continuous and hybrid petri nets
- In its 2nd completely overworked edition
- Well structured, incl. various exercises and solutions in one book
- The second edition provides various additional sections, concepts and recently developed algorithms and additional examples/exercises

**Contents**

**Fields of interest**
- Control, Robotics, Mechatronics; Computational Intelligence; Mathematical Logic and Formal Languages

**Target groups**
- Engineers, researchers and graduated students in control engineering, systems engineering and computer science

**Discount group**
- P

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B. Dhillon, University of Ottawa, Ontario, Canada

**Mine Safety**

A Modern Approach

Mine Safety combines detailed information on safety in mining with methods and mathematics that can be used to preserve human life.

By compiling various recent research results and data into one volume, Mine Safety eliminates the need to consult many diverse sources in order to obtain vital information. Chapters cover a broad range of topics, including: human factors and error in mine safety, mining equipment safety, safety in offshore industry and programmable electronic mining system safety.

They are written in such a manner that the reader requires no previous knowledge to understand their contents. Examples and solutions are given at appropriate places, and there are numerous problems to test the reader’s comprehension.

Mine Safety will prove useful for many individuals, including engineering and safety professionals working in the mining industry, researchers, instructors, and undergraduate and graduate students in the field of mining engineering.

**Features**
- Gathers diverse information on mine safety into one volume
- Provides a comprehensive coverage of topics on mine safety, requiring no prior knowledge

**From the contents**

**Fields of interest**
- Quality Control, Reliability, Safety and Risk; Mineral Resources; Mathematical Modeling and Mathematics in Industry

**Target groups**
- Engineers, safety professionals, advanced undergraduate students, postgraduate students and researchers

**Discount group**
- P

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A. Dolgui, Ecole Nationale Supérieure des Mines de Saint-Etienne, France; J. M. Proth, INRIA-Lorraine, Metz, France

**Supply Chain Engineering**

Useful Methods and Techniques

Supply Chain Engineering considers how modern production and operations management techniques can respond to the pressures of the competitive global marketplace. It presents a comprehensive analysis of concepts and models related to outsourcing, dynamic pricing, inventory management, RFID, and flexible and re-configurable manufacturing systems, as well as real-time assignment and scheduling processes. A significant part is also devoted to lean manufacturing, line balancing, facility layout and warehousing techniques. Explanations are based on examples and detailed algorithms while discarding complex and unnecessary theoretical minutiae. All examples have been carefully selected from an industrial application angle.

This book is written for students and professors in industrial and systems engineering, management science, operations management and business. It is also an informative reference for managers looking to improve the efficiency and effectiveness of their production systems.

**Features**
- The first comprehensive analysis of concepts and models in production systems management to consider a broad perspective covering outsourcing strategies and dynamic pricing policies

**Fields of interest**
- Engineering Economics, Organization, Logistics, Marketing; Operations Research/Decision Theory; Facility Management

**Target groups**
- Researchers working in operational research for reconfigurable and lean production systems, assembly line design and balancing, dynamic facility layout, RFID in supply chain management, dynamic scheduling, outsourcing, and dynamic pricing; academic tutors of management science, operations management and business, PhD students studying production and operational research topics; undergraduate and postgraduate students in industrial and systems engineering, industrial engineering and operational research, mechanical and industrial engineering, as well as students in MBA programs

**Discount group**
- P

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**Engineering**

Due March 2010

2nd ed. 2010. Approx. 570 p. Hardcover
- approx. $159.00
ISBN 978-3-642-10668-2

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**Engineering**

Due June 2010

2010. Approx. 310 p. 29 Illus. (Springer Series in Reliability Engineering) Hardcover
- $169.00
ISBN 978-1-84996-114-1

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**Engineering**

Due February 2010

2010. XX, 539 p. 149 Illus. Hardcover
- $209.00
Z. Dong, P. Zhang, J. Ma, J. Zhao, M. Ali, K. Meng, X. Yin

Emerging Techniques in Power System Analysis

“Emerging Techniques in Power System Analysis” identifies the new challenges facing the power industry following the deregulation. The book presents emerging techniques including data mining, grid computing, probabilistic methods, phasor measurement unit (PMU) and how to apply those techniques to solving the technical challenges. The book is intended for engineers and managers in the power industry, as well as power engineering researchers and graduate students.

Zhaoyang Dong is an associate professor at the Department of Electrical Engineering, The Hong Kong Polytechnic University, China. Pei Zhang is program manager at the Electric Power Research Institute (EPRI), USA.

Features
► An up-to-date reference for power engineering professionals ► Offers new solutions for the power industry ► Discusses emerging techniques not covered elsewhere

Contents

Fields of interest
Power Engineering; Control, Robotics, Mechatronics

Target groups
Engineers and managers in the power industry, as well as researchers and graduate students in power engineering

Discount group
P

C. Duan, Mitsubishi Electronics Research Laboratories, Cambridge, MA, USA; B. J. LaMeres, Montana State University, Bozeman, MT, USA; S. P. Khatri, Texas A&M University, College Station, TX, USA

On and Off-Chip Crosstalk Avoidance in VLSI Design

Deep Sub-Micron (DSM) processes present many changes to Very Large Scale Integration (VLSI) circuit designers. One of the greatest challenges is crosstalk, which becomes significant with shrinking feature sizes of VLSI fabrication processes. The presence of crosstalk greatly limits the speed and increases the power consumption of the IC design.

This book focuses on crosstalk avoidance with bus encoding, one of the techniques that selectively mitigates the impact of crosstalk and improves the speed and power consumption of the bus interconnect. This technique encodes data before transmission over the bus to avoid certain undesirable crosstalk conditions and thereby improve the bus speed and/or energy consumption.

Features
► Presents a novel way to combine chip and package design, reducing cross-talk so that VLSI systems can be designed to operate significantly faster ► Provides a comprehensive set of bus cross-talk cancellation techniques, both memoryless and memory-based

From the contents

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

Target groups
Researchers and practitioners in embedded systems, electronic design automation concerned with hardware acceleration of EDA algorithms, especially with FPGAs and GPUs

Discount group
P

J. W. Eerkens, University of Missouri, Columbia, MO, USA

The Nuclear Imperative
A Critical Look at the Approaching Energy Crisis (More Physics for Presidents)

In this well documented global wake-up call, nuclear physicist Jeff Eerkens explores remedies for the impending energy crisis, when oil and natural gas are depleted. Because burning coal worsens the problem of global warming, alternate energy sources must be instituted. The Nuclear Imperative demonstrates with scientific documentation that solar, wind, and biomass power alone, while helpful, are incapable of supplying and sustaining the enormous quantities of electricity and heat needed for manufacturing portable synthetic fuels (synfuels) to replace our current use of fossil fuels. Instead, it offers a fresh look at uranium-produced energy as the optimal affordable solution.

Features
► Very timely in view of current increased fuel prices and power outages ► Defuses common myths about nuclear energy ► Exposes limitations of presently popular solar and wind energies ► Uses scientific documentation to back up arguments ► Second updated edition

From the contents

Fields of interest
Renewable Energy Sources; Nuclear Engineering; Environmental Management

Target groups
Those concerned about energy and fuel shortages working in engineering, physics, chemistry, economics, agriculture, geopolitics, international law, radiation safety, and sociology; environmentalists

Discount group
P
Wireless Sensor Networks: Deployments and Design Frameworks

Wireless Sensor Networks: Real-Life Deployments and Design Frameworks brings together the most successful, current deployments of Wireless Sensor Networks (WSNs) including but not limited to specific WSN applications to generic issues covering practical design, implementation and deployment. Chapters cover design frameworks, available software and hardware techniques as well as system components and guidelines towards rapid development and deployment of WSN applications.

Features
- Brings together successful Wireless Sensor Networks deployments within a generic design/development framework
- Provides a design framework for rapid development of Wireless Network Systems that is easy to understand and apply
- Provides practical hints and guides to available technology choices in a structured manner
- Provides formal routes to rapid design and deployment and evaluation of Wireless Sensor Network applications

From the contents
WSN state of the art: the practical and theoretical divide:.- Habitat monitoring with WSNs:.- Soil sensing systems and dealing with missing data:.- Deployed high data rate sensing applications with wavescope:.- WSN for safety critical applications:.- Monitoring glaciers:.- Speckles: implementing the smart dust vision:.- GridStix: supporting flood prediction:.- Design framework for rapid WSN development and deployment.

Fields of interest
Communications Engineering, Networks; Signal, Image and Speech Processing; Computer Communication Networks

Target groups
Practicing engineers in the networking, sensors, communications area, interested in implementing and deploying wireless sensor networks

Discount group
P

C. H. Gebotys, University of Waterloo, ON, Canada

Security in Embedded Devices

Although security is prevalent in PCs, wireless communications and other systems today, it is expected to become increasingly important and widespread in many embedded devices. For some time, typical embedded system designers have been dealing with tremendous challenges in performance, power, price and reliability. However now they must additionally deal with definition of security requirements, security design and implementation. Given the limited number of security engineers in the market, large background of cryptography with which these standards are based upon, and difficulty of ensuring the implementation will also be secure from attacks, security design remains a challenge. This book provides the foundations for understanding embedded security design, outlining various aspects of security in devices ranging from typical wireless devices such as PDAs through to contactless smartcards to satellites.

Features
- Provides must-have content for both security engineers and embedded systems designers
- Describes numerous case studies, including contactless smartcards, PDA security, and satellite security, illustrating various aspects of secure, embedded design

Contents

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

Target groups
Electrical, computer, software and embedded systems engineers, and embedded system designers as well as graduate level engineering students

Discount group
P

Z. W. Geem, Rockville, MD, USA

Recent Advances In Harmony Search Algorithm

Nowadays, music-inspired phenomenon-mimicking harmony search algorithm is fast growing with many applications. One of key success factors of the algorithm is the employment of a novel stochastic derivative which can be used even for discrete variables. Instead of traditional calculus-based gradient, the algorithm utilizes musician’s experience as a derivative in searching for an optimal solution. This can be a new paradigm and main reason in the successes of various applications.

The goal of this book is to introduce major advances of the harmony search algorithm in recent years. The book contains 14 chapters with the following subjects: State-of-the-art in the harmony search algorithm structure; robotics (robot terrain and manipulator trajectory); visual tracking; web text data mining; power flow planning; fuzzy control system; hybridization (with Taguchi method or SQP method); groundwater management; irrigation; logistics; timetabling; and bioinformatics (RNA structure prediction).

Features
- Puts together for the recent advances of harmony search algorithms

From the contents

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

Target groups
Researchers, engineers, graduate students in computational intelligence, computer science, engineering, music

Discount group
P
Potentials and Trends in Biomimetics

The purpose of this study was to take an in-depth look at the most important trends and the potentials of biomimetics as a basis of science and engineering development and innovation and to assess the standing of biomimetic research and development in Germany as compared internationally. Building on case studies; analyses of literature, patents, and research networks; and interviews and workshops, information and specific findings were compiled with respect to the status of biomimetics as a research and development field, the validity of the “biomimetic promise” of ecological adaptation and low-risk biomimetic solutions, the current trends in bionics, as well as the general setting, driving forces, and obstacles in the realization of its potential for innovation.

Contents
Introduction.- Trends in biomimetics.- Technological aspects of learning from nature.- Topics, players, and research networks - results of the literature and patent.- Biomimetics and innovation.- Conclusion.

Fields of interest
Biomedical Engineering; Life Sciences, general; Biophysics and Biological Physics

Target groups
Scientists, researchers, libraries and institutes

Discount group
P

Feedback Control Systems for Micro- and Nano-Scales

MEMS to Atoms
The use of control and control systems are an essential part of functioning integrated systems. Similar to macro-scale machines and processes, control systems can play a major role in improving the performance of micro- and nano-scale systems, and in enabling new capabilities that would otherwise not be possible. However, the majority of problems at these scales present many new challenges that go beyond the current state-of-the-art in control engineering. This is a result of the multidisciplinary nature of micro/nanotechnology, which requires the merging of control engineering with physics, biology and chemistry.

Features
- Shows how the utilization of feedback control in nanotechnology instrumentation can yield results far better than passive systems can
- Discusses the application of control systems to problems in microelectromechanical systems, microfluidics, optical trapping, nanofabrication, and quantum dynamics, among others

From the contents
Introduction.- Control of micro-scale inertial sensors.- Integrated process modeling and control in microfabrication.- Precision motion control of MEMS actuators.- Controlling untethered microbots.- Feedback control of micro-flows for particle manipulation.- Controlled optical trapping: instrumentation, methods, and applications.- Closed-loop AFM probing of molecule interactions.

Fields of interest
Control, Robotics, Mechatronics; Electronics and Microelectronics, Instrumentation; Vibration, Dynamical Systems, Control

Target groups
Researchers, and practicing engineers in the control systems, microsystems, and nanotechnology fields in academia and industry

Discount group
P

Hardware Acceleration of EDA Algorithms

Custom ICs, FPGAs and GPUs
This book deals with the acceleration of EDA algorithms using hardware platforms such as FPGAs and GPUs. Widely applied CAD algorithms are evaluated and compared for potential acceleration on FPGAs and GPUs. Coverage includes discussion of conditions under which it is preferable to use one platform over another, e.g., when an EDA problem has a high degree of data parallelism, the GPU is typically the preferred platform, whereas when the problem has more control, an FPGA may be preferred. Results are presented for the acceleration of several CAD algorithms (fault simulation, fault table generation, model card evaluation in SPICE, Monte Carlo statistical static timing analysis), demonstrating speedups from 30X to 800X.

Features
- Provides guidelines on whether to use GPUs or FPGAs when accelerating a given EDA algorithm, with validation by a concrete example implemented on both platforms
- Demonstrates the acceleration of several popular EDA algorithms on GPUs, with speedups from 30X to 800X
- Presents techniques in a way that the reader can use example algorithms presented to determine how best to accelerate their specific EDA algorithm

From the contents

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

Target groups
Researchers and practitioners in embedded systems, electronic design automation concerned with hardware acceleration of EDA algorithms, especially with FPGAs and GPUs

Discount group
P
L. Guo, H. Wang

Stochastic Distribution Control System Design
A Convex Optimization Approach

A recent development in SDC-related problems is the establishment of intelligent SDC models and the intensive use of LMI-based convex optimization methods. Within this theoretical framework, control parameter determination can be designed and stability and robustness of closed-loop systems can be analyzed. This book describes the new framework of SDC system design and provides a comprehensive description of the modelling of controller design tools and their real-time implementation. It starts with a review of current research on SDC and moves on to some basic techniques for modelling and controller design of SDC systems. This is followed by a description of controller design for fixed-control-structure SDC systems, PDF control for general input- and output-represented systems, filtering designs, and fault detection and diagnosis (FDD) for SDC systems. Many new LMI techniques being developed for SDC systems are shown to have independent theoretical significance for robust control and FDD problems.

Features
- Shows the reader how to expand the use of stochastic control methods beyond those usually available in a broad range of industrial process environments
- Uses linear matrix inequality methods to allow the reader to control parameter determination and assess closed-loop performance

From the contents

Fields of interest
Control; Probability Theory and Stochastic Processes; Industrial Chemistry/Chemical Engineering

Target groups
Academic researchers in statistical and process control and related disciplines, process and quality control and other industrial engineers, libraries

Discount group
P

Advanced Materials and Technologies for Micro/ Nano-Devices, Sensors and Actuators
St. Petersburg, Russia, 29 June–2 July 2008

The main goal of this book is to review recent progress and current status of MEMS/NEMS technologies and devices. Several important areas are discussed: history of research in the field, device physics, examples of successful applications, sensors, materials and processing aspects. The authors who have contributed to the book represent a diverse group of leading scientists from academic, industrial and governmental labs worldwide who bring a broad array of backgrounds such as device physics, technologists, electrical and mechanical engineering, surface chemistry and materials science. The contributions to this book are accessible to both expert scientists and engineers who need to keep up with leading edge research, and newcomers to the field who wish to learn more about the exciting basic and applied research issues relevant to micromechanical devices and technologies.

Fields of interest
Microengineering; Nanotechnology and Microengineering; Mechanics

Target groups
Materials scientists, electrical engineers, mechanical engineers, MEMS/NEMS community, RF engineers

Discount group
P

Introduction to Modeling and Control of Internal Combustion Engine Systems

Internal combustion engines (ICE) still have potential for substantial improvements, particularly with regard to fuel efficiency and environmental compatibility. In order to fully exploit the remaining margins, increasingly sophisticated control systems have to be applied. This book offers an introduction to cost-effective model-based control-system design for ICE. The primary emphasis is put on the ICE and its auxiliary devices. Mathematical models for these processes are developed and solutions for selected feedforward and feedback control-problems are presented.

The discussions concerning pollutant emissions and fuel economy of ICE in automotive applications constantly intensified since the first edition of this book was published. Concerns about the air quality, the limited resources of fossil fuels and the detrimental effects of greenhouse gases exceedingly spurred the interest of both the industry and academia in further improvements.

Features
- Description of the mathematical modelling of the physical processes associated with Internal Combustion Engines
- Provides the model-based controller design and optimization for novel motor technologies

Contents

Fields of interest
Automotive Engineering; Engineering Thermodynamics, Heat and Mass Transfer; Control, Robotics, Mechatronics

Target groups
Researchers and graduate students in control and engine design

Discount group
P

Chemistry and Materials Science

Due February 2010

2010, IX, 313 p. (NATO Science for Peace and Security Series B: Physics and Biophysics) Hardcover

► $229.00

Also available as Softcover

► $119.00

Engineering

Due February 2010

2nd ed. 2010, XII, 356 p. 204 illus. Hardcover

► $89.95
ISBN 978-3-642-10774-0

Chemistry and Materials Science
Brain-Inspired Information Technology

"Brain-inspired information technology" is one of the key concepts for the development of information technology in the next generation. Explosive progress of computer technology has been continuing based on a simple principle called “if-then rule”. This means that the programmer of software have to direct every action of the computer programs in response to various inputs. There inherently is a limitation of complexity because we human have a limited capacity for managing complex systems. Actually, many bugs, mistakes of programming, exist in computer software, and it is quite difficult to extinguish them. The parts of computer programs where computer viruses attack are also a kind of programming mistakes, called security holes. Of course, human body or nervous system is a kind of programming mistakes, called security holes. Security programs where computer viruses attack are also to extinguish them. The parts of computer programs where computer viruses attack are also a kind of programming mistakes, called security holes.

Features

- Recent results in brain inspired information technology
- The new space programs of Asia, the Middle East and South-America
- Missions capable autonomous control systems in the oceans, in the air and in space.
- Three Paths to Relevance
- Brain-like Evolving Spiking Neural Networks for Multimodal Information Processing
- Human-like local navigation system inspired by a hippocampal memory mechanism

Fields of interest

- Neurosciences

Target groups

Researchers, engineers, graduate students in computational intelligence, applied computational neuroscience

Discount group

T
Control: Three Decades of Progress

Dedicated to Chris Byrnes and Anders Lindquist

Features
- A who-is-who of control research of the last 3 decades
- Carefully edited book celebrating the 60th birthday of Chris Byrnes and Anders Lindquist
- Has a celebrative flavour, and at the same time contains reference material for researchers interested in control theory

Fields of interest
Control, Robotics, Mechatronics; Systems Theory, Control

Target groups
Researchers, engineers, students in control

Discount group
P

Robust Computing with Nano-scale Devices

Progresses and Challenges

Robust Nano-Computing focuses on various issues of robust nano-computing, defect-tolerance design for nano-technology at different design abstraction levels. It addresses both redundancy- and configuration-based methods as well as fault detecting techniques through the development of accurate computation models and tools. The contents present an insightful view of the ongoing researches on nano-electronic devices, circuits, architectures, and design methods, as well as provide promising directions for future research.

Features
- Addresses the most critical issues for nano-computing
- Presents the latest research achievements
- Covers different design levels
- Provides comprehensive solutions and accurate models
- Initiates promising future research directions

From the contents

Fields of interest
Circuits and Systems; Nanotechnology; Processor Architectures

Target groups
This book will most interest the researchers and scientists in both academia and industry who relate with emerging nano-scale computing design, especially the ones that are concerned with circuit reliability and fault-tolerance solutions. It can be used as a reference book for researchers, as well as a textbook for university students

Discount group
P

Portfolio Analysis

From Probabilistic to Credibilistic and Uncertain Approaches

The most salient feature of security returns is uncertainty. The purpose of the book is to provide systematically a quantitative method for analyzing return and risk of a portfolio investment in different kinds of uncertainty and present the ways for striking a balance between investment return and risk such that an optimal portfolio can be obtained.

In classical portfolio theory, security returns were assumed to be random variables, and probability theory was the main mathematical tool for handling uncertainty in the past. However, the world is complex and uncertainty is varied. Randomness is not the only type of uncertainty in reality, especially when human factors are included. Security market, one of the most complex markets in the world, contains almost all kinds of uncertainty. The security returns are sensitive to various factors including economic, social, political and very importantly, people’s psychological factors.

Features
- Recent research results on portfolio analysis
- The State of the art of uncertainty methods – from probabilistic to credibilistic

Contents
What Is Portfolio Analysis.- Probabilistic Portfolio Selection.- Credibilistic Portfolio Selection.- Uncertain Portfolio Selection.- Model Varieties.

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

Target groups
Researchers, engineers, graduate students in fuzziness and soft computing

Discount group
P
Polystochastic Models for Complexity

This book is devoted to a domain of highest industrial and scientific interest, the complexity. The complexity understanding and management will be a main source of efficiency and prosperity for the next decades. Complex systems are assemblies of multiple subsystems and are characterized by emergent behavior that results by nonlinear interactions among the subsystems at multiple levels of organization. Evolvability that is the ability to evolve is the method to confront and surpass the successive boundaries of complexity. Evolvability is not biological but should be considered here in the sense that the corresponding systems have, at different levels, characteristics that are naturally associated to the living systems.

Features
► Interdisciplinary valuable reference for engineers, system scientists, mathematicians, entrepreneurs and investors facing complexity challenge
► Presents theoretical and practical aspects of the Polystochastic methodology incl case studies

Contents
Methods.- Physical and chemical systems.- Biosystems and bioinspired systems.- Systems sciences and cognitive systems.- Perspectives.

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

Target groups
Researchers, engineers, graduate students in applied nonlinear dynamics, and evolutionary studies

Discount group
P

K. Jones, L3-Communications TRL Technology, UK

The Regularized Fast Hartley Transform

Optimal Formulation of Real-Data Fast Fourier Transform for Silicon-Based Implementation in Resource-Constrained Environments

The Regularized Fast Hartley Transform provides the reader with the tools necessary to both understand the proposed new formulation and to implement simple design variations that offer clear implementational advantages, both practical and theoretical, over more conventional complex-data solutions to the problem. The highly-parallel formulation described is shown to lead to scalable and device-independent solutions to the latency-constrained version of the problem which are able to optimize the use of the available silicon resources, and thus to maximize the achievable computational density, thereby making the solution a genuine advance in the design and implementation of high-performance parallel FFT algorithms.

Features
► Describes direct solution to real-data DFT targeted at those real-world applications, such as mobile communications, where resources are limited
► Achieving computational density of most advanced commercially-available solutions for greatly reduced silicon resources

Fields of interest
Communications Engineering, Networks; Computer Communication Networks; Applications of Mathematics

Target groups
Practicing DSP engineers with an interest in the efficient hardware implementation of the real-data FFT as well as to academics/researchers/students from engineering, computer science and mathematics backgrounds with an interest in the design and implementation of sequential and parallel FFT algorithms

Discount group
P

J. Kacprzyk, Polish Academy of Sciences, Warsaw, Poland; F. E. Petry, U.S. Naval Research Laboratory, Stennis Space Center, MS, USA; A. Yazici, Middle East Technical University, Ankara, Turkey (Eds.)

Uncertainty Approaches for Spatial Data Modeling and Processing

A decision support perspective

This volume is dedicated to the memory of Professor Ashley Morris who passed away some two years ago. Ashley was a close friend of all of us, the editors of this volume, and was also a Ph.D. student of one of us. We all had a chance to not only fully appreciate, and be inspired by his contributions, which have had a considerable impact on the entire research community. Due to our personal relations with Ashley, we also had an opportunity to get familiar with his deep thinking about the areas of his expertise and interests. Ashley has been involved since the very beginning of his professional career in database research and practice. Notably, he introduced first some novel solution in database management systems that could handle imprecise and uncertain data, and flexible queries based on imprecisely specified user interests.

Features
► Presents recent research on uncertainty approaches for data modeling and decision making

From the contents

Fields of interest
Applied Mathematics/Computational Methods of Engineering; Artificial Intelligence (incl. Robotics)

Target groups
Researchers, engineers, graduate students in fuzziness and soft computing

Discount group
P
Modelling Diesel Combustion

With contributions by: Y. Shi, R. Reitz

This book is a detailed discussion of the Diesel Combustion phenomena like ignition delay, fuel air mixing, rate of heat release, and emissions of smoke, particulate and nitric oxide. The book enables quantitative evaluation of these important phenomena and parameters. Most importantly, it attempts to model them with constants that are independent of engine types. Thus, the models give insight into the phenomena and can be applied to a given engine by the research worker and design engineer.

Features
► This work recognizes the importance of the spray at the wall in precisely describing the heat release and emissions for most of the engines on and off road ► The work considers findings of the peers and adds the fruits of the authors’ research to arrive at the improved description of important phenomena. Later, it models the heat release and emissions ► Every model is thoroughly validated by detailed experiments

Fields of interest
Automotive Engineering; Pollution, general; Engineering Design

Target groups
Research workers, engine designers and developers, engine R&D

Discount group
P

Leonardo da Vinci’s Giant Crossbow

Although Leonardo’s Giant Crossbow is one of his most popular drawings, it has been one of the least understood. “Leonardo’s Giant Crossbow” offers the first in-depth account of this drawing’s likely purpose and its highly resolved design. This fascinating book has a wealth of technical information about the Giant Crossbow drawing, as it’s a complete study of this project, though this is as accessible to the general audience as much as it is also informative with new discoveries for the professors of engineering, technology and art. The book explores the context of Leonardo’s invention with an examination of the extensive documentary evidence, a short history of the great crossbow and ballista, the first accurate translation of the text and the technical specifications, and a detailed analysis of Leonardo’s design process for the crossbow, from start to finish.

Features
► Fascinating book on Leonardo da Vinci’s giant crossbow for professors and laymen ► The proportional method as a secret of Leonardo’s design success is shown for the first time, as well as a later date for the drawing and the overall practicability of Leonardo’s drawing ► Presents original research, preparatory drawings and new discoveries about the giant crossbow ► Written in a technical style ► The author is author of the bestseller the Treasures of Leonardo (in 10 languages, 123,000 copies sold since June 2006)

Fields of interest
Engineering Design; History of Science; Applied Mathematics/Computational Methods of Engineering

Target groups
Engineers, Roboticists, Scientists, everybody interested in Leonardo DaVinci’s students, professors, and researchers of the history of engineering, technology and art

Discount group
P

Software Engineering Research, Management and Applications 2009

The 7th ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2009) was held on Hainan Island, China from December 2 – 4. SERA ‘09 featured excellent theoretical and practical contributions in the areas of formal methods and tools, requirements engineering, software process models, communication systems and networks, software quality and evaluation, software engineering, networks and mobile computing, parallel/distributed computing, software testing, reuse and metrics, database retrieval, computer security, software architectures and modeling. Our conference officers selected the best 17 papers from those papers accepted for presentation at the conference in order to publish them in this volume. The papers were chosen based on review scores submitted by members or the program committee, and underwent further rigorous rounds of review.

Features
► Includes the best papers of the SERA 2009 to be held on December 2-4, 2009 in Haikou, China

From the contents

Fields of interest
Software Engineering Research, Management and Applications

Target groups
Engineers, researchers, and graduate students in computational intelligence and computer science

Discount group
P
Securing Wireless Communications at the Physical Layer

The book focuses on a recently emerging topic in security. Specifically, the book focuses on physical layer security. Whereas conventional security mechanisms involve cryptography that operates at higher layers of the protocol stack, the methods described in this book secure communications at the physical layer.

The area of physical layer security is an emerging field of research that has seen an explosion of research in the past few years. This trend is only expected to continue as there is a growing need to secure wireless communications without conventional cryptographic network security protocols. The proposed book will consist of contributions from roughly a dozen of the leading research groups in this emerging area. For the first time, important results will be collected together. Important topics will include the secrecy rate of MIMO wireless systems, practical codes for the dissemination of secrets, and authentication of wireless transmitters using waveform-level properties.

Features
- A collection of high-impact research results in the area of physical layer security will serve as a valuable compendium to any researcher interested in conducting research in physical layer security
- The book will be broken down into five sections, corresponding to major thematic areas related to physical layer security
- The editorial team will provide perspectives for the chapters in each section
- The two major forms of physical layer confidentiality will be covered—secrecy extraction and secrecy dissemination

Fields of interest
Communications Engineering, Networks; Signal, Image and Speech Processing; Data Structures, Cryptology and Information Theory

Target groups
Communications engineers, cryptographers and researchers interested in this emerging area of research

Discount group
P

Reliability of Microtechnology Interconnects, Devices and Systems

Reliability of Microtechnology discusses the reliability of microtechnology products from the bottom up, beginning with devices and extending to systems. The book's focus includes but is not limited to reliability issues of interconnects, the methodology of reliability concepts and general failure mechanisms. Specific failure modes in solder and conductive adhesives are discussed at great length. Coverage of accelerated testing, component and system level reliability, and reliability design for manufacturability are also described in detail.

Features
- Discusses the general failure mechanisms of microsystems on a component level
- Comprehensive coverage of solder joint reliability at the microsystems level
- Includes accelerated testing of solder joints at the microsystems level
- Discusses quality issues and manufacturing at the microsystems level

Contents

Fields of interest
Electronics and Microelectronics, Instrumentation; Optical and Electronic Materials; Quality Control, Reliability, Safety and Risk

Target groups
Researchers, packaging engineers, electronics engineers and design engineers

Discount group
P

Semantic Labeling of Places with Mobile Robots

During the last years there has been an increasing interest in the area of service robots. Under this category we find robots working in tasks such as elderly care, guiding, office and domestic assistance, inspection, and many more. Service robots usually work in indoor environments designed for humans, with offices and houses being some of the most typical examples. These environments are typically divided into places with different functionalities like corridors, rooms or doorways. The ability to learn such semantic categories from sensor data enables a mobile robot to extend its representation of the environment, and to improve its capabilities. As an example, natural language terms like corridor or room can be used to indicate the position of the robot in a more intuitive way when communicating with humans. This book presents several approaches to enable a mobile robot to categorize places in indoor environments.

Features
- Firsts book on semantic information about places using mobile robots
- Interesting example of how to use machine learning techniques with mobile robots to solve new problems

Contents

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

Target groups
Researchers, graduate students and professionals in robotics, service robotics

Discount group
P
Image Fusion
Theories, Techniques and Applications

This textbook provides a comprehensive introduction to the theories, techniques and applications of image fusion. It is aimed at advanced undergraduate and first-year graduate students in electrical engineering and computer science. It should also be useful to practicing engineers who wish to learn the concepts of image fusion and use them in real-life applications.

The book is intended to be self-contained. No previous knowledge of image fusion is assumed, although some familiarity with elementary image processing and the basic tools of linear algebra is recommended. The book may also be used as a supplementary text for a course on advanced image processing. Apart from two preliminary chapters, the book is divided into three parts.

Features
- Self-contained, easy accessible introduction to the hot area of image fusion
- Presents the most important topics in image fusion at a reasonable size
- Well-organized modern approach to theories and techniques, includes numerous case studies that illustrate the application of techniques for image fusion to real problems, providing hands-on knowledge

From the contents

Fields of interest
Signal, Image and Speech Processing; Image Processing and Computer Vision; Computational Intelligence

Target groups
Researchers, professional engineers and graduate students in image fusion, computer vision, image processing

Discount group
P

Efficient Modeling and Control of Large-Scale Systems

The complexity and dynamic order of controlled engineering systems is constantly increasing. Complex large scale systems (where “large” reflects the system’s order and not necessarily its physical size) appear in many engineering fields, such as, micro-electromechanisms, manufacturing, aerospace, civil engineering and power engineering. Modeling of these systems often result in very high-order models imposing great challenges to the analysis, design and control problems. Efficient modeling and control of large-scale systems will compile state-of-the-art contributions on recent novel analytical and computational methods for addressing the model reduction, performance analysis and feedback control design for such systems. Also addressed will be new theoretical developments, novel computational approaches and illustrative applications to various fields.

Features
- Covers state-of-the-art analytical and computational approaches for modeling/identification, performance analysis and control design of complex high-order systems
- Interdisciplinary focus emphasizing methods and approaches that can be commonly applied in various engineering fields

From the contents
An introduction to large-scale systems: challenges in modeling and control. - Subspace identification of a class of large-scale systems. - A survey of modeling and order reduction methods for large-scale systems. - Model predictive control for large scale systems. - An integrated design method for optimization and control of structural systems using linear matrix inequalities.

Fields of interest
Control, Robotics, Mechatronics; Vibration, Dynamical Systems, Control; Systems Theory, Control

Target groups
Practicing engineers, researchers and graduate students

Discount group
P

Contact Mechanics and Friction
Physical Principles and Applications

This application-oriented book introduces the associations between contact mechanics and friction and with it offers a deeper understanding of tribology. It deals with the associated phenomena of contact, adhesion, capillary forces, friction, lubrication, and wear from one consistent viewpoint. The author goes into (1) methods of rough estimation of tribological quantities, (2) methods for analytical calculations which attempt to minimize the necessary complexity, (3) the crossover into numerical simulation methods. With these methods the author conveys a consistent view of tribological processes in various scales of magnitude (from nanotribology to earthquake research). Also, system dynamic aspects of tribological systems, such as squeal and its suppression as well as other types of instabilities and spatial patterns are investigated.

Features
- The book presents the most important methods and results in the field of tribology and related fields
- Many applications in different scales from micro to mega and in different fields are shown: contact, adhesion, seals, capillarity, lubrication, friction, and abrasion of elastic, plastic, and visco-elastic bodies

Contents
Introduction. - Qualitative Treatment of Contact Problems. - Normal Contact without Adhesion. - Qualitative Treatment of Adhesive Contacts. - Capillary Forces. - Rigorous Treatment of Contact Problems - Hertz Contact. - Rigorous Treatment of Contact Problems - Adhesive Contact. - Contact between Rough Surfaces.

Fields of interest
Continuum Mechanics and Mechanics of Materials; Tribology, Corrosion and Coatings; Mechanical Engineering

Target groups
Engineers, graduate students and scientists in the field of tribology, machine design, materials science, bionics, micro and nano measuring techniques

Discount group
P
Human Centered Robot Systems
Cognition, Interaction, Technology

Human Centered Robot Systems must be able to interact with humans such that the burden of adaptation lies with the machine and not with the human. This book collates a set of prominent papers presented during a two-day conference on “Human Centered Robot Systems” held on November 19-20, 2009, in Bielefeld University, Germany. The aim of the conference was to bring together researchers from the areas of robotics, computer science, psychology, linguistics, and biology who are all focusing on a shared goal of cognitive interaction. A survey of recent approaches, the current state-of-the-art, and possible future directions in this interdisciplinary field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field is presented. It provides practitioners and scientists with an up-to-date introduction to this field.

Features
- Presents the state of the art of human centered robot systems
- Devoted to the interface of cognition and technology

From the contents

Fields of interest
Robotics and Automation; Computational Intelligence; Cognitive Psychology

Target groups
Researchers, engineers, graduate students in cognitive systems

Discount group
P

Applications of Neural Networks in High Assurance Systems

Features
- State of the art of Neural Networks in real-world, safety-critical systems
- Presents Neural Network applications in safety related areas, ranging from aerospace industry and steam power turbines to the automotive industry
- Provides a better understanding of the practical requirements for developing and deploying neuro-adaptive systems

Contents

Fields of interest
Appl.Mathematics/Computational Methods of Engineering; Artificial Intelligence (incl. Robotics); Automotive Engineering

Target groups
Researchers, engineers, graduate students in computational intelligence, design, industrial applications, automotive and aerospace industry

Discount group
P

Instabilities of Flows: With and Without Heat Transfer and Chemical Reaction

The articles in the book treat flow instability and transition starting with classical material dealt with in an innovative and rigorous way, some newer physical mechanisms explained for the first time and finally with the very complex topic of bombustion and two-phase flow instabilities.

Fields of interest
Engineering Fluid Dynamics; Automotive Engineering; Fluid- and Aerodynamics

Target groups
Engineers

Discount group
P
H. Sommer, Stuttgart

**Project Management for Building Construction**

35 Years of Innovation at Drees & Sommer

Without project management, the successful completion of major projects is no longer possible. This book describes all the basics with the help of many clear illustrations. In this edition the already very successful work has been complemented with contributions that take into account how communication and organization have become increasingly important in construction projects. The fact that land - municipal or private - now need to be prepared in a very focused manner to ensure its wise use and increase its value to reach is also considered, making the book of interest to project managers and construction experts who have realized that project development and comprehensive, integrated construction will be key issues in the future.

**Features**
- Includes detailed instructions for practical application
- Covers the full range of management and advice on design and renovation of buildings of all kinds

**Contents**

**Fields of interest**
Construction Management; Basics of Construction; Organization/Planning

**Target groups**
Practitioners in the field of construction

**Discount group**
P

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E. Szczerbicki, Gdansk University of Technology, Gdansk, Poland; N. T. Nguyen, Wroclaw University of Technology, Wroclaw, Poland (Eds.)

**Smart Information and Knowledge Management**

Advances, Challenges, and Critical Issues

New approaches are needed that could move us towards developing effective applicable intelligent systems for problem solving and decision making. One of the main efforts in intelligent systems development is focused on knowledge and information management which is regarded as the crucial issue in smart decision making support. The 14 Chapters of this book represent a sample of such effort. The overall aim of this book is to provide guidelines to develop tools for smart processing of knowledge and information. Still, the guide does not presume to give ultimate answers. Rather, it poses ideas and case studies to explore the complexities and challenges of modern knowledge management issues. It also encourages its reader to become aware of the multifaceted character of such issues.

**Features**
- Recent research on smart information and knowledge

**From the contents**

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

**Target groups**
Researchers, engineers, graduate students in computational intelligence, computer science

**Discount group**
P

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Y. Tenne, The University of Sydney, NSW, Australia; C. Goh, Agency for Science Technology and Research, Singapore (Eds.)

**Computational Intelligence in Expensive Optimization Problems**

In modern science and engineering, laboratory experiments are replaced by high fidelity and computationally expensive simulations. Using such simulations reduces costs and shortens development times but introduces new challenges to design optimization process. Examples of such challenges include limited computational resource for simulation runs, complicated response surface of the simulation inputs-outputs, and etc. Under such difficulties, classical optimization and analysis methods may perform poorly. This motivates the application of computational intelligence methods such as evolutionary algorithms, neural networks and fuzzy logic, which often perform well in such settings. This is the first book to introduce the emerging field of computational intelligence in expensive optimization problems.

**Features**
- First book to introduce the emerging field of computational intelligence in expensive optimization problems
- Provides both theoretical treatments and real-world insights gained by experience in computational intelligence in expensive optimization problems

**Contents**

**Fields of interest**
Applied Mathematics/Computational Methods of Engineering; Artificial Intelligence (incl. Robotics); Applications of Mathematics

**Target groups**
Researchers, engineers, graduate students in computational intelligence and computer science

**Discount group**
P
Advanced Flip Chip Packaging

Flip chip packaging is now in widespread use in computing, communications, consumer and automotive electronics. The flip chip packaging of today is drastically different from the technology of the 1990s. The demand for flip chip technology will continue to grow to meet the need for products that offer better performance, are smaller and are environmentally sustainable. “Advanced Flip Chip Packaging” presents past, present and future advances and trends in areas like substrate technology, material development and assembly processes.

Features
► Broad-ranging chapters with a focus on IC-package-system integration ► Provides viewpoints from leading industry executives and experts ► Details state-of-the-art achievements in process technologies and scientific research ► Presents a clear development history and touches on trends in the industry, while also discussing up-to-date technology information

Contents

Fields of interest
Electronics and Microelectronics, Instrumentation; Circuits and Systems; Optical and Electronic Materials

Target groups
Industrial electronics packaging engineers and academic researchers

Discount group
P

Parallel and Distributed Computational Intelligence

The objective in editing this book was to assemble a sample of the best work in parallel and distributed biologically inspired algorithms. The editors invited researchers in different domains to submit their work. They aimed to include diverse topics to appeal to a wide audience. Some of the chapters summarize work that has been ongoing for several years, while others describe more recent exploratory work. Collectively, these works offer a global snapshot of the most recent efforts of bioinspired algorithms’ researchers aiming at profiting from parallel and distributed computer architectures—including GPUs, Clusters, Grids, volunteer computing and p2p networks as well as multi-core processors. This volume will be of value to a wide set of readers, including, but not limited to specialists in Bioinspired Algorithms, Parallel and Distributed Computing, as well as computer science students trying to figure out new paths towards the future of computational intelligence.

Features
► Latest research in parallel and distributed computational intelligence

From the contents

Fields of interest
Appl.Mathematics/Computational Methods of Engineering; Artificial Intelligence (incl. Robotics)

Target groups
Engineers, researchers, and graduate students in computational intelligence and computer science

Discount group
P

An Analytical Approach to Optical Burst Switched Networks

This book presents the state of the art results on modeling and analysis of OBS networks. It provides researchers with new directions for future research and helps them gain a better understanding of modeling OBS networks. This book classifies all the literature on modeling and analysis of OBS networks and serves as a thought provoking material for the researchers working on the analysis of high-speed networks. The scope of this book however is not limited to OBS networks alone but extends to high-speed communication networks with limited or no buffers.

Features
► Discusses various architectures and applications of OBS networks ► Provides material on the theoretical models for OBS networks and helps the reader to gain a deeper understanding of these networks ► Includes material that is up-to-date and derived from the latest research publications in this field

Contents

Fields of interest
Communications Engineering, Networks; Computer Communication Networks; Microwave, RF and Optical Engineering

Target groups
Researchers working in the area of high-speed networks

Discount group
P

F. F. Vega, University of Extremadura, Merida, Spain; E. Cantú-Paz, Yahoo! Inc., Sunnyville, CA, USA (Eds.)

H. Tong, Y. Lai, Advanced Semiconductor Engineering, Inc., Kaohsiung, Taiwan; C. Wong, Georgia Institute of Technology, Atlanta, GA, USA (Eds.)

T. Venkatesh, Indian Institute of Technology Guwahati, India; C. S. Murthy, Indian Institute of Technology Madras, India
H. Yang, B. Jiang, Nanjing University of Aeronautics and Astronautics, Nanjing, China; V. Cocquempot, Université des Sciences et Technologies de Lille, France

**Fault Tolerant Control Design for Hybrid Systems**

This book intends to provide the readers a good understanding on how to achieve Fault Tolerant Control goal of Hybrid Systems. The book can be used as a reference for the academic research on Fault Tolerant Control and Hybrid Systems or used in Ph.D. study of control theory and engineering. The knowledge background for this monograph would be some undergraduate and graduate courses on Fault Diagnosis and Fault Tolerant Control theory, linear system theory, nonlinear system theory, Hybrid Systems theory and Discrete Event System theory.

**Features**
- Overviews the fault tolerant control design for hybrid systems
- Presents important theoretical results as well as their applications

**Contents**
Fault tolerant control and hybrid systems: Hybrid systems with time-dependent switching: Hybrid systems with state-dependent switching: Hybrid systems with impulsive and stochastic switching: Hybrid systems with discrete specifications: Hybrid control approach in FTC design: Conclusion and future research directions.

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

**Target groups**
Engineers, researchers, and students in control engineering

**Discount group**
P

M. Yoshimura, Kyoto University, Kyoto, Japan

**System Design Optimization for Product Manufacturing**

Readers of System Design Optimization for Product Manufacturing will learn about detailed concepts and practical technologies that enable successful product design and manufacture. These concepts and technologies are based on system optimization methodologies that consider a broad range of mechanical, as well as human, factors. System Design Optimization for Product Manufacturing explains the methodologies behind current and future product manufacture. Its detailed explanations of key concepts are relevant not only for product design and manufacture, but also for other business fields. These core concepts and methodologies can be applied to practically any field where informed decision-making is important, and where a range of often conflicting factors must be carefully weighed and considered.

System Design Optimization for Product Manufacturing can be used as a fundamental reference book by both engineers and students in the fields of manufacturing, design engineering, and product development.

**Features**
- Provides detailed explanations of fundamental ways of thinking about complex optimization problems
- Discusses advanced methodologies for the development of optimized product designs

**From the contents**
1. Progression of Product Manufacturing Technologies.
2. Evaluative Criteria for Product Manufacturing and Optimization Fundamentals.
3. Technologies for Product Manufacturing Innovation.
4. Involvement of People in Product Manufacturing.
5. Product Manufacturing Support Technologies.

**Fields of interest**
Manufacturing, Machines, Tools; Engineering Economics, Organization, Logistics, Marketing; Computer-Aided Engineering (CAD, CAE) and Design

**Target groups**
Engineers in product development, university researchers, researchers in industry, postgraduate students

**Discount group**
P

I. Zelinka, S. Celikovsky, H. Richter, G. Chen, (Eds.)

**Evolutionary Algorithms and Chaotic Systems**

This book discusses the mutual intersection of two interesting fields of research, i.e. deterministic chaos and evolutionary computation. Evolutionary computation which are able to handle tasks such as control of various chaotic systems and synthesis of their structure are explored, while deterministic chaos is investigated as a behavioral part of evolutionary algorithms. This book is targeted for a number of audiences. Firstly, it will be an instructional material for senior undergraduate and entry-point graduate students in computer science, physics, applied mathematics, and engineering, who are working in the area of deterministic chaos and evolutionary algorithms. Secondly, researchers who desire to know as to how to apply evolutionary techniques on chaos control as well as researchers interested in the emergence of chaos in evolutionary algorithms will find this book a very useful tool and starting point.

**Features**
- Puts together for the first time applications of Evolutionary Algorithms for the detection, evaluation, synthesis, mimic and control of chaotic systems
- Presents a very compact and highly evaluated bunch of research tools which can be used by students, researchers and professionals in the field of chaotic systems
- Includes a preface by Leon Chua

**From the contents**
Part I Theory.
- Motivation for application of evolutionary computation to chaotic Systems.
- Evolutionary algorithms for chaos researchers.
- Chaos theory for evolutionary algorithms researchers.
- Evolutionary Algorithms and the Edge of Chaos.

Part II Applications.
- Evolutionary design of chaos control in 1D.

**Fields of interest**
Computational Intelligence; Complexity; Statistical Physics, Dynamical Systems and Complexity

**Target groups**
Researchers, engineers, graduate students in computational intelligence, complexity computer science

**Discount group**
P
Medical Image Reconstruction
A Conceptual Tutorial

“Medical Image Reconstruction: A Conceptual Tutorial” introduces the classical and modern image reconstruction technologies, such as two-dimensional (2D) parallel-beam and fan-beam imaging, three-dimensional (3D) parallel ray, parallel plane, and cone-beam imaging. This book presents both analytical and iterative methods of these technologies and their applications in X-ray CT (computed tomography), SPECT (single photon emission computed tomography), PET (positron emission tomography), and MRI (magnetic resonance imaging). Contemporary research results in exact region-of-interest (ROI) reconstruction with truncated projections, Katsevich’s cone-beam filtered backprojection algorithm, and reconstruction with highly undersampled data with l0-minimization are also included.

This book is written for engineers and researchers in the field of biomedical engineering specializing in medical imaging and image processing with image reconstruction.

Features
► Clearly explains the concepts with minimum mathematical derivation
► Written in reader-friendly style
► Helps the readers to understand modern image reconstruction algorithms with little background
► Provides more than 140 illustrations
► Presents up-to-date results in analytical and iterative image reconstruction

Fields of interest
Biomedical Engineering; Imaging / Radiology; Appl.Mathematics/Computational Methods of Engineering

Target groups
Engineers and researchers in the field of biomedical engineering with medical imaging specialty, and image processing with image reconstruction specialty

Discount group
P

Virtual Decomposition Control
Toward Hyper Degrees of Freedom Robots

Driven by the need to achieve superior control performances for robots with hyper degrees of freedom, the virtual decomposition control approach is thoroughly presented in this book. This approach uses subsystem (such as links and joints of a complex robot) dynamics to conduct control design, while guaranteeing the stability and convergence of the entire complex robot without compromising the rigorousness of the system analysis. The central concept of this approach is the definition of the virtual stability. The stability of the entire complex robot is mathematically equivalent to the virtual stability of every subsystem. This fact allows us to convert a large problem to a few simple problems with mathematical certainty.

This book comprises fourteen chapters. The first five chapters form the foundation of this approach. The remaining nine chapters are relatively independent.

Features
► The most up-to-date on virtual decomposition control

From the contents

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

Target groups
Researchers, engineers, graduate students in robotics

Discount group
P
Electronic Structure of Strongly Correlated Materials

Electronic structure and physical properties of strongly correlated materials containing elements with partially filled 3d, 4d, 4f and 5f electronic shells is analyzed by Dynamical Mean-Field Theory (DMFT). DMFT is the most universal and effective tool used for the theoretical investigation of electronic states with strong correlation effects. In the present book the basics of the method are given and its application to various material classes is shown. The book is aimed at a broad readership: theoretical physicists and experimentalists studying strongly correlated systems. It also serves as a handbook for students and all those who want to be acquainted with fast developing filed of condensed matter physics.

Features
► Covers the major developments in the theory of the electronic structure of strongly correlated materials ► Integrates various theoretical models, such as electronic structure calculation, Hubbard model, dynamic mean-field theory, Anderson model ► Provides a useful theoretical basis for scientists and graduate students alike

Contents
Introduction.- Electronic Structure Calculations in One-Electron Approximation.- Hubbard Model in Dynamical Mean-Field Theory (DMFT).- DMFT Extensions.- Periodic Anderson Model (PAM).- Electronic Structure Calculations for Real Materials by LDA and DMFT Method.- Conclusion.

Fields of interest
Optical and Electronic Materials; Condensed Matter Physics. Microwaves, RF and Optical Engineering

Target groups
Scientists and graduate students

Discount group
P

b-Quark Physics with the LEP Collider

The Development of Experimental Techniques for b-Quark Studies from Z-Decay

The book reviews the unexpected impact that the LEP experiments have had on the subject of b-quark physics. The emphasis is firmly on telling the story from an experimental viewpoint. Aspects of the detectors that were essential for the reconstruction of b-hadrons are highlighted, especially the role played by silicon strip detectors and particle identification methods. The importance of solving practical issues such as detector alignment and track reconstruction to fully realize the reconstruction potential of the detectors is demonstrated along with various examples of potential problems when these aspects are not well controlled. Barker details new ideas and analysis techniques that evolved during the years of LEP running so that the information is useful to new researchers or those putting together plans for future b-physics experiments.

Features
► Comprehensive description of experimental methods

Contents

Fields of interest
Particle and Nuclear Physics; Particle Acceleration and Detection, Beam Physics

Target groups
Scientists working in this field

Discount group
P

Magnetism and Synchrotron Radiation

New Trends

Advances in the synthesis of new materials with often complex, nano-scaled structures require increasingly sophisticated experimental techniques that can probe the electronic states, the atomic magnetic moments and the magnetic microstructures responsible for the properties of these materials.

At the same time, progress in synchrotron radiation techniques has ensured that these light sources remain a key tool of investigation, e.g. synchrotron radiation sources of the third generation are able to support magnetic imaging on a sub-micrometer scale.

With the Fifth Mittelwihr School on Magnetism and Synchrotron Radiation the tradition of teaching the state-of-the-art on modern research developments continues and is expressed through the present set of extensive lectures provided in this volume. While primarily aimed at postgraduate students and newcomers to the field, this volume will also benefit researchers and lecturers actively working in the field.

From the contents

Fields of interest
Magnetism, Magnetic Materials; Particle Acceleration and Detection, Beam Physics; Solid State Physics

Target groups
Researchers

Discount group
P
Introduction to Complex Plasmas

Complex plasmas differ from traditional plasmas in many ways: these are low-temperature high pressure systems containing nanometer to micrometer size particles which may be highly charged and strongly interacting. The particles may be chemically reacting or be in contact with solid surfaces, and the electrons may show quantum behaviour. These interesting properties have led to many applications of complex plasmas in technology, medicine and science. Yet complex plasmas are extremely complicated, both experimentally and theoretically, and require a variety of new approaches which go beyond standard plasma physics courses. This book fills this gap presenting an introduction to theory, experiment and computer simulation in this field. Based on tutorial lectures at a very successful recent Summer Institute, the presentation is ideally suited for graduate students, plasma physicists and experienced undergraduates.

Features

► Covers the major developments in theoretical and experimental physics of complex plasmas
► Integrates plasma and surface science ► Both a study text for graduate students and a reference work for researchers

From the contents


Fields of interest

Target groups
Academic libraries, graduate students, scientists, practitioners

Discount group
P

Stability and Chaos in Celestial Mechanics

This book presents classical celestial mechanics and its interplay with dynamical systems in a way suitable for advance level undergraduate students as well as postgraduate students and researchers. First paradigmatic models are used to introduce the reader to the concepts of order, chaos, invariant curves, cantori. Next the main numerical methods to investigate a dynamical system are presented. Then the author reviews the classical two-body problem and proceeds to explore the three-body model in order to investigate orbital resonances and Lagrange solutions. In rotational dynamics the author details the derivation of the rigid body motion, and continues by discussing related topics, from spin-orbit resonances to dumbbell satellite dynamics.

Features

► Provides a comprehensive survey of the tools of celestial mechanics from classical theories to modern methods ► Presents a variety of useful computer – assisted techniques with practical examples of applications ► Demonstrates the interplay between classical celestial mechanics and the modern tools of dynamical systems ► Gives useful examples for the constructive implementation of perturbation theory

Fields of interest
Extraterrestrial Physics, Space Sciences; Astrophysics and Astroparticles; Mechanics

Target groups
Graduate students, researchers

Discount group
P

Planetary Magnetism

The articles in this volume cover, for the first time, all aspects of planetary magnetism, from the observations made by space missions to their interpretation in terms of the properties of all the planets in the solar system. Studies of dynamo-generated magnetic fields in Mercury, the Earth, the giant planets, as well as in Ganimede, one of Jupiter's moons, are presented. Crustal magnetic field in Mars, the Mon and the Earth are described as well as magnetic fields induced in the solar system bodies. There are several articles dealing with dynamo theory and modelling and applications to the different planets.

Features

► First comprehensive review of planetary magnetism, planetary dynamos and the interiors of planets ► Covers all aspects of the planets' magnetic fields and how they are generated ► Contributions from those who first explored the planets and explained their magnetism

From the contents


Fields of interest
Extraterrestrial Physics, Space Sciences; Planetary etology

Target groups
Researchers and graduate students in the fields of planetary science and space science

Discount group
P
Lectures on Cosmology
Accelerated Expansion of the Universe

The lectures that four authors present in this volume investigate core topics related to the accelerated expansion of the Universe. The first lecture covers the inflationary period in the very early Universe. The second lecture revolves around the accelerated expansion of the late Universe at redshifts $z < 1$ due to the enigmatic dark energy that is commonly interpreted as a cosmological constant. The discovery of this accelerated expansion relied on data from type Ia supernovae, so this second lecture is dedicated to the astrophysics of type Ia supernovae and their role in cosmological observations. The third lecture, which seeks alternative explanations of dark energy, deals with modified gravity models based on a cosmological constant or its time-dependent counterparts arising from a scalar field. And the fourth lecture discusses currently available statistical methods that are indispensable for the analysis of cosmological data, thus making them necessary prerequisites for many of the results of modern cosmological research.

Features
► Provides pedagogically written introductions to cosmological topics related to expansion of the universe
► Contains an overview of statistical methods applied in cosmology

Contents

Fields of interest
Cosmology; Astrophysics and Astroparticles; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences

Target groups
Researcher and professionals

Discount group P

Line Groups in Physics
Theory and Applications to Nanotubes and Polymers

This volume gives a detailed and up-to-date overview of the line groups, the groups that describe the symmetry of quasi-one dimensional crystals. Nanotubes, nanowires, nanosprings, nanorods, and polymers are examples remarkable enough to have kept nanoscience as a leading field within material science and solid state physics for more than fifteen years now. The authors present the mathematical foundations, including classifications of the line groups, quasi one-dimensional crystals and quantum numbers, together with important applications. Extensive illustrations related to the physics of nanotubes make the book essential reading in this field above all. The book clearly demonstrates how symmetry is a most profound property of nature and contains valuable results that are published here for the first time.

Features
► First book explicitly devoted to Line Groups
► Detailed and up-to-date presentation
► Draws attention to useful techniques
► Will aid progress in theoretical understanding

Fields of interest
Theoretical, Mathematical and Computational Physics; Nanotechnology; Polymer Sciences

Target groups
Scientists, graduate students, lecturers, academic libraries

Discount group P

Quantum Signatures of Chaos

This by now classic text provides an excellent introduction and survey to the continuously expanding field of quantum chaos. The topics treated include a detailed exploration of the quantum aspects of nonlinear dynamics, quantum criteria to distinguish regular and irregular motion, antiunitary symmetries (generalized time reversal), random matrix theory and a thorough account of the quantum mechanics of dissipative systems. Each chapter is accompanied by a selection of problems which will help the newcomer to test and deepen his/her understanding and to acquire an active command of the methods presented.

In addition to a significant number of smaller revisions and chapter updates, the third edition thoroughly expands on the understanding of universal spectral fluctuations, and – to subsequently make the presentation of all semi-classical developments self-contained – a new chapter on classical Hamiltonian chaos has been inserted.

Features
► Fully updated and expanded 3rd edition of a now classic text.
► Presents new material on classical Hamiltonian chaos to make the presentation of all semi-classical developments self-contained.
► Provides an excellent introduction and survey to the continuously expanding field of quantum chaos.

Contents

Fields of interest
Statistical Physics, Dynamical Systems and Complexity; Quantum Physics; Mathematical Methods in Physics

Target groups
Researchers and students in quantum physics and nonlinear dynamics

Discount group P
Planets in Binary Star Systems

The discovery of extrasolar planets over the past decade has had major impacts on our understanding of the formation and dynamical evolution of planetary systems. There are features and characteristics unseen in our solar system and unexplainable by the current theories of planet formation and dynamics. Among these new surprises is the discovery of planets in binary and multiple-star systems. The discovery of such “binary-planetary” systems has confronted astrophysicists with many new challenges, and has led them to re-examine the theories of planet formation and dynamics. Among these challenges are: How are planets formed in binary star systems? What would be the notion of habitability in such systems? Under what conditions can binary star systems have habitable planets? How will volatiles necessary for life appear on such planets?

Features

► This volume presents the reader with the current state of the research on the detection and formation of planets in binary stars, written by teams of experts on these topics.

Contents


Fields of interest

Astronomy, Observations and Techniques; Planetary Science Library, Volume 366) Hardcover

Target groups

Researchers

Discount group

P

Physics and Astronomy

Due January 2010

 isbn 978-90-481-8686-0

Ubiquitous Quantum Structure

From Psychology to Finance

Quantum-like structure is present practically everywhere. Quantum-like (QL) models, i.e. models based on the mathematical formalism of quantum mechanics and its generalizations can be successfully applied to cognitive science, psychology, genetics, economics, finances, and game theory. This book is not about quantum mechanics as a physical theory. The short review of quantum postulates is therefore mainly of historical value: quantum mechanics is just the first example of the successful application of non-Kolmogorov probabilities, the first step towards a contextual probabilistic description of natural, biological, psychological, social, economical or financial phenomena. A general contextual probabilistic model (Växjö model) is presented. It can be used for describing probabilities in both quantum and classical (statistical) mechanics as well as in the above mentioned phenomena.

Features


Contents


Fields of interest

Quantum Physics; Probability Theory and Stochastic Processes; Economic Theory

Discount group

P

Physics and Astronomy

Cold Atoms in Optical Lattices

This book will describe recent theoretical advances of cold atom physics in optical lattices, concentrating on strongly correlated systems and possible applications in quantum information processing. Furthermore, the latest experiments aiming towards realizing these theoretical ideas will be discussed. The book will present in detail recently developed quantum optical tools for manipulating atoms in optical lattices and show how they can be used to realize a large range of well controlled many body Hamiltonians. Connections and differences to standard condensed matter physics will be explained. Finally, it will discuss how the ability to dynamically change parameters in these Hamiltonians on time scales much shorter than typical decoherence times can be exploited to realize quantum information processing devices with neutral atoms in optical lattices.

Features

► The only monograph dedicated solely to this topic.

Contents


Fields of interest

Physics, general; Quantum Gases and Condensates; Condensed Matter Physics

Target groups

Senior researchers and postgraduate level students in atomic, molecular and optical physics, also condensed matter physics and quantum information.

Discount group

P

Physics and Astronomy

Due June 2010

Jointly published with Canopus Academic Publishing Limited, UK

isbn 978-90-481-8688-4
Light Scattering Reviews 5
Single Light Scattering and Radiative Transfer

Features
- Summarizes recent developments in the fields of light scattering media optics and radiative transfer
- Provides an up to date review of modern single and multiple light scattering theory
- Focuses on radiative transfer and optics of highly reflective objects, such as snow and ice
- Uniquely covers numerical techniques in single and multiple light scattering
- Considers both theoretical and experimental results

From the contents

Fields of interest
Environmental Physics; Remote Sensing/Photogrammetry; Meteorology/Climatology

Target groups
Post-doctoral researchers and scientists working in light scattering optics and its applications in the environmental sciences

Discount group
P

Dark Matter and Dark Energy
This book developed from a doctoral school sponsored by the Italian Society of General Relativity and Gravitation, and brings together contributions from leading international authorities in the field to provide a review of the developments in the study of dark matter and dark energy, as seen from both their cosmological and particle physics side. Studying the physical and astrophysical properties of the dark components of our Universe is a crucial step towards the ultimate goal of unveiling their nature. The book starts with a concise introduction to the standard cosmological model, as well as with a presentation of the theory of linear perturbations around a homogeneous and isotropic background. It covers the particle physics and cosmological aspects of dark matter and (dynamical) dark energy, including a discussion of how modified theories of gravity could provide a possible candidate for dark energy.

Features
- Reviews both from an observational and theoretical perspective the status of research on the dark components of our universe
- Includes a compact introduction to cosmological perturbation theory, which is a fundamental ingredient to understand some of the main observational probes of dark matter and dark energy in the universe

Fields of interest
Classical and Quantum Gravitation, Relativity Theory; Elementary Particles, Quantum Field Theory; Astrophysics and Astroparticles

Target groups
Researchers and graduate students in the fields of physics, astronomy, cosmology, and mathematics, as well as (astro)particle physics and general relativity

Discount group
P

Interstellar Boundary Explorer (IBEX)
The Interstellar Boundary Explorer (IBEX) is a small explorer mission with the sole, focused science objective to discover the global interaction between the solar wind and the interstellar medium. IBEX is designed to achieve this objective by answering four fundamental science questions: What is the global strength and structure of the termination shock? How are energetic protons accelerated at the termination shock? What are the global properties of the solar wind flow beyond the termination shock and in the heliopause? How does the interstellar flow interact with the heliosphere beyond the heliopause? The answers to these questions rely on IBEX's unique data produced by IBEX.

Features
- Provides the basis for the interpretation of IBEX mission data
- Reveals the need for the unique data produced by IBEX
- Details the development of the elements of the IBEX flight system

Contents

Fields of interest
Extraterrestrial Physics, Space Sciences; Planetary Science

Target groups
Researchers and graduate students working in Earth and space sciences; investigators of solar-terrestrial interactions

Discount group
P

Earth and Environmental Science

Due February 2010

Jointly published with Praxis Publishing, UK

2010. 500 p. (Springer Praxis Books / Environmental Sciences) Hardcover

$209.00
ISBN 978-3-642-10335-3

Physics and Astronomy

Due February 2010

Jointly published with Canopus Academic Publishing Limited, UK


approx. $159.00

Due January 2010

Only available in print

Reprinted from SPACE SCIENCE REVIEWS, Vol. 146/1-4, 2009


$159.00
ISBN 978-1-4419-1447-7
Materials Science

Due February 2010

2010. Approx. 500 p. 365 illus., 5 in color.
(Graduate Texts in Physics) Hardcover

$79.95
ISBN 978-3-642-10490-9

Physics and Astronomy

Due March 2010

2010. XII, 300 p. (Lecture Notes in Physics, Volume 799) Hardcover

$89.95
ISBN 978-3-642-05410-5
T. Stanev, University of Delaware, Newark, DE, USA

High Energy Cosmic Rays

Cosmic rays are an essential part of the universe. Their origin is related to many important astrophysical processes, such as star formation, stellar evolution, supernova explosions and the state of interstellar matter in the Galaxy. Cosmic Ray Physics reviews our present knowledge of cosmic rays, describing how they are born in a wide range of cosmic processes, how they are accelerated and how they interact with matter, magnetic fields and radiation during their journey across the Galaxy. The book also describes the detection of cosmic rays, and the processes which take place, both at the top and within the Earth's atmosphere. The author also describes the very important area of the underground detection of very high energy cosmic rays and particles such as neutrinos.

Features

- Second edition of successful textbook
- Draws on the author's 30 years of research experience, working in the field of cosmic ray research
- Considers the very latest and most exciting topics in cosmic ray research
- Considers both theoretical aspects and experimental techniques
- Presents the very latest experimental results for cosmic ray measurements above and in the atmosphere, at the Earth's surface, and underground

Fields of interest

Astrophysics and Astroparticles; Astronomy, Observations and Techniques; Extraterrestrial Physics, Space Sciences

Target groups

Advanced undergraduate and graduate students and astronomers, high energy astrophysicists, physicists

Discount group

P

Due February 2010

Only available in print

Jointly published with Praxis Publishing Ltd., UK


$159.00
ISBN 978-3-540-85147-9

A. A. Ungar, North Dakota State University, Fargo, ND, USA

Hyperbolic Triangle Centers

The Special Relativistic Approach

After A. Ungar had introduced vector algebra and Cartesian coordinates into hyperbolic geometry in his earlier books, along with novel applications in Einstein's special theory of relativity, the purpose of his new book is to introduce hyperbolic barycentric coordinates, another important concept to embed Euclidean geometry into hyperbolic geometry. It will be demonstrated that, in full analogy to classical mechanics where barycentric coordinates are related to the Newtonian mass, barycentric coordinates are related to the Einsteinian relativistic mass in hyperbolic geometry. Contrary to general belief, Einstein's relativistic mass hence meshes up extraordinarily well with Minkowski's four-vector formalism of special relativity. In Euclidean geometry, barycentric coordinates can be used to determine various triangle centers.

Features

- Continuation of A. Ungar successful work on hyperbolic geometry, now with introduction of hyperbolic barycentric coordinates
- Proves how, contrary to general belief, Einstein's relativistic mass meshes up well with Minkowski's four-vector formalism of special relativity
- Sets the ground for investigating hyperbolic triangle centers numerically with respect to its hyperbolic triangle vertices

From the contents


Fields of interest

Classical and Quantum Gravitation, Relativity Theory; Astronomy, Astrophysics and Cosmology; Mathematical and Computational Physics

Target groups

Upper undergraduate and graduate students as well as researchers in geometry, algebra, theoretical physics and astronomy

Discount group

P

Due June 2010

Physics and Astronomy

R. Vaas, University of Gießen, Germany (Ed.)

Beyond the Big Bang

Competing Scenarios for an Eternal Universe

The Big Bang model is now both theoretically and empirically well established, although it does not explain the mystery of the very beginning of our universe. Over recent years, however, new developments open up the exciting prospect of going “beyond” the Big Bang and even of finding a physical explanation for it. Surprisingly, the ancient idea of a past-eternal universe is being revived, but a variety of other fascinating new approaches -- from the Holographic Universe to Cosmic Natural Selection -- are also being pursued. This book provides an up-to-date overview of each of these competing scenarios with original contributions from the world’s leading researchers in cosmology, who describe their own work and results in a manner understandable even to non-specialists.

“...the stellar line-up of contributors to this volume are working at the cutting edge of cosmological research, and are poised to take our understanding of the universe beyond the big bang into an even stranger realm.” - Paul Davies.

Features

- The first publication to gather and compare the various scenarios proposed to explain the Big Bang
- Written by the leading protagonists, many of them originators of the theories
- Clear presentation accessible also to non-specialists
- Carefully edited to avoid redundancy, fine tuned to bring out the parallels in the different approaches

Fields of interest

Classical and Quantum Gravitation, Relativity Theory; Astronomy, Astrophysics and Cosmology; Popular Science in Astronomy

Target groups

Scientists, cosmologists, theoretical physicists, students of physics, astronomy/cosmology, philosophy of science, philosophers, some theologians, teachers, laymen interested in astronomy and cosmology, popular science fans seeking a deeper understanding

Discount group

P

Due May 2010

Physics and Astronomy
Advances in Polymer Science


Volume 224

W. Meier, W. Knoll (Eds.)

Polymer Membranes/ Biomembranes

Features
- Highest Impact Factor of all publications ranked by ISI within Polymer Science
- Short and concise reports on physics and chemistry of polymers, each written by the world renowned experts
- Still valid and useful after 5 or 10 years
- The electronic version is available free of charge for standing order customers at: springer.com/series/12/

Contents

Fields of interest
Polymer Sciences; Lipidology; Biomaterials

Target groups
Academic and industrial researchers, libraries in polymer science, material science and solid state physics

Discount group
P

Bauding Uncertainty in Civil Engineering

Theoretical Background

In engineering contexts, random sets are useful when there is scarce or imprecise information as well as when a model for the engineering system is imprecise (e.g., discretization errors, different competing models, upper and lower bounds in limit analysis). Random sets generalize the concept of random variables from point measures to set measures; equivalently, they embody a convex set of probability measures.

Taking an engineering approach rather than a mathematical one, Random Sets in Civil Engineering is a gentle introduction to the subject that does not require advanced mathematical knowledge. Basic ideas and methods are presented and demonstrated with the aid of simple worked-out examples and suggested problems. Connections are clarified to the more general theory of imprecise probabilities and to other non classical models of uncertainty and approximate reasoning in decision making (e.g., fuzzy sets and evidence theory).

Features
- Basic ideas and methods of Random Sets in Civil Engineering are presented with the aid of simple worked-out examples and suggested problems
- Useful as reference for practicing engineers involved in planning, design, construction and management of civil infrastructures, as well as a graduate-level textbook

Contents
Motivation. - Review of Theory of Probability and Notation. - Random sets and imprecise probabilities. - Random relations. - Inclusion and mappings of random sets/relations. - Approximate reasoning.

Fields of interest
Continuum Mechanics and Mechanics of Materials; Structural Mechanics; Geotechnical Engineering

Target groups
Researchers and graduate students in mechanical and civil engineering

Discount group
P

Springer Handbook of Nanotechnology

Since 2004 and with the 2nd edition in 2006, the Springer Handbook of Nanotechnology has established itself as the definitive reference in the nanoscience and nanotechnology area. It integrates the knowledge from nanofabrication, nanodevices, nanomechanics, Nanotribology, materials science, and reliability engineering in just one volume. Beside the presentation of nanostructures, micro/nanofabrication, and micro/nanodevices, special emphasis is on scanning probe microscopy, nanotribology and nanomechanics, molecularly thick films, industrial applications and microdevice reliability, and on social aspects. In its 3rd edition, the book grew from 8 to 9 parts now including a part with chapters on biomimetics. More information is added to such fields as bionanotechnology, nanorobotics, and (bio)MEMS/NEMS, bio/nanotribology and bio/nanomechanics.

Features
- 3rd edition of this successful handbook
- 2nd edition also on DVD-ROM
- New part with a focus on biomimetics
- Updated with focus on bionanotechnology

From the contents
Forewords by Neal Lane, James R. Heath, Subra Suresh.
- Introduction to Nanotechnology
- Nanostuctures, Micro/Nanofabrication and Materials
- MEMS/NEMS and BioMEMS/NEMS
- Scanning-Probe Microscopy
- Bio/Nanotribology and Bio/Nanomechanics
- Molecularly Thick Films for Lubrication
- Biomimetics
- Industrial Applications
- Micro/Nanodevice Reliability

System requirements
For PC und Mac. For the complete system requirements see: springer.com

Fields of interest
Nanotechnology and Microengineering; Tribology, Corrosion and Coatings; Continuum Mechanics and Mechanics of Materials

Target groups
Researchers and engineers, students

Discount group
P

Chemistry and Materials Science

Due January 2010

2010, XII, 238 p. Hardcover
- $249.00
ISBN 978-3-642-10478-7

Engineering

Due March 2010

2010, Approx. 350 p. Hardcover
- $169.00
ISBN 978-3-642-11189-1

B. Bhushan, Ohio State University, Columbus, OH, USA (Ed.)

Springer Handbook of Nanotechnology

Due April 2010

- approx. $199.00
ISBN 978-3-642-02524-2
Handbook of Thin Film Technology

Features
- Practical handbook with a focus on the methods of thin film generation and measurement
- Can be used as a reference as well as for self-study
- Includes also an introduction to the physical foundations and applications in nanotechnology

Contents

Fields of interest
Surfaces and Interfaces, Thin Films; Characterization and Evaluation of Materials; Operating Procedures, Materials Treatment

Target groups
Professionals and students

Discount group
P

Solid Electrolytes: Materials, Properties, and Applications

Solid electrolytes or superionics are materials which exhibit exceptionally high values of ionic conductivity due to the rapid diffusion of one ionic species through a lattice formed by immobile counterions. Originally studied by Faraday in the 1830s, and for many years considered little more than scientific curiosities, ionically conducting solids are now a widely studied class of materials with important technological applications within solid state batteries, gas sensors and fuel cells. This book aims to provide an introduction to solid electrolytes and their historical development. A detailed summary of the major families of superionic compounds will be presented, with particular emphasis on the most important examples. An assessment of our current understanding of the relationship between the crystal structure of superionics and their bulk conduction processes will be given, permitting a discussion of the factors which promote rapid ionic motion within solids.

Features
- The book will focus primarily on the superionic materials themselves, rather than the techniques used to study them or their various technological applications, which allows their conducting properties to be discussed from both the fundamental (ionic diffusion processes) and the more applied (device) points of view
- Highlighting the complementary between the microscopic behaviour and macroscopic properties

Fields of interest
Solid State Physics; Spectroscopy and Microscopy; Optical and Electronic Materials

Target groups
Scientists and researchers in solid state chemistry, physics and materials science, also with relevance to aspects of earth science and engineering

Those working in more applied areas of the topic

Discount group
P

Introduction to Frustrated Magnetism

Materials, Experiments, Theory

The field of highly frustrated magnetism has developed considerably and expanded over the last 15 years. Issuing from canonical geometric frustration of interactions, it now extends over other aspects with many degrees of freedom such as magneto-elastic couplings, orbital degrees of freedom, dilution effects, and electron doping. Its is thus shown here that the concept of frustration impacts on many other fields in physics than magnetism. This book represents a state-of-the-art review aimed at a broad audience with tutorial chapters and more topical ones, encompassing solid-state chemistry, experimental and theoretical physics.

Features
- Only book dealing with all aspects of frustrated magnetism
- Integrates basic physics and related topics
- Appeals to researchers and graduate students alike

From the contents

Fields of interest
Magnetism, Magnetic Materials; Structural Materials; Engineering, general

Target groups
Scientists, graduate students and academic libraries

Discount group
P
Fundamentals of III-V Semiconductor MOSFETs

Fundamentals of III-V Semiconductor MOSFETs presents the fundamentals and current status of research of compound semiconductor metal-oxide-semiconductor field-effect transistors (MOSFETs) that are envisioned as a future replacement of silicon in digital circuits. The material covered begins with a review of specific properties of III-V semiconductors and available technologies making them attractive to MOSFET technology, such as band-engineered heterostructures, effect of strain, nanoscale control during epitaxial growth. Due to the lack of thermodynamically stable native oxides on III-V’s such as SiO2 on Si, high-k oxides are the natural choice of dielectrics for III-V MOSFETs.

Features
- A comprehensive overview of III-V compound semiconductor MOSFETs and the most recent breakthroughs
- The commercialization of compound semiconductor MOSFETs
- Fundamental and technological aspects of high-k oxides as a natural choice for III-V MOSFETs and the challenges faced when using high-k oxides

From the contents
Towards III-V digital MOSFET circuits. - Physics of compound semiconductors: band-engineered heterostructures and strain effects. - Physics and modeling of compound semiconductor MOSFETs. - P-channel MOSFETs. - Compound semiconductor technology: MBE and MOCVD. - Properties and trade-offs of compound semiconductor MOSFETs. - Electronic structure and properties of high-k gate oxides.

Fields of interest
Circuits and Systems; Solid State Physics; Spectroscopy and Microscopy

Target groups
Engineers engaged in frontier semiconductor materials and electronics, and graduate students in electrical engineering, materials science and engineering, materials physics and chemistry

Discount group
P

Solid-State Physics
Introduction to the Theory

Learning Solid State Physics involves a certain degree of maturity, since it involves tying together diverse concepts from many areas of physics. The objective is to understand, in a basic way, how solid materials behave. To do this one needs both a good physical and mathematical background. One definition of Solid State Physics is it is the study of the physical (e.g. the electrical, dielectric, magnetic, elastic, and thermal) properties of solids in terms of basic physical laws. In one sense, Solid State Physics is more like chemistry than some other branches of physics because it focuses on common properties of large classes of materials. It is typical that Solid State Physics emphasizes how physics properties link to electronic structure. We have retained the term Solid Modern solid state physics came of age in the late thirties and forties and is now part of condensed matter physics which includes liquids, soft materials, and non-crystalline solids.

Features
- 2nd edition of a successful textbook
- Presents the rich teaching experience of two gifted professors
- Covers the important basic aspects of the entire field of solid state physics
- Comes with a 200 pages manual of exercises and solutions to support learning and teaching
- Very valuable graduate textbook

From the contents

Fields of interest
Condensed Matter Physics; Solid State Physics; Spectroscopy and Microscopy

Target groups
Graduate students

Discount group
P

Interference-optical Methods of Deformable Solid Body Mechanics

Translated by: G. A. Yakovlevich, Moscow State Technical University, Moscow, Russia

This reference tutorial contains modern experimental approaches to analysis of strain-stress distribution based on interference-optical methods of registration of strain or displacement fields, including coherent-optical techniques (holographic interferometry, speckle photography, electronic digital speckle interferometry techniques) and photoelastic methods as well as the shadow optical method of caustic.

The book describes the theory, efficient scope of application in the every-day practice and the problems of further development of these techniques. Much attention is paid to new and promising advanced developments in the field of observation and computational methods for study of residual stress, determination of fracture mechanics parameters and material deformation characteristics.

The content corresponds to the course of lectures delivered by the author at the N.E. Bauman Moscow State Technical University.

Features
- Presents the theory and the scope of applications in the practice
- Contains modern approached and promising advanced techniques

Contents

Fields of interest
Continuum Mechanics and Mechanics of Materials; Optics, Optoelectronics, Plasmonics and Optical Devices; Materials Science, general

Target groups
Scientists and researchers, graduate students

Discount group
P
Scanning Force Microscopy of Polymers

This book introduces the reader to scanning force microscopy of polymers based on a practice-oriented approach. It begins with a broad introduction to the necessary background of SFM, including intermolecular forces and various SFM imaging modes. "Scanning Force Microscopy of Polymers" is developed in a didactically clear and easily understandable style. The application of SFM to visualize and study polymers is exemplified by numerous case studies, including experimental protocols. In addition, the book helps the reader to develop a conscious and critical understanding of SFM data. This approach enables the reader to acquire the knowledge and experimental skills that are necessary to understand and obtain good and reliable SFM results within the shortest time possible.

Features
- A practice oriented book. It "teaches" the reader to pick up knowledge and skills necessary to obtain good and reliable results within the shortest possible time
- Didactically clear and easily understandable and contains many graphical representations and visuals
- Helps the reader to develop a conscious and critical understanding

From the contents

Fields of interest
Polymer Sciences; Analytical Chemistry; Biochemistry, general

Target groups
Laboratory scientists including industrial researchers and academic personnel (graduate students and postdoctoral researchers) working on lab floor level, also for managers

Discount group P

X. Yi, S. Du, L. Zhang (Eds.)

Composite Materials Engineering

In recent decades, composite materials have developed very rapidly and the applications continue to be of increasing importance. Composite Materials Engineering, the three-volume reference book, offers an integrated and completely up-to-date coverage on composite materials.

Vol. 1 provides an introduction and the fundamentals of composite materials, covering reinforcements of composites, polymer matrix materials, textile composites, interfaces of composites and mechanics and the design of composites.

Vol. 2 focuses on several important composite materials and provides detailed descriptions about the properties, the production technologies and the applications of these composite materials, including advanced polymer matrix composites, thermoplastic polymer matrix composites, metal matrix composites, etc.

Features
- Authoritative Authorship: More than 40 best experts in composite materials of China devote themselves to the completion of this book
- Comprehensive: It is the most comprehensive book on composite materials in the world
- Advancement: Latest advances in field of optical functional composites and intelligent composites are introduced

Fields of interest
Ceramics, Glass, Composites, Natural Materials; Continuum Mechanics and Mechanics of Materials

Target groups
Researchers and practitioners in the field of composite materials, materials sciences, materials engineering, materials design and civil engineering

Discount group P

Q. Yin, B. Zhu, H. Zeng, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

Microstructure, Property and Processing of Functional Ceramics

Microstructure, Property and Processing of Functional Ceramics describes the preparation, property and local structure microscopy of functional ceramics. It covers functional ceramic fabrication processing, grain boundary phenomena and micro-, nanoscale structures characterizations including scanning electron acoustic microscopy, scanning probe acoustic microscopy and piezoresponse force microscopy. This book is intended for advanced undergraduates, graduates and researchers in the field of materials science, microelectronics, optoelectronics and microscopy.

Qingrui Yin and Binghe Zhu both are professors at the Shanghai Institute of Ceramics, Chinese Academy of Sciences; Dr. Huarong Zeng is an associate professor at the Shanghai Institute of Ceramics, Chinese Academy of Sciences.

Features
- Covers microstructure and mechanical properties of inorganic functional material
- Discusses grain boundary phenomena in functional ceramics
- Discusses near-field acoustic microscopy of inorganic functional material (method, theory and applications)
- Includes quantitative characterization of ferro-piezoelectric material in nanoscale
- 550 photos clearly depict the microstructure of functional ceramics and crystals

Fields of interest
Materials Science, general; Industrial Chemistry/Chemical Engineering; Metallic Materials

Target groups
Researchers, institutes in materials science and ceramics

Discount group P

Microstructure, Property and Processing of Functional Ceramics

Due March 2010

Chemistry and Materials Science

Due March 2010

2010, I, 300 p. (Springer Laboratory) Hardcover
- approx. $129.00
ISBN 978-3-642-01230-3

Microstructure, Property and Processing of Functional Ceramics

Due April 2010

Chemistry and Materials Science

Due April 2010

2010, I, 300 p. (Springer Laboratory) Hardcover
- approx. $279.00
ISBN 978-3-642-01693-6
**Taphonomy**

**Process and Bias Through Time**

Taphonomic bias is a pervasive feature of the fossil record. A pressing concern, however, is the extent to which taphonomic processes have varied through the ages. It is one thing to work with a biased data set and quite another to work with a bias that has changed with time. This book includes work from both new and established researchers who are using laboratory, field and data-base techniques to characterise and quantify the temporal and spatial variation in taphonomic bias. It may not provide all the answers but it will at least shed light on the right questions.

**Contents**


**Fields of interest**

Palaeontology; Biodiversity; Geology

**Target groups**

Researchers and professionals

**Discount group**

P

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**Advanced Monitoring and Numerical Analysis of Coastal Water and Urban Air Environment**

**Assisted by: Y. Kawamoto**

Undergraduate and graduate students of civil engineering, architecture, environmental engineering, and environmental science will enjoy reading the book without knowledge or experience in computer science. Especially, several case study works were introduced focusing urban environmental problems in Mega cities in Asian countries. For example, Tokyo, Taipei, Bangkok are monitoring field for environmental research. Regeneration of Topics include state-of-the-art of environmental monitoring and simulation in urban area: hazardous substances, atmospheric movement, coastal hydrology, biological tests, and wastewater.

**Features**

- Contain interesting and intensive field monitoring data on coastal environmental and urban air environment
- The topics also include state-of-the-art of environmental monitoring and simulation in urban area: hazardous substances, atmospheric movement, coastal hydrology, biological tests, and wastewater

**Fields of interest**

Landscape/Regional and Urban Planning

**Target groups**

Graduates, scientists, researchers, academic libraries

**Discount group**

P
Routine Data Processing in Earthquake Seismology
With Sample Data, Exercises and Software

The purpose of this book is to get a practical understanding of the most common processing techniques in earthquake seismology. The book deals with manual methods and computer assisted methods. Each topic will be introduced with the basic theory followed by practical examples and exercises. There are manual exercises entirely based on the printed material of the book, as well as computer exercises based on public domain software. Most exercises are computer based. The software used, as well as all test data are also available on the DVD in the back of the book.

This book is intended for everyone processing earthquake data, both in the observatory routine and in connection with research. Using the exercises, the book can also be used as a basis for a university course in earthquake processing.

Features
- Only book of its kind
- Provides background, data examples, exercises and integrated software

Contents

Fields of interest
Geophysics/Geodesy; Geotechnical Engineering; Signal, Image and Speech Processing

Target groups
Seismologists at observatories or universities; and earthquake seismologists, seismological engineers

Discount group
P

Encyclopedia of Modern Coral Reefs
Structure, Form and Process


Features
- No equivalent publication available
- Presented from a geological rather than ecological angle
- Will be used by wide range of disciplines as well as earth scientists
- Coral reefs highly topical because of worldwide decline and impact of climate change (sometimes referred to as the “canaries” for climate change)

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

Target groups
Scientists and researchers at geology, oceanography, geography and ecology university and governmental departments, as well as at companies

Impact of Climate Change on Natural Resource Management

This book covers a huge range of strategies that can be applied to various sectors, from forests to flood control. Its aim, as with resource management itself, is to combine economics, policy and science to help rehabilitate and preserve our natural resources.

Beginning with papers on carbon sequestration, including the practice of artificial desertification, the topics move on to cover the use of distributed modeling and neural networks in estimating water availability and distribution. Further chapters look at uncertainty analysis applied to the spatial variation of hydrologic resources, and finally the book covers attempts at estimating meteorological parameters in the context of hydrological variables such as evapo-transpiration from stream flow.

Within the next decade, the effects of climate change will be severe, and felt by ordinary human beings. This book presents a raft of measures that can mitigate, if not reverse, the impact of global warming on the resources we have all come to depend on.

Features
- Comprehensive overview of new methodologies and computational methods, and impact of man-made structures on natural resources
- Detailed examinations of such techniques as Clean Development Mechanism, Environmental Impact Assessment, Remote Sensing, GIS and Watershed Management
- Discusses implications of climatic variations which can be used in research projects

Fields of interest
Climate Change; Hydrogeology; Remote Sensing/Photogrammetry

Target groups
Scientists, researchers, professionals, students, policymakers, environmental managers and social activists

Discount group
P
J. Kämpf, Flinders University, Adelaide, SA, Australia

**Advanced Ocean Modelling**

Using Open-Source Software

This book introduces the reader to advanced methods used in the computer-based modelling of fluid processes. This includes nonhydrostatic processes such as breaking internal waves and density-driven convection, but the model code is also used to simulate an El-Niño event! The book contains 25 practical exercises, using freely available Open-Source software suites, which are widely used by the scientific community. In this book, the art of hydrodynamic modelling is made available and transparent to a wider readership. An attractive biproduct of the book is that results are animations rather than still images. Model codes and animation scripts for all exercises are supplied on a website. The reader can adopt model codes for own independent studies.

**Features**

- Step-by-step introduction to more complex aspects of hydrodynamic modelling suitable for graduates and professional scientists
- Also suitable for online teaching and external workshops

**Fields of interest**

Oceanography; Computer Applications in Earth Sciences; Meteorology/Climatology

**Target groups**

Scientists, researchers, libraries, institutes

**Discount group**

P

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W. Lahoz, Norsk Institutt for Luftforsknings, Kjeller, Norway; B. Khattatov, Fusion Numerics, Boulder, CO, USA; R. Menard, Atmospheric Science and Technology Directorate Environment, Dorval, Canada (Eds.)

**Data Assimilation**

Making Sense of Observations

Data assimilation methods were largely developed for operational weather forecasting, but in recent years have been applied to an increasing range of earth science disciplines. This book will set out the theoretical basis of data assimilation with contributions by top international experts in the field. Various aspects of data assimilation are discussed including: theory; observations; models; numerical weather prediction; evaluation of observiations and models; assessment of future satellite missions; application to components of the Earth System. References are made to recent developments in data assimilation theory (e.g. ensemble Kalman filter), and to novel applications of the data assimilation method (e.g. ionosphere, Mars data assimilation).

**From the contents**

1. Theory. 1.2 Data Assimilation for dummies. 1.3 Mathematical concepts of data assimilation. 1.4 Variational data assimilation. 1.5 Kalman filter methods. 1.6 Errors in data assimilation. 1.7 Bias estimation. 1.8 Evaluation of assimilation algorithms. 1.9 Initialization. 1.10 Inverse Modelling. 2. Observations. 2.1 Observing the Earth System. 2.2 Assimilation of operational data. 2.3 Research satellites.

**Fields of interest**

Mathematical Applications in Earth Sciences; Computer Applications in Earth Sciences; Remote Sensing/Photogrammetry

**Target groups**

Researchers, PhD and post-doctoral students working on the theory and applications of data assimilation, researchers in the various fields of earth sciences who want to gain a better knowledge of the theory of data assimilation and how it can be applied to the specific fields of earth sciences

**Discount group**

P

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A. D. Miall, University of Toronto, ON, Canada

**The Geology of Stratigraphic Sequences**

Preface to Second Edition: The main purpose of this book remains the same as it was for the first edition, that is, to situate sequences within the broader context of geological processes so that geoscientists might be better equipped to extract the maximum information from the record of sequences in a given basin or region. The following are the main themes of the book:

1. Central to the concept of the sequence is the deductive model that sequences carry messages about the “pulse of the earth”. In the early modern period of sequence stratigraphy (the late 1970s and 1980s) the model of global eustasy was predominant, and it was to offer a critique of that model that provided the impetus for developing the first edition of this book. Model-building has been central to the science of geology from the beginning—it was certainly a preoccupation of such early masters of the science as Lyell, Chamberlin, Barrell and Ulrich.

**Features**

- Situates sequences within the broader context of geological processes so that geoscientists are better equipped to extract the maximum information from the record of sequences in a given basin or region
- Essential reading for professional geologists involved in coal, gas and petroleum geology as well as hydrology
- Stresses a deductive approach to geology placing the evidence before the model

**Fields of interest**

Sedimentology; Geology

**Target groups**

Graduate students, scientists, practitioners in hydrocarbon exploration

**Discount group**

P

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Oceanography Migration
Oceanography and Global Climate Change as Keys to the Paths, Sequence, Timing and Range of Prehistoric Migration in the Pacific and Indian Oceans

Oceanography Migration studies the prehistoric peopling of the Pacific. It uses science and mathematics to expand the research base of Pacific prehistory and casts new light on this final human expansion. It explores the fundamental roles of oceanography and of global climate change in determining the paths, sequence, timing and range of Spice Island-based maritime migrations ranging across a quarter of the globe. The book is of interest to Pacific prehistorians, oceanographers and American anthropologists concerned with the diffusionist debate. For oceanographers it presents the new idea of the role of the West Pacific Warm Pool and of three of its major currents in determining the evolution of voyaging in two oceans. For diffusionists it provides new chronological and technological contexts in which the issue of diffusionism needs to be reconsidered.

Features
- Presents a revolutionary analysis of prehistoric oceanic migration
- Provides a coherent oceanographic mechanism for prehistoric voyaging in two oceans
- Offers the first Spice Island-based Polynesian prehistory

From the contents

Fields of interest
Migration; Oceanography; Climate Change

Target groups
Scientists and researchers in oceanography, traditional histories, physiology, genetics, geology and volcanology, ship hydrodynamics, global climate history and paleodemography

Discount group
P

Meteorite Impact
The Danger from Space and South Africa’s Mega-Impact
The Vrederfort Dome

The impact of large extraterrestrial bolides (asteroids and comets) with Earth is an everpresent danger that humanity has only recently begun to recognize. Of the 175 impact craters found thus far on Earth, three giants stand out – Chicxulub in Mexico, Sudbury in Canada, and the Vrederfort Impact Structure in South Africa. Each of these impact events catastrophically altered the global environment and was strong enough to drastically change life on our planet. The Vrederfort Structure is the oldest and largest of these three giants at about 300 km diameter it is nearly twice the size of the Chicxulub crater that was formed by an impact that wiped out approximately 75% of all known life on Earth 65 million years ago. In the more than 2000 million years since its formation, water, wind and ice have slowly eroded away the original Vrederfort crater, exposing its roots in a series of spectacular rocks.

Features
- A guide to one of the world’s oldest and biggest meteorite impact structures

Contents

Fields of interest
Planetology; Geocology/Natural Processes

Target groups
Scientists and interested academics in the related fields, as well as libraries and students

Discount group
P

Encyclopedia of Geobiology

Editorial board: H. Fritz, University of Göttingen, Germany; A. Kappler, Center for Applied Geoscience (ZAG), Tübingen, Germany; K. Konhauser, University of Alberta, AB, Canada; P. Reid, Rosenstiel School of Marine and Atmospheric Science, University of Miami, FL, USA; X. Zhang, Northwest University, Xian, China

Features
- The only key resource in the rapidly expanding area of geobiology
- Cross disciplinary conception from the outset and execution
- Extensive and comprehensible compilation of modern geobiological methods

Fields of interest
Biogeosciences; Earth Sciences, general; Life Sciences, general

Target groups
Libraries; graduate students; researchers (natural scientists, e.g. geochemists, (micro)biologists, geologists, paleontologists, mineralogists); school and university teachers

Discount group
P

Due February 2010

Earth and Environmental Science

Due February 2011

2011. Approx. 800 p. 482 illus., 32 in color.
(Encyclopedia of Earth Sciences Series) Hardcover
$549.00 ISBN 978-1-4020-9211-4

Due March 2010

2010. XIV, 438 p. 22 illus., 8 in color. Hardcover
$179.00 ISBN 978-90-481-3825-8

Earth and Environmental Science

Originaly published by Chris van Rensburg Publications (Pty) Ltd and the Council for Geoscience, 2005
3rd ed. 2010. Approx. 320 p. 300 illus. in color. Softcover
$99.00 ISBN 978-3-642-10463-3

Due February 2011

2011. Approx. 800 p. 482 illus., 32 in color.
(Encyclopedia of Earth Sciences Series) Hardcover
$549.00 ISBN 978-1-4020-9212-1

2011. Approx. 800 p. 482 illus., 32 in color.
Print + eReference. (Encyclopedia of Earth Sciences Series)
$689.00 ISBN 978-1-4020-9213-8

Humanities, Social Sciences and Law
Environmental Change in Siberia

Earth Observation, Field Studies and Modelling

Siberia is undergoing rapid transformations as a result of its climate vulnerability and the exceptionally high rate of warming it has undergone in recent decades. The information presented in this book was not easily accessible to the global change community before. Contributors include a wide range of Russian, European and North American authors from a variety of disciplinary backgrounds including field ecology, satellite remote sensing and modelling.

The book investigates disturbance processes in the taiga forest with a focus on fire and logging, provides observational evidence of evergreen conifer invasion into larch dominated zones which could be a sign of climate change, and describes vegetation model predictions of shifting vegetation zones. Satellite observations of snow cover in Siberia are presented, and observed changes in river runoff described. The interactions between the hydrological cycle, the biosphere and the atmosphere are looked at from a variety of disciplinary viewpoints.

Features

- Highlighting a multitude of processes leading to environmental change in Siberia
- Provides a holistic view of the multiple scales at which environmental change processes operate today by combining an analysis of field observation, model results and satellite imagery
- Features information previously not accessible to the global change community

Fields of interest

Climate Change; Remote Sensing/Photogrammetry; Monitoring/Environmental Analysis

Target groups

Postgraduate students as well as researchers actively investigating global change issues with a special interest in the Siberian region

Discount group

P

Security and Environmental Sustainability of Multimodal Transport

Proceedings of the NATO Advanced Research Workshop on Security and Environmental Sustainability of Multimodal Transport, London, United Kingdom, 8–9 January 2009

This unique resource offers a deep understanding of hazardous material transportation and concomitant security and environmental problems. The risks involved in the transport of dangerous goods are shown to arise mainly from the location of the sources and destinations as well as the timing of deliveries.

Features

- A collection of papers written by international experts on hazardous material transportation, security and environmental protection
- Covers topics which are of great concern to the public and academics, such as the security of transport and climate change

Fields of interest

Sustainable Development; Optimization; Climate Change

Target groups

University academics and researchers in the fields of transportation, sustainable development, individuals interested in hazardous material transportation and its environmental implications, Industries such as transportation and environmental institutions

Discount group

P

Desertification and Its Control in China

Desertification and Its Control in China comprehensively discusses desertification from the views of formation, distribution, development and control models. This book truly elucidates basic theory and control models of desertification, especially the numerous results from research carried out for the UN Convention to Combat Desertification. This book will provide a theoretical and practical basis for ecological and environmental planning and design as well as guidelines for prevention/restoration for desertification projects. It will also provide practical examples.

Features

- Summarizes the achievements in desertification control in China over the past 50 years
- Foreword by Dr. Hama Arba Dialo, Executive Secretary of the UN Convention to Combat Desertification
- The Chinese version of this book received an award for one of the best publications in China in 2006

From the contents


Fields of interest

Soil Science & Conservation; Geocology/Natural Processes; Environmental Management

Target groups

Institutions and researchers, government professionals, and students in ecology, environmental management, and environmental conservation

Discount group

P
The Handbook of Environmental Chemistry

Editor-in-chief: D. Barceló, A. G. Kostianoy

Volume 7

A. G. Kostianoy, P. P. Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russia; A. N. Kosarev, Lomonosov Moscow State University, Moscow, Russia (Eds.)

The Aral Sea Environment
With contributions by numerous experts

The environmental problems in the Aral Sea region continue to worsen. This volume presents the information gathered to date on various aspects of the Aral Sea environment. Specialists from institutions in Russia, Uzbekistan, France, Germany and the USA cover different topics – from the paleohistory and archaeology of the region, to the present physical, chemical and biological state of the sea, and the analysis of the runoff and deltas of the Amudarya and Syrdarya rivers. Further, the regional climate change is discussed and reasons for the progressing environmental crisis and the socio-economic problems in the region are highlighted.

Features
► Presents in a systematic description the knowledge accumulated on the physical oceanography, marine chemistry and biology, and pollution of the Aral Sea
► Based on numerous observational data of the authors, on archival data of several Russian oceanographic institutions and on the broad scientific literature mainly published in Russian editions

Fields of interest
Environmental Chemistry; Marine & Freshwater Sciences; Ecotoxicology

Target groups
Scientists, engineers, graduate students in environmental sciences, risk assessment and risk controlling, toxicology and ecology, decision-makers in government, industrial and regulatory bodies

Discount group
P

Progressive Development
To Mitigate the Negative Impact of Global Warming on the Semi-arid Regions

The book is based on the results of the investigations of the authors in the semi-arid and arid regions (ASAR) of the globe. These investigations brought to the conclusion that the warming climate will cause the drying up of the water resources in these regions. In this case the principles of Sustainable Development will not be able to avert forthcoming catastrophes. These conclusions brought to the compilation of the policy of “Progressive Development”, emphasising investment in the development of new water resources and changing the natural environments while advancing the local populations on the dimension of knowledge by education.

Features
► Progressive Development is a new conceptual model recommended to scientists, engineers, economists, executives and project leaders of NGO aid projects who are involved in development projects in arid and semi arid regions all over the world

Contents
Progressive Development - Human Society Can Mitigate the Negative Impacts of Aridization Due to Global Warming - Regional Investigations - Progressive Development and Strategic Environmental Assessment - Appendices

Fields of interest
Climate Change; Nature Conservation

Target groups
Scientists, researchers; institutes, libraries (climatology, environmental sciences)

Discount group
P

Green and Sustainable Pharmacy

Within recent years pharmaceuticals have come into focus as contaminants of the environment. At the same time the issue of sustainable chemistry gained momentum. Bringing both together would result in sustainable pharmacy. Sustainable pharmacy is a totally new issue and approach. It addresses environmental, economical and social aspects of pharmacy. In the present stage the focus will be on environmental issues along the whole lifecycle of a pharmaceutical entity. That is dealing with resources and energy input but also with waste issues for example during the synthesis and production of an active pharmaceutical ingredient. Furthermore, it would also look on the compounds themselves and will aim to improve the degradability of the compounds after their use in the environment to reduce the environmental risk caused by pharmaceuticals in the environment. Another issue is the people using pharmaceuticals such as pharmacists, medical doctors and patients.

From the contents

Fields of interest
Environmental Management; Pharmacy; Medicinal Chemistry

Target groups
Libraries, institutes, researchers, scientists, pharmaceutical industry

Discount group
P

The Handbook of Environmental Chemistry

Due March 2010

2010, XIV, 330 p. Hardcover
► approx. $339.00
ISBN 978-3-540-88276-3

Progressive Development

Due March 2010

2010, X, 290 p. (Environmental Science and Engineering) Hardcover
► $129.00
ISBN 978-3-642-10639-2

Green and Sustainable Pharmacy

Due March 2010

2010, VIII, 220 p. 40 illus. Hardcover
► approx. $139.00
ISBN 978-3-642-05198-2
Ancient Water Technologies

This fascinating book, which sets out many of the ingenious methods by which ancient societies gathered, transported and stored water, is a timely publication as overextraction and profligacy threaten the existence of aquifers and watercourses that have supplied our needs for millennia. It provides an overview of the water technologies developed by a number of ancient civilizations, from those of Mesopotamia and the Indus valley to later societies such as the Mycenaeans, Minoans, Persians, and the ancient Egyptians. Of course, no book on ancient water technologies would be complete without discussing the engineering feats of the Romans and Greeks, yet as well as covering these key civilizations, it also examines how ancient American societies from the Hohokams to the Mayans and Incas husbanded their water supplies. This unusually wide-ranging text could offer today’s parched world some solutions to the impending crisis in our water supply.

Features
► Presents a universal picture of water technologies of ancient civilizations ► An unusually wide-ranging text which could offer today's world solutions to the impending crisis in our water supply

From the contents

Fields of interest
Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Archaeology; History of Science

Target groups
Hydrologists, civil engineers, scientists and researchers working in water management, environmental water historians

Discount group
P

Reviews of Environmental Contamination and Toxicology

Continuation of Residue Reviews

Volume 204

D. M. Whitacre (Ed.)

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

Contents
Forward.- Preface.- Electron Transfer as a Potential Cause of Diacetyl Toxicity in Popcorn Lung Disease by Peter Kovacic and Andrew L. Cooksey.- Bioconcentration, Bioaccumulation and Metabolism of Pesticides in Aquatic Organisms by Toshiyuki Katagi.- Index.

Fields of interest
Environmental Management; Ecotoxicology; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution

Target groups
Researchers and industry scientists

Discount group
P
Reviews of Environmental Contamination and Toxicology

Continuation of Residue Reviews


Volume 205

D. M. Whitacre, Summerfield, NC, USA (Ed.)

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

Contents


Fields of interest

Environmental Management; Ecotoxicology; Waste Management/Waste Technology

Target groups

Researchers and industry scientists

Discount group

P

Air Pollution Modeling and its Application XX


Recent developments in air pollution modelling are explored as a series of contributions from researchers at the forefront of their field. This book on air pollution modelling and its application is focused on local, urban, regional and intercontinental modelling; data assimilation and air quality forecasting; model assessment and evaluation; aerosol transformation; the relationship between air quality and human health and the effects of climate change on air quality. It consists of a series of papers that were presented at the 30th NATO/SPS International Technical Meeting on Air Pollution Modelling and its Application held in San Francisco, USA, May 18–22, 2009.

Features

▸ Latest research results from top researchers in the field
▸ Balance between applied and theoretical results
▸ International coverage

Fields of interest

Atmospheric Protection/Air Quality Control/Air Pollution; Monitoring/Environmental Analysis

Target groups

Professors and graduate students interested in air pollution modelling as well as researchers and professionals involved in developing and utilizing air pollution models

Discount group

P

In Situ Remediation of Chlorinated Solvent Plumes

This volume provides a review of the past 10 to 15 years of intensive research, development and demonstration on the in situ remediation of dissolved chlorinated solvents. The intended audience includes the decision makers and practicing engineers and hydrogeologists who will select, design and operate these remedial systems, as well as researchers seeking to improve the current state-of-the-art. Our hope is that this volume will serve as a useful resource to assist remediation professionals in applying and developing the technology as effectively as possible.

Features

▸ The editors and chapter authors have produced a well-written and up-to-date treatise that we hope will prove to be a useful reference for those making decisions on remediation of chlorinated solvents, for remediation practitioners, and for those involved in development of advanced technology for the in situ remediation of dissolved chlorinated solvents in groundwater

From the contents


Fields of interest

Environmental Management; Waste Management/Waste Technology

Target groups

Engineers and hydrologists in remediation field, decision makers and researchers in remediation

Discount group

P

Earth and Environmental Science

Due February 2010

▸ $269.00
Also available as Softcover
▸ $129.00

Earth and Environmental Science

Due February 2010

2010. Approx. 705 p. 176 illus., 114 in color. (SERDP/ESTCP Environmental Remediation Technology) Hardcover
▸ $89.95
Local Governments and Climate Change

Sustainable Energy Planning and Implementation in Small and Medium Sized Communities

The focus of this publication is on how small and medium-sized communities in Europe are effectively responding to climate change, with a particular focus on different approaches used in sustainable energy planning and implementation. A number of cases presented show the result of different (and often combined) motivations and actions. The most effective responses are those with a holistic, integrated and long-term approach, addressing both climate change mitigation and adaptation, based on citizen and other local stakeholder involvement. Local climate action means addressing different sectors, from buildings to waste, but also involving the industry and business sectors. The focus is on engaging communities on a large scale.

Features

- Addressing the climate change challenge effectively needs engaged local governments and communities
- Local climate action successes presented show the value of an integrated approach
- Inspiring local climate action success stories show there are multiple benefits for all

Fields of interest

Climate Change; Renewable Energy Sources; Sustainable Development

Target groups

Local decision-makers (mayors, deputy mayors for energy and environment, Councillors); local council administrators and municipal staff (heads of energy and environment departments, technical staff); national policy makers (Departments of Energy, Environment, Strategy, Local Governments); academics and students; public administration, political science, engineering (energy), architecture, environment, sustainable energy / renewable energy management

Discount group

P

Earth and Environmental Science

Due March 2010

2010. 50 illus. in color. (Advances in Global Change Research, Volume 39) Hardcover

approx. $229.00

ISBN 978-1-4020-9530-6
Animal Behaviour: Evolution and Mechanisms

The study of animal behaviour is one of the fastest growing sub-disciplines in biology. The resulting diversity of conceptual approaches and methodological innovations makes it increasingly difficult for professionals and students to keep abreast of important new developments. This edited volume provides up-to-date reviews that facilitate orientation in key areas of animal behaviour, including communication, cognition, conflict, cooperation, sexual selection and behavioural variation. The contributions address evolutionary and proximate aspects of behaviour and also cover both invertebrates and vertebrates. Important concepts are dealt with in separate glossaries and key examples highlighted in separate text boxes. Richly illustrated with colour figures, this volume offers a well structured overview of all the main developments in current animal behaviour research. It is ideal for teaching upper-level courses, where it will be essential reading for advanced students familiar with basic concepts and ideas.

Features
► Articulate summaries of main ideas and approaches in the current study of animal behaviour
► Tests of theories with the most recent empirical examples
► Comprehensive reviews by leaders in their respective fields
► Especially for the master courses

Fields of interest
Behavioural Sciences; Evolutionary Biology; Animal Ecology

Target groups
Advanced students of biology

Discount group
P

Vector Biology, Ecology and Control

The control of mosquitoes and other insect vectors of human pathogens in an area-wide, environmentally and sustainable way is critical to solving global health problems in the developing world but also to industrialized countries that already have in place efficient vector control programs. The rapid spread of West Nile virus through the United States provides one example of how even a highly developed country can be relatively powerless against the spread of mosquito-borne disease. This volume illustrates how the efforts over half a century of a single investigator, Mir S. Mulla, and his students and collaborators have achieved sustainable vector insect control in regions of the world extending from the south-western United States to south-east Asia. These control strategies have been refined over these decades and now are employed in a diversity of ecosystems.

Features
► Brings together papers on vector ecology, molecular biology as applied to mosquito vector control, and mosquito biological control together in one volume
► Centres around the achievements of one individual (and his students and colleagues) who has worked in this field of research for more than 50 years which is a highly unusual achievement in any discipline

Fields of interest
Applied Ecology; Infectious Diseases; Public Health/Gesundheitswesen

Target groups
Entomologists who are vector biologists, mosquito biologists, vector ecologists, employees of mosquito and vector abatement districts in the United States and elsewhere, students (of the above), biological control specialists

Discount group
P

Carbon Nanotubes

Due to their rare combination of high chemical stability, exceptional optical and electrical properties, high surface-to-volume ratio, and high aspect ratio, carbon nanotubes (CNTs) have made an enormous impact on materials science, molecular biology, biomedicine, and bioanalytical chemistry. Carbon Nanotubes: Methods and Protocols provides reliable, consistent protocols on the application of CNTs in molecular biology-related fields. These are of vital importance, as the commercially available CNTs differ in purity, agglomeration state, as well as length and diameter distribution, all of which have a profound influence on the dispersability and surface properties of the tubes. The volume contains detailed sections on functionalization, toxicity, trafficking, scaffolds, and biosensors, provided by expert researchers from various fields.

Features
► Presents functionalization protocols essential for implementing carbon nanotubes into molecular biology methods
► Serves as a comprehensive guide to the use of carbon nanotubes in biochemical sensing, cytotoxicity testing, and gene delivery
► Provides a comprehensive survey of how to employ functionalized carbon nanotubes in molecular biology studies

Fields of interest
Biochemistry, general; Biomaterials

Target groups
Molecular biologists, bioanalytical chemists, nanoscientists, materials scientists

Discount group
P
Statistical Methods in Molecular Biology

While there is a wide selection of ‘by experts, for experts’ books in statistics and molecular biology, there is a distinct need for a book that presents the basic principles of proper statistical analyses and progresses to more advanced statistical methods in response to rapidly developing technologies and methodologies in the field of molecular biology. Statistical Methods in Molecular Biology strives to fill that gap by covering basic and intermediate statistics that are useful for classical molecular biology settings and advanced statistical techniques that can be used to help solve problems commonly encountered in modern molecular biology studies, such as supervised and unsupervised learning, hidden Markov models, methods for manipulation and analysis of high-throughput microarray and proteomic data, and methods for the synthesis of the available evidences.

Features
- An easily accessible reference for statistical methods in molecular biology, written by leading researchers in the field
- Presents a comprehensive guide to self-learning analysis tools for data generated in molecular biology studies, from basic methods to advanced, specialized methods in a progressive style

Fields of interest
Bioinformatics; Statistics, general; Biostatistics

Target groups
Molecular biologists, statisticians, higher level undergraduate students and graduate students in biomedical sciences, statistics and applied mathematics

Discount group
P

Genetic Variation

Methods and Protocols

With the continuing advances in sequencing technologies and the availability of thousands of distinct human genomes, we are fast approaching the day when "personal genomes" become a standard study measure and a routine component of personal health records. In Genetic Variation: Methods and Protocols, expert researchers address the rising importance of genome variation, both at the level of the individual and in population-based studies of disease, with a collection of detailed protocols reflecting the nature and impact of genetic variation on human phenotypes.

Features
- Provides an easily accessible reference volume on all the major forms of genetic variation as written by leading researchers in the field
- Contains detailed bioinformatics tutorials and notes
- Leads the reader step-by-step through the in silico analysis of genetic variants with suggestions for further lab experiments

From the contents
Genetic Variation Analysis for Biomedical Researchers: A Primer.
- Exploring the Landscape of the Genome.
- Asking Complex Questions of the Genome without Programming.
- Laboratory Methods for the Detection of Chromosomal Abnormalities.
- Cancer Genome Analysis Informatics.
- Copy Number Variations in the Human Genome and Strategies for Analysis.
- A Short Primer on the Functional Analysis of Copy Number Variation for Biomedical Scientists.
- Computational Methods for the Analysis of Primate Mobile Elements.

Fields of interest
Human Genetics; Gene Expression

Target groups
Geneticists, molecular biologists, bioinformaticians

Discount group
P

Immunohistochemistry: Basics and Methods

While many excellent texts and monographs exist which cover various aspects of immunohistochemistry, the lack of a concise comprehensive source for using these methods was a major motivation for the authors to write this book. The authors carefully selected the established methods and easy-to-adopt protocols. In addition to standard techniques, special attention was given to modern developments in immunohistochemistry such as antigen retrieval, signal amplification, the use of epitope tags, multiple immunolabeling or diagnostic immunohistochemistry. Each of the procedures described have been proved by the authors. Many of the methods are routinely used in daily practice in their institute. Each chapter starts with a short introduction into the principles of a method and then presents step-by-step protocols and instructions, including precise recipes for all material needed. Thus, the manual is suitable for a broad audience ranging from students and technical assistants to experienced researchers.

Features
- Each protocol described has been proved by the authors; many of the methods are routinely used in daily practice in their institute
- Well established methods as well as easy-to-adopt protocols reflecting recent developments in immunohistochemistry are provided
- All practical steps are clearly described, including lists of all necessary material

From the contents
Antibodies for immunohistochemistry; Antibody labeling and the choice of the label; Probes processing for immunohistochemistry; Working with antibodies; Background staining, autofluorescence and blocking steps.

Fields of interest
Immunology; Biological Techniques; Cell Biology

Target groups
Researchers, students and technical assistants in biomedical and life sciences laboratories

Discount group
P
I. M. Clark, University of East Anglia, Norwich, UK (Ed.)

**Matrix Metalloproteinase Protocols**

Consulting editor: D. A. Young, A. D. Rowan, Newcastle University, Newcastle upon Tyne, UK

Since the discovery of a collagen-degrading protease in the tadpole tail in 1962, matrix metalloproteinase research has led to the discovery of more than twenty distinct vertebrate MMPs, along with a variety of homologues from diverse organisms such as the sea urchin, plants, insects, and nematode worms. Fully updating and adding to the popular first edition, Matrix Metalloproteinase Protocols, Second Edition includes a series of state-of-the-art techniques provided by eminent experts in the field. Beginning with a brief overview of the MMP arena, from how these enzymes fit into the larger degradome to what occurs when their expression and function in the mouse is modulated, the volume continues with sections on the expression and purification of MMPs and TIMPs, the detection of MMPs and TIMPs at both the protein and mRNA level, and our ability to assay MMP and TIMP activities in a wide variety of circumstances.

**Features**
- Includes two comprehensive review chapters and twenty-five detailed method chapters
- Provides state-of-the-art methodologies
- Covers expression, purification, detection, and assay of MMPs and TIMPs
- Details many essential techniques in one easily accessible volume
- Updated and improved second edition
- Chapters include the ‘tricks of the trade’ written by leading researchers

**Fields of interest**
Biochemistry; general; Enzymology

**Target groups**
Biochemists, molecular biologists, cell biologists, and histologists involved in MMP research in academia and industry

**Discount group**
P

I. M. Conboy, D. V. Schaffer, University of California, Berkeley, CA, USA; M. H. Barcellos-Hoff, Lawrence Berkeley National Laboratory, Berkeley, CA, USA; S. Li, University of California, Berkeley, CA, USA (Eds.)

**Protocols for Adult Stem Cells**

The study of adult stem cells has surged in recent years. Because they are responsible for the body’s natural ability to fight diseases, heal and recover, or fail and succumb to various maladies, it has become increasingly important to adapt or devise new methods to identify and obtain these cells in quantity and purity for further study. In Protocols for Adult Stem Cells, expert researchers present a variety of methods for studying five types of clinically-relevant mammalian stem cells: mammary, nerve, skeletal muscle, endothelial and mesenchymal. Culture techniques have been optimized for managing the growth and differentiation of stem cells in vitro; as some stem cells are pluripotent, often the method is to guide the fate of such cells among the possible differentiation fates. Chapters include information that will assist researchers in obtaining, characterizing and studying these cells or adapting them to the stem cells of choice.

**Features**
- Provides methods for derivation, culture, differentiation and characterization of mammalian organ stem cells
- Describes unique genetic markers for prospective isolation of adult stem cell subsets
- Offers examples for in vivo assays of stem cell regenerative potential
- Includes bioengineering applications using stem cells for tissue engineering and regenerative medicine

**Fields of interest**
Cell Biology; Cell Culture; Stem Cells

**Target groups**
Stem cell biologists, molecular and cellular biologists

**Discount group**
P

V. Demidchik, University of Essex, UK; F. Maathuis, University of York, UK (Eds.)

**Ion Channels and Plant Stress Responses**

This book aims to provide a range of perspectives on an area that is very topical at present in plant biology: the role of ion channels in plant stress responses. Functions of cation and anion channels in the sensing and encoding of major biotic and abiotic stimuli, stress signal transduction and metabolism adjustment are examined at the cellular and molecular levels. Particular emphases of the book are on new insights into plant Ca2+ signaling, salinity tolerance mechanisms, cyclic nucleotide gated channels and the regulation of stress reactions among oxygen-derived species.

**Features**
- This book reviews the molecular and physiological properties of ion channels in relation to their functional role in plant stress responses and presents novel hypotheses on mechanisms underlying the encoding and transduction of stress stimuli in plants

**Fields of interest**
Plant Physiology; Plant Biochemistry; Plant Sciences

**Target groups**
Institutes, libraries, scientists

**Discount group**
P

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**Humana Press**

**Springer Protocols**

**Due February 2010**

2nd ed. 2010. Approx. 410 p. 48 illus., 4 in color. (Methods in Molecular Biology, Volume 622) Hardcover

$139.00
ISBN 978-1-60327-298-8

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**Springer Protocols**

**Due January 2010**

2010. Approx. 200 p. 20 illus., 1 in color. (Methods in Molecular Biology, Volume 621) Hardcover

$119.00

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**Biomedical and Life Sciences**

**Due March 2010**

2010. X, 240 p. 28 illus., 15 in color. (Signaling and Communication in Plants) Hardcover

$179.00
ISBN 978-3-642-10493-0
P. Dion, Université Laval, QC, Canada (Ed.)

**Soil Biology and Agriculture in the Tropics**

The relationships between soils, microbes and humans are of crucial relevance in the tropics, where plant stress and microbial activity are exacerbated. This volume of Soil Biology presents the living component of tropical soils, showing how it is shaped by environmental conditions and emphasizing its dramatic impact on human survival and well-being.

Following an introduction to the specificities of tropical soils and of their microbial communities, the biological aspects of soil management are examined, dealing with land use change, conservation and slash-and-burn agriculture, the restoration of hot deserts, agroforestry and paddy rice cultivation. As they are of particular relevance for tropical agriculture, symbioses of plants and microbes are thoroughly covered, as are the biodegradation of pesticides and health risks associated with wastewater irrigation. Lastly, traditional soil knowledge is discussed as a key to our sustainable presence in this world.

**Features**
- The volume editor, Patrice Dion, teaches and performs research in agricultural microbiology at Laval University, Quebec City, Canada, since 1980

**From the contents**
Stephen Nortcliff: Soils of the Tropics; Rainer Georg Joergensen: Organic Matter and Microorganisms in Tropical Soils; Louis V. Verchot: Impacts of Forest Conversion to Agriculture on Microbial Communities and Microbial Function; Gustavo Ribeiro Xavier, Maria Elizabeth Fernandes Correia, Adriana Maria de Aquino, Jerri Edson Zilli, and Norma Gouvêa Rumjanek: The Structural and Functional Biodiversity of Soil: An Interdisciplinary Vision for Conservation Agriculture in Brazil.

**Fields of interest**
- Agriculture; Soil Science & Conservation; Microbiology

**Target groups**
- Microbiologists, soil scientists and agronomists with an interest in tropical agriculture and biology; researchers and advanced students

**Discount group**
P

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I. J. Duncan, University of Guelph, Guelph, ON, Canada; P. Hawkins, Royal Society for the Prevention of Cruelty to Animals, Southwater, UK (Eds.)

**The Welfare of Domestic Fowl and Other Captive Birds**

This book describes the welfare implications of keeping wild and domesticated birds in captivity. The environmental and social requirements of various avian species are discussed and suggestions made for appropriate housing and management techniques. Particular attention is paid to human-bird interactions and their impact on the behaviour and welfare of the birds involved. Training methods for companion birds are also described. Possible future trends in keeping birds in captivity are discussed in relation to evolving laws and codes for both wild and domesticated birds and in the light of developing ethical attitudes to animals. The book will be invaluable to all those who keep birds including poultry farmers, pet owners, and managers and caretakers of birds kept in laboratories, zoos, wildlife aviaries, and rehabilitation centres. It will also be of great interest to poultry production, zoology, wildlife and veterinary students.

**Features**
- Describes appropriate living conditions for captive wild and domesticated birds
- Gives instructions on how to manage captive birds in order to maximise their welfare
- Describes the effects of human-bird interactions on the birds’ behaviour and welfare

**From the contents**
1 Introduction; Section I Captive birds, 2 Human-bird interactions; 3 The welfare implications of housing captive wild and domesticated birds.- 4 Training companion birds.

**Fields of interest**
- Zoology; Animal Genetics and Genomics; Animal Physiology

**Target groups**
- Managers/caretakers of birds kept in laboratories, zoos and wildlife parks, poultry managers, animal production, zoology, wildlife and veterinary students, animal welfare scientists, university libraries, public libraries

**Discount group**
P

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A. Economou, Foundation for Research and Technology - Hellas, Heraklion, Greece (Ed.)

**Protein Secretion**

**Methods and Protocols**

Over the past thirty years, many elegant genetic and biochemical approaches have been combined in order to advance the study of protein secretion and the necessary navigation through cell membranes, yet, despite this progress, less than two hundred membrane protein structures are known, nowhere near the complete inventory that the discovered protein export systems suggest. In Protein Secretion: Methods and Protocols, leading experts in the field provide robust, well-established protocols to elucidate the multiplicity of tools that have been developed to study protein sorting, membrane targeting, transmembrane crossing, and secretion across multiple membranes. With examples involving both prokaryotic and eukaryotic organisms, the volume covers subjects ranging from bioinformatics and proteomics to fundamental enzymology and genetics to cell biology, structural analyses, and biophysics.

**Features**
- Comprehensive guide to developing, running, and analyzing assays to monitor protein secretion from single proteins to proteome scale
- Presents a modular approach to experimental design, covering model biological systems, screening methodologies, detection technologies, and bioinformatics tools
- Covers a wide range of cell-based and in vitro assay formats and systems

**Fields of interest**
- Biochemistry; general; Proteomics; Enzymology

**Target groups**
- Biochemists, geneticists, cellular biologists, molecular biologists, and structural biologists

**Discount group**
P
Essential Readings in Biosemiotics

Antology and Commentary

Synthesizing the findings from a wide range of disciplines – from biology and anthropology to philosophy and linguistics – the emerging field of Biosemiotics explores the highly complex phenomenon of sign processing in living systems. Seeking to advance a naturalistic understanding of the nature and evolution of sign processes and meaning, contemporary biosemiotic research and theory holds deep implications for all those interested in the origins and evolution of life and language, as well as those exploring related issues such as evolutionary psychology, artificial intelligence and the rich diversity of non-verbal human and animal communication processes.

Donald Favreau's Essential Readings in Biosemiotics has been designed to provide a single-source overview of the major works informing this new interdiscipline, including both historical and analytical commentary on each of the texts presented.

Features

- This will be the first anthology in biosemiotics (at least in English) in the world scale
- An insightful composition of commented papers, made by a central contributor to the field
- A guide to newcomers to a new scientific paradigm bridging the gap between science and the humanities
- Essential readings of biosemiotics, proposing that 'Nature' is more 'human' than traditional science would have it

Fields of interest
Life Sciences, general; Linguistics (General); Philosophy of Mind

Target groups
Anyone studying and working in the fields of cognitive science, applied linguistics, theoretical biology, philosophy of mind, semiotics, evolutionary psychology, communication studies, and history of science

Discount group
P

Cholesterol Binding and Cholesterol Transport Proteins

Structure and Function in Health and Disease

Knowledge of cholesterol and its interaction with protein molecules is of fundamental importance in both animal and human biology. This book contains 22 chapters, dealing in depth with structural and functional aspects of the currently known and extremely diverse unrelated families of cholesterol-binding and cholesterol transport proteins. By drawing together this range of topics the Editor has attempted to correlate this broad field of study for the first time. Technical aspects are given considerable emphasis, particularly in relation cholesterol reporter molecules and to the isolation and study of membrane cholesterol- and sphingomyelin-rich "raft" domains. Cell biological, biochemical and clinical topics are included in this book, which serve to emphasize the acknowledged and important benefits to be gained from the study of cholesterol and cholesterol-binding proteins within the biomedical sciences and the involvement of cholesterol in several clinical disorders.

Features

- This book covers all currently significant aspects of cholesterol-binding and transport proteins
- This book integrates diverse topics under the theme of the title
- Chapters in this book are written by active scientists in their field of study
- This book contains a thorough coverage of both fundamental science and clinical aspects of cholesterol-binding proteins

Fields of interest
Biochemistry, general; Lipidology; Protein Science

Target groups
Biochemists concerned with cholesterol metabolism, cholesterol transport and cell membrane cholesterol. Microbiologists concerned with the cholesterol-binding toxins. Cell biologists concerned with membrane "raft" domains. Clinicians dealing with cholesterol metabolism disorders

Discount group
P
Management and the Conservation of Biodiversity

This book brings together a selection of 21 original studies submitted to Biodiversity and Conservation that address aspects of management for the conservation of biodiversity. The topics addressed include: lessons from the Northern spotted owl saga, hidden costs of implementing the EU Habitats Directive, the importance of recently created agricultural wetlands, cutting reeds to create a sustainable habitat, impacts and control of feral cats, selecting areas to complement existing reserve systems, beneficial effects of rabbit warrens, effects of fences on large predator ranges, spatial structure of critical habitats and connectivity, effects of an agro-pasture landscape on biodiversity, community involvement, reserve selection in forests, germ-plasm interventions in agroforestry systems, shade coffee plantations and the protection of tree diversity, reserves and the reduction of deforestation rates in dry tropical forests, reconciling forest conservation actions with usage by and needs of local peoples, weed invasion in understory plant communities in tropical lowland forests, problems of patch area and connectivity in plant conservation, the need not to focus just on hot-spots, and partitioning conservation across elevations.

Features
► Topical case studies ► Broad range of organisms considered ► Examples from a wide range of countries ► Makes primary research papers on the topic available to students and practitioners

Fields of interest
Biodiversity; Ecosystems; Conservation Biology/Ecology

Target groups
Conservation biologists, biodiversity scientists, ecologists

Discount group
P

Methods and Practice in Biodiversity Conservation

This book brings together a selection of 22 original studies submitted to Biodiversity and Conservation that address aspects of methods and practice in biodiversity conservation. The contributions deal with a wide variety of approaches to site selection and management, especially the use of bioindicators, surrogates, and other approaches to site selection. As no complete inventory of all taxa in any one site has yet been achieved, alternative strategies are essential and bioindicators or surrogates come to the fore. The articles included cover a wide range of organisms used in such approaches to in situ conservation: annelids, anurans, arthropods, birds, bryophytes, butterflies, colembolans, flowering plants, a lobster, molluscs, rodents, and turtles.

Features
► Topical case studies ► Broad range of organisms considered ► Examples from a wide range of countries ► Makes primary research papers on the topic available to students and practitioners

Fields of interest
Biodiversity; Ecosystems; Conservation Biology/Ecology

Target groups
Conservation biologists, biodiversity scientists, ecologists

Discount group
P

New Frontiers in Respiratory Control
XIIth Annual Oxford Conference on Modeling and Control of Breathing

The Oxford Conference has been first held at Oxford University in 1948. Since then, it has been held every three years in various countries to exchange ideas and learn the latest findings on the control of respiration. The XIIth Oxford Conference will focus on respiratory control, especially on the topics of respiratory rhythm generation and chemoreception. Clinical research on sleep apnea syndrome will also be an important subject at the meeting.

Features
► XIIth Oxford Conference Proceedings ► Modeling and Control of Breathing

Fields of interest
Neurosciences; Neurobiology; Human Physiology

Target groups
Researchers and clinicians in neuroscience, respiratory physiology, respiratory medicine, respiratory rehabilitation

Discount group
P
S. Jansson, R. P. Bhalerao, A. T. Groover (Eds.)

**Genetics and Genomics of Populus**

Genetics and Genomics of Populus provides an indepth description of the genetic and genomic tools and approaches for Populus, examines the biology that has been elucidated using genomics, and looks to the future of this unique model plant. This volume is designed to serve both experienced Populus researchers and newcomers to the field. Contributors to the volume are a blend of researchers, some who have spent most of their research career on Populus and others that have moved to Populus from other model systems. Research on Populus forms a useful complement to research on Arabidopsis. In fact, many plant species found in nature are— in terms of the life history and genetics— more similar to Populus than to Arabidopsis. Thus, the genetic and genomic strategies and tools developed by the Populus community, and showcased in this volume, will hopefully provide inspiration for researchers working in other, less well developed, systems.

**From the contents**

Part I: Overview and an introduction to the biology of Populus. 1: Why and how Populus became a 'model tree'. 2: Salient Biological Features, Systematics and Genetics Variation of Populus. 3: Growth and Physiology. Part II: Populus genetics and genomics. Chapter 4: The Populus Genome and Comparative Genomics. 5: Nucleotide polymorphism, linkage disequilibrium and complex trait dissection in Populus. 6: Transformation as a tool for genetic analysis in Populus. 7: Populus resources and bioinformatics. Part III: Genetics and genomics of key Populus traits. 8: Reproductive development in Populus.

**Fields of interest**

Plant Genetics & Genomics; Tree Biology; Plant Sciences

**Target groups**

University libraries, researchers in plant genetics and genomics, plant biology and biotechnology; Industry: biotech companies

**Discount group**

P

S. Jose (Ed.)

**Agroforestry for Ecosystem Services and Environmental Benefits**

Agroforestry systems are believed to provide a number of ecosystem services; however, until recently evidence in the agroforestry literature supporting these perceived benefits has been lacking. This volume brings together a series of papers from around the globe to address recent findings on the ecosystem services and environmental benefits provided by agroforestry. Specifically, this volume examines four major ecosystem services and environmental benefits: (1) carbon sequestration, (2) biodiversity conservation, (3) soil enrichment and (4) air and water quality. Past and present evidence clearly indicates that agroforestry, as part of a multifunctional working landscape, can be a viable land-use option that, in addition to alleviating poverty, offers a number of ecosystem services and environmental benefits. This realization should help promote agroforestry and its role as an integral part of a multifunctional working landscape the world over.

**Features**

- Contains original research articles that address ecosystem services and environmental benefits of agroforestry systems
- Extensive case studies that cover carbon sequestration, biodiversity conservation, soil enrichment and air and water quality from the world over

**Fields of interest**

Ecology; Forestry; Biodiversity

**Target groups**

Students, professionals, researchers and policy makers involved in natural resource management, agroforestry, biodiversity conservation, and environmental management

**Discount group**

P


**Transgenic Crop Plants**

Development of transgenic crop plants, their utilization for improved agriculture, health, ecology and environment and their socio-political impacts are currently important fields in education, research and industries and also of interest to policy makers, social activists and regulatory and funding agencies. This work prepared with a classroom approach on this multidisciplinary subject will fill an existing gap and meet the requirements of such a broad section of readers.

**Fields of interest**

Plant Breeding/Biotechnology; Plant Genetics & Genomics; Agriculture

**Target groups**

Researcher

**Discount group**

P

100 Life Sciences Springer News 1/2010 springer.com/booksellers
**Prokaryotic Cell Wall Compounds**

**Structure and Biochemistry**

Microbial cell wall structures play a significant role in maintaining cells’ shape, protecting them from harmful agents, cell adhesion and in positive and negative biological activities with host cells. All prokaryotes, whether they are bacteria or archaea, rely on their surface polymers for these multiple functions. Their surfaces serve as the indispensable primary interfaces between the cell and its surroundings, often mediating or catalyzing important interactions.

Prokaryotic Cell Wall Compounds summarizes the current state of knowledge on the prokaryotic cell wall. Topics concerning bacterial and archaeal polymeric cell wall structures, biological activities, growth and inhibition, cell wall interactions and the applications of cell wall components, especially in the field of nanobiotechnology, are presented.

Contents
Part I Cell Wall Polymers and Structures of Bacteria; Part II Cell Wall Polymers and Structures of Archaea; Part III Biological Activities; Part IV Cell Wall Growth and Inhibition; Part V Cell Wall Interactions; Part VI Application of Cell Wall Components.

Fields of interest
Microbiology; Biochemistry, general; Cell Biology

Target groups
Scientists and advanced students in microbiology, cell biology, biochemistry and biotechnology

Discount group
P

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**Plant Epigenetics**

**Methods and Protocols**

The past fifteen years have witnessed major advances in epigenetics, one of the most popular and quickly evolving fields of modern science. In Plant Epigenetics: Methods and Protocols, expert researchers explore the most recent developments, examining in great detail the contribution of epigenetic regulation to cell function in plants. Chapters include a variety of protocols for studying the function of small non-coding RNAs, DNA methylation, and histone modifications in plants, often in different degrees of complexity. This volume describes bioinformatic approaches to the analysis of high-throughput data, such as bisulfite sequencing and Chip-on-chip assays. It features much-desired protocols for plant transgenesis and the analysis of genome stability, with a detailed discussion of their applications to epigenetic studies.

Features
- Invaluable research tool for all levels of investigators, from undergraduates to research scientists, who are interested in exploring one of the newest and most exciting aspects of molecular plant research

From the contents
Analysis of DNA Methylation in Plants by Bisulfite Sequencing.- Analysis of bisulfite sequencing data from plant DNA with CyMATE.- Analysis of locus-specific changes in methylation patterns using a COBRA (combined bisulfite restriction analysis) assay.- Detection of changes in global genome methylation using the cytosine-extension assay.

Fields of interest
Plant Sciences; Plant Genetics & Genomics; Gene Expression

Target groups
Plant scientists, undergraduate and graduate students

Discount group
P

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**Management of Antimicrobials in Infectious Diseases**

**Impact of Antibiotic Resistance**

Recent evidence suggests an increasing rate of antimicrobial resistant pathogens throughout the world. Pathogens like Staphylococcus aureus are showing substantial prevalence of resistance to antibiotics.

Thus, we think that given these developments, clinicians would welcome an updated version of this book. A resource indicating appropriate, evidence-based antimicrobial treatment of infectious diseases encountered in both the hospital and outpatient settings would be of significant value to practicing clinicians. The book would focus on the clinical importance of appropriate diagnosis and treatment of infectious diseases particularly in terms of antibiotic-resistance. The resource would be valuable to countless numbers of junior-level practitioners (residents, nurse practitioners, physician-assistants). Moreover, the book could be a resource for generalists as well as infectious disease specialists.

Contents

Fields of interest
Microbiology; Infectious Diseases; Bacteriology

Target groups
Family physicians, internists, residents, nurse practitioners, and clinical pharmacists

Discount group
P

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**Humana Press**

**Springer Protocols**

**Due March 2010**


$119.00
ISBN 978-1-60761-645-0

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**Humana Press**

**Springer Protocols**

**Due January 2010**

2nd ed. 2010. Approx. 310 p. 3 illus., 2 in color. (Infectious Disease) Hardcover

$179.00
ISBN 978-1-60327-238-4
RNA Interference
From Biology to Clinical Applications

From the early days when RNA interference was a strange artifact in worms to the 2006 Noble Prize received by Fire and Mello and the current clinical trials, the field of RNA interference has grown at a breakneck pace. In RNA Interference: From Biology to Clinical Applications, expert contributors provide an overview of the most current science and protocols that span the biological disciplines from detailed nucleic acid chemistry, to pharmacology, to the manipulation of signal transduction pathways. Divided into three distinct sections, this volume delves into the physiology of RNA interference, RNA interference in the laboratory and siRNA delivery, and preclinical and clinical issues associated with the use of RNAi-inducing agents as drugs in order to stimulate new questions and offer the tools necessary to start addressing those questions.

Features
▶ Includes a refreshing mixture of detailed technical protocols combined with the scientific context in which they were developed and what they may be applied to
▶ Provides a global overview of the state-of-the-art in RNA interference and practical details used experimentally in the most modern day experiments
▶ Deciphers, organizes, and explains the myriad of techniques used in gene silencing research

Fields of interest
Immunology; Laboratory Medicine

Target groups
Immunologists, geneticists, molecular and cellular biologists, pharmacologists, and clinicians

Discount group
P

The Biology of Krüppel-like Factors

Kruppel-like factors (KLFs) are attracting great attention across a wide spectrum of biological sciences and medicine because of their remarkable biological potency and the diversity of roles they play in the physiological and pathological changes of cells and tissues. This book is a comprehensive compendium of the latest research on the molecular mechanisms of KLFs, describing their roles in transcriptional regulation, cellular differentiation and development, the pathogenesis of the liver and cardiovascular systems and cancer, and generation of ES cells and iPS cells. As the only concise treatise written to date by leading experts in the field, it serves as an authoritative review of this family of molecules and is an essential reference for all who are interested in KLFs. The book also explores the potential of KLFs as targets for novel therapeutics and diagnostics, and will be invaluable in those fields.

Fields of interest
Cell Biology; Animal Genetics and Genomics; Animal Physiology

Target groups
All interested in KLFs

Discount group
P

Surface Plasmon Resonance
Methods and Protocols

While commercial instruments have expanded the usage and the related literature has increased, the quality of surface plasmon resonance (SPR) research has been hindered by a lack of knowledge of the processes that influence the SPR signal. In Surface Plasmon Resonance: Methods and Protocols, experts in the field present a wide variety of applications involving commercially available SPR instruments. The heart of the SPR technique is to construct a dedicated surface for an assay. Protocols describe such surfaces for many needs, including the study of membrane bound proteins. Beyond the protocols-based chapters, the volume also highlights the backgrounds of vital issues in the use of SPR, including processes occurring within the hydrogel environment of sensors and on lipid membrane surfaces as well as the analysis of kinetic information.

Features
▶ Provides detailed protocols for a wide variety of SPR applications
▶ Includes comprehensive background information on SPR techniques for better experimental design
▶ Examines a variety of coupling techniques on different sensor surfaces
▶ Highlights background issues involved in SPR assays to avoid common errors frequently found in SPR literature

Fields of interest
Biochemistry, general; Membrane Biology

Target groups
Biochemists, molecular biologists, medicinal chemists, molecular pharmacologists, and biophysicists

Discount group
P
Chinese Fishes
This book documents the current state of research by Chinese scientists on fish biology and fisheries and brings together manuscripts by authors from research institutions, universities and government agencies. There are papers on aquaculture, life history, genetics, marine and freshwater biology, conservation, physiology, new species descriptions, and truly amazing hypogean fishes. The information on these remarkable cave species shows how much we have yet to learn from that incredible fauna. There are papers dealing with some of the largest fishes and some of the smallest cave species. There are papers dealing with some of the most traditional forms of aquaculture and others with the most modern molecular techniques. The volume includes papers on critically threatened native fishes as well as the most common food species, such as grass carp (Ctenopharyngodon idella). The information on rare and threatened species shows how China is dealing with their endangered fishes.

Features
▶ The first major publication dedicated to scientific papers on fish biology and fisheries science by Chinese scientists ▶ A major compilation and assessment of the ecology and evolution of hypogean (cave) fishes of China

Fields of interest
Marine & Freshwater Sciences; Conservation Biology/Ecology

Target groups
Researchers, Scientists and Fisheries Managers interested in biodiversity, especially of hypogean (cave) fishes, invasive (exotic) species, biogeography of fishes and environmental impact assessment

Discount group
P

Assessment of the ecological status of European surface waters
The complex impact that man has on aquatic ecosystems creates a need for assessment systems that are able to adequately appraise and integrate the effects of various pressures. Chemical analysis alone can easily overlook some factors vital for life. With the adoption of the EU Water Framework Directive (WFD) in the year 2000 which defined the ecological status of surface water as “… an expression of the quality of the structure and functioning of aquatic ecosystems associated with surface waters”, biological indicators were brought to the forefront for the first time and became drivers to the water management practices. Assessment of ecological status and quantification of its relationships with anthropogenic pressures critically depend on knowledge of relevant biotic and abiotic settings and processes. Needs raised by the implementation of WFD have urged scientific research in many fields in order to find more stable and robust biological metrics and to diminish the uncertainty of assessment results.

Features
▶ Discusses the basic principles of setting up biological assessment methods ▶ Covers a large variety of biological indicators from chlorophyll to macroinvertebrates ▶ Brings the first results of the intercalibration of national assessment methods ▶ Discusses the sources of uncertainty in ecological status assessment ▶ Discusses the relationship between lake morphometry, location and water quality

Fields of interest
Freshwater & Marine Ecology; Applied Ecology; Environmental Management

Target groups
Hydrobiologists, water managers

Discount group
P

Chlorophyll a Fluorescence
A Signature of Photosynthesis
Chlorophyll a Fluorescence: A Signature of Photosynthesis highlights chlorophyll (Chl) a fluorescence as a convenient, non-invasive, highly sensitive, rapid and quantitative probe of oxygenic photosynthesis. Thirty-one chapters, authored by 58 international experts, provide a solid foundation for the basic theory, as well as of the application of the rich information contained in the Chl a fluorescence signal as it relates to photosynthesis and plant productivity. Although the primary photochemical reactions of photosynthesis are highly efficient, a small fraction of absorbed photons escapes as Chl fluorescence, and this fraction varies with metabolic state, providing a basis for monitoring quantitatively various processes of photosynthesis. The book explains the mechanisms with which plants defend themselves against environmental stresses (excessive light, extreme temperatures, drought, hyper-osmolarity, heavy metals and UV).

Features
▶ Deals with successful application of the use of chlorophyll fluorescence ▶ Detailed studies in the laboratory have been extended to measurement of total photosynthesis of cell, leaves, plants and plant ecosystems and also explains mechanisms for photoprotection of plants

Fields of interest
Plant Biochemistry; Biochemistry, general; Plant Physiology

Target groups
Graduate students, beginning researchers and advanced undergraduates in integrative plant biology, cellular and molecular biology, plant biology, biochemistry, biophysics, plant physiology, global ecology and agriculture

Discount group
P
miRNA Regulation of the Translational Machinery

The silencing of gene expression by small interfering RNAs has been recognized for only a relatively short time, but this has transformed our understanding of both transcriptional and post-transcriptional gene regulatory mechanisms. Multiple pathways culminate in formation of an RNA-induced silencing complex (RISC) containing a member of the Argonaute protein family bound to a 22-nt RNA strand that interacts with a target mRNA or gene through Watson-Crick base pairing. One consequence is mRNA-specific inhibition of protein synthesis. Evidence has been presented for diverse mechanisms, but there is not universal agreement in the field of how RISCs affect the translational machinery. The chapters collected in this volume represent contribution by leaders in the search to understand how miRNAs affect translation.

Features
► Up-to-day findings on influence of miRNAs on gene translation ► Gives an overview on different microRNA types and functions in plants and animals ► Shows novel applications of microRNAs

From the contents

Fields of interest
Biochemistry, general; Cell Biology; Gene Expression

Target groups
Researchers and professionals

Discount group
P

Red Algae in the Genomic Age

This volume covers the modern biology and the speciation of the red algae (Rhodophyta) from unicellular Cyanidiales up to macrocellular sea weeds. A team of peer reviewers has reviewed all chapters. The chapters describe a range of topics from cave algae from Atacama, Chile, to genomes of red algae. Some chapters deal with the carboxydrates, physiological mechanisms, and realsitionship between red algae and neurodegenerative disease. Other chapters deal with organellar - nuclear genes and taxonomic revision. Emphasis is placed upon the rhodophyta plastid, its origin, evolution, division machinery and pigmentation. The reader will find in this book lots of new information on the red algae.

Features
► New data presented in the chapters ► Data had been contributed by experts in the field of Red Algae ► The information is aimed at a wide circle of biological disciplines ► No recent publications on the biology of Red Algae

Fields of interest
Life Sciences, general; Eukaryotic Microbiology; Microbial Genetics and Genomics

Target groups
From undergraduate students to professional scholars in the fields of biology, phyology, ecology, general biology, plant biology, and for non-specialists looking for an introductory outline to current knowledge and research on red algae

Discount group
P

Microbial Mats

Modern and Ancient Microorganisms in Stratified Systems

This book provides information about microbial mats, from early fossils to modern mats located in marine and terrestrial environments. Microbial mats – layered biofilms containing different types of cells – are most complex systems in which representatives of various groups of organisms are found together. Among them are cyanobacteria and eukaryotic phototrophs, aerobic heterotrophic and chemooautotrophic bacteria, protozoa, anoxygenic photosynthetic bacteria, and other types of microorganisms. These mats are perfect models for biogeochemical processes, such as the cycles of chemical elements, in which a variety of microorganisms cooperate and interact in complex ways. They are often found under extreme conditions and their study contributes to our understanding of extremophilic life. Moreover, microbial mats are models for Precambrian stromatolites; the study of modern microbial mats may provide information on the processes that may have occurred on Earth when prokaryotic life began to spread.

Features
► This volume presents new information not published as yet ► Chapters have been contributed by experts of microbial mats ► The information in this book is aimed to a wide circle of readers ► There are no other recent publications to compete with this one

Fields of interest
Life Sciences, general; Microbial Ecology; Biogeo-sciences

Target groups
From undergraduate to professional scholars in the fields of general biology, microbial ecology, geology, environmental sciences, as well as other non biologists readers

Discount group
P
Seaweeds and their Role in Globally Changing Environments

Global warming is accelerating faster than the ability for natural repair, and environmental stresses are damaging ecosystems, all affecting physical and biological systems on Earth. A new Nasa-led study shows that human activity has caused climate changes resulting in permafrost thawing, acid rain, and lower productivity in lakes as well as increased emissions of greenhouse gases, including CO2, N2O, CH4, CF3, and CFC. Marine plants play a vital role in maintaining the balance of marine environments, while serving as a source of food for humankind and important chemical compounds. Microalgae and seaweed have enormous potential for reducing global warming and climate change. During photosynthesis algae grow, draw CO2 from the atmosphere, release oxygen, and produce solar biofuel.

Features
- First book addressing global change and seaweeds
- Interdisciplinary approaches of seaweeds and global change
- In spite of the complexity of the topic, it can easily be read by everyone
- An updated information of current and future global changes in the marine environment
- Integration of decades of research and experience of top scientists in the field of marine biology

Fields of interest
Life Sciences, general; Climate Change; Pollution, general

Target groups
The target readership consists of scientists of marine phycologists interested in sea weeds and global changing lines, ecologists, geologists, atmospheric scholars, and general readers

Discount group
P

RNA Therapeutics

Function, Design, and Delivery

Central to the synthesis of proteins, the performance of catalysis, and many other physiological processes, the aberrant expression of which can be linked to human diseases including cancers, RNA has proven to be key target for therapeutics as well as a tool for therapy. In RNA Therapeutics: Function, Design, and Delivery, expert contributors from a broad spectrum of scientific backgrounds highlight the roles that messenger RNAs and small RNAs can play in biology and medicine.

Features
- Collects in one single volume the most relevant RNA-based technologies, including ribozymes, RNA aptamers, and siRNAs, and mRNA-encoding therapeutic proteins
- Features the translation of RNA-based therapies into the clinic
- Includes techniques to isolate, quantify, and clone small RNAs as well as strategies to overcome siRNA unwanted effects

From the contents

Fields of interest
Animal Genetics and Genomics; Human Genetics; Gene Therapy

Target groups
Geneticists, immunologists, molecular biologists, molecular engineers, biotechnologists, pharmaceutical scientists, and clinicians

Discount group
P

Bemisia: Bionomics and Management of a Global Pest

Bemisia tabaci (Gennedius) has distinguished itself from the more than 1,000 whitefly species in the world by its adaptability, persistence and potential to damage a wide range of agricultural and horticultural crops in all six of the world’s inhabited continents. B. tabaci inflicts plant damage through direct feeding, inducement of plant disorders, vectoring of plant viruses and excretion of honeydew. This book collates multiple aspects of the pest ranging from basic to applied science and molecular to landscape levels of investigation. Experts in multiple disciplines provide broad, but detailed summaries and discussion of taxonomy, genetics, anatomy, morphology, physiology, behavior, ecology, symbiotic relationships, virus vector associations and various tactics for integrated management of this pest insect.

Features
- Will fill a void by providing an up to date detailed summary of many aspects of Bemisia tabaci
- Provides, for the first time, a detailed set of diagrams and scanning electron microscope images of all developmental stages of Bemisia tabaci which beautifully illustrate the complex anatomy and morphology of this pest insect

From the contents

Fields of interest
Invertebrates; Agriculture; Plant Pathology

Target groups
Entomologists, plant pathologists, horticulturists, agronomists, consultants, growers

Discount group
P
The Far North
Plant Biodiversity and Ecology of Yakutia

Outside Russia very little is known about the terrestrial ecology, vegetation, biogeographical patterns, and biodiversity of the enormously extensive ecosystems of Yakutia, Siberia. These systems are very special in that they function on top of huge layers of permafrost and are exposed to very severe and extreme weather conditions, the range between winter and summer temperatures being more than 100 degrees C. The soils are generally poor, and human use of the vegetation is usually extensive. Main vegetation zones are taiga and tundra, but Yakutia also supports a special land and vegetation form, caused by permafrost, the alas: more or less extensive grasslands around roundish lakes in taiga. All these vegetation types will be described and their ecology and ecophysiological characteristics will be dealt with.

Features
- Totally unknown area in English speaking/world
- Ecology of areas with extreme climatic conditions
- Ecology of areas on huge depth of permafrost
- Ecology of a huge area that largely is still very natural
- Ecology of little-known land use practices (e.g. reindeer herding, ‘alas’ hay cutting)

Fields of interest
Plant Systematics/Taxonomy/Biogeography; Plant Ecology; Meteorology/Climatology

Target groups
Biologists, ecologists, conservationists, physical geographers, soil scientists, climatologists, Siberia-specialists, Russia-lovers, environmentalists, planners, policy makers

Discount group
P

MicroRNA Expression Detection Methods

This book provides comprehensive descriptions of the innovative strategies and methodologies for detecting miRNA expression, their application in miRNA research and their potential as tools for clinical diagnosis and prognosis. It begins with the introduction of the overall concept and strategies of miRNA expression detection methods emphasizing the need of a wide variety of these methods to suit specific requirements for research and clinical examination in laboratories. In the following, each single chapter focuses on an independent, unique method of miRNA detection and is divided into five subsections: summary, introduction, protocol (including materials, instrument, reagent, and procedure), application and limitation, and reference. The development of the technique, the ideas behind it and the mechanisms underlying the method are given in the introduction of each chapter.

Features
- Gives comprehensive descriptions of miRNA expression detection methods
- Shows applications of miRNA profiling in miRNA research
- Highlights the potential of miRNA profiling in clinical diagnosis and prognosis

Fields of interest
Cell Biology; Biochemistry, general; Gene Expression

Target groups
Scientists and researchers in cell biology, pharmacology, and drug design

Discount group
P

Climate Change and Management of Cool Season Grain Legume Crops

This book covers all aspect of legume production management technologies, plant ecological response, nutrients management, biological nitrogen fixation, molecular approaches, potential cultivars, biodiversity management under climate change. Also covered are various aspects of legume management under climate change such as, production management technology, ecology & adaptation, diseases, and international trade; physiology and crops response to nutrients, drought, salinity, and water use efficiency; Biodiversity management, molecular approaches and biological Nitrogen fixation; climate change and strategies.

This book presents the most comprehensive and up to date review of research on different cool season grain legume crops, nutrients management, biotic and abiotic stresses management, agronomical approaches for drought management, salinity, drought, weed management and water use efficiency, impact on international trade around the world.

Features
- Presents the most comprehensive and up to date review of research on different cool season crops
- Covers various aspects of production and management technology
- Broad coverage of legumes compared to recent specific one crop books

Fields of interest
Plant Sciences; Climate Change; Plant Biotechnology

Target groups
Legume breeders, agronomists, scientists, academic researchers, graduates students, traders, and farmers in the developing and the developed world

Discount group
P
M. Zahran

**Climate – Vegetation**

*Afro-Asian Mediterranean and Red Sea Coastal Lands*

Deserts are unique ecosystems with their own biotic and abiotic components, and are often rich in renewable natural resources, the appropriate management of which can contribute significantly to the sustainable management of desert regions for the welfare of the people. Yet while there are many books on the flora of the countries fringing the important desert countries of the Mediterranean and Red Seas, there are few books reporting on their ecophysiology and vegetation ecology. This book presents the vegetation types of the African and Asian countries of the Mediterranean and Red Sea coastal regions, and discusses the ecological threats and economic applications of these critical resources. In particular, it examines the relationships between climate and vegetation, and discusses these within the context of desertification, agro-industrial applications, ecotourism and sustainable development.

**Features**

- Important overview of the coastal desert vegetation of a wide area
- Useful for sustainable development of a very difficult environment
- Applications for nature conservancies, vegetation mapping, planning of vegetation management, monitoring

**Fields of interest**

Plant Systematics/Taxonomy/Biogeography; Climate Change; Plant Ecology

**Target groups**

This book will provide a valuable reference for researchers and graduate students involved in plant ecology, biogeography and environmental management in the Afro-Asian Mediterranean and Red Sea coastal regions, as well as other desert regions around the world

**Discount group**

P

U. B. Zehr, Mahyco Research Center, Jaina, India (Ed.)

**Cotton**

**Biotechnological Advances**

The growing global population poses the challenge to the scientific community of doubling or tripling the food, feed and fiber production by the year 2050. Biotechnology can make a significant contribution to this effort. This volume reviews the use of biotechnology in cotton, which is the leading plant fiber crop worldwide and grown commercially in more than 50 countries. Renowned experts highlight the success of Bt cotton, the introduction of second and third generation traits and the impact at all levels of farming. Furthermore, the molecular advances being made in cotton biotechnology and the potential traits that will come to market in the next decade are described in detail.

**Features**

- Highlights the advances in cotton biotechnology, the benefits and socioeconomic impacts

**Contents**


**Field of interest**

Plant Breeding/Biotechnology

**Target groups**

Researchers and professionals

**Discount group**
P
Persistence Pays
U.S. Agricultural Productivity Growth and the Benefits from Public R&D Spending

This book documents the evolving path of U.S. agriculture in the 20th Century and the role of public R&D in that evolution. The work begins with a detailed quantitative assessment of the shifting patterns of production among the states and over time and of the public institutions and investments in agricultural R&D. Then, based on newly constructed sets of panel data, some of which span the entire 20th Century and more, the authors present new econometric evidence linking state-specific agricultural productivity measures to federal and state government investments in agricultural research and extension. The results show that the time lags between R&D spending and its effects on productivity are longer than commonly found or assumed in the prior published work. Also, the spillover effects of R&D among states are important, such that the national net benefits from a state’s agricultural research investments are much greater than own-state net benefits.

Features
- Contains an empirical assessment of the long-run investments in and payoffs to agricultural R&D in the United States, which will be of broader international as well as U.S. interest
- Includes substantial improvements in data, understanding, methods, and new and interesting empirical results

Fields of interest
Agricultural Economics; Economic Policy; R & D/Technology Policy

Target groups
Researchers and graduate students in agricultural economics and food policy; policymakers and research administrators concerned with food and agricultural productivity issues, particularly in the U.S.

Discount group
P

Flexible Shift Planning in the Service Industry
The Case of Physicians in Hospitals

The book presents new ideas to model and solve the flexible shift planning problem of personnel workers in the service industry. First, a new modeling approach is proposed that requires shifts to be generated implicitly rather than employing a predefined set of shift types like three 8-hour or two 12-hour shifts to cover varying forecast demand. The objective is to minimize the total cost of the assignments given the general and individual labor restrictions.

Second, to find high quality assignments two solution methodologies are presented. A heuristic decomposition strategy decomposes the problem into weekly subproblems whereas a branch-and-price algorithm that uses several branching rules decomposes the model by worker types. The master problem uses a set covering formulation whereas the subproblems are mixed integer programs. The modeling and solution methodologies are developed and tested using the example of physicians from an anesthesia department of a German university hospital.

Contents

Fields of interest
Operations Research/Decision Theory; Public Health/Gesundheitswesen; Operations Research, Management Science

Target groups
Scientists, professionals in health care management

Discount group
P

Monetary and Fiscal Strategies in the World Economy

This book studies the strategic interactions between monetary and fiscal policies in the world economy. The world economy consists of two regions, say Europe and America. The policy makers are the central banks and the governments. The policy targets are low inflation, low unemployment, and low structural deficits. There are demand shocks, supply shocks, and mixed shocks. There are regional shocks and common shocks.

This book develops a series of basic, intermediate, and more advanced models. Here the focus is on the Nash equilibrium. The key questions are: Given a shock, can policy interactions reduce the existing loss? And to what extent can they do so? Another topical issue is policy cooperation. To illustrate all of this there are a lot of numerical examples.

Features
- Describes the strategic interactions between monetary and fiscal policies in the world economy
- A series of basic, intermediate, and more advanced models are developed in this book focused on the Nash equilibrium
- A lot of numerical examples to illustrate all are given

Contents

Fields of interest
Macroeconomics; International Economics; Economic Policy

Target groups
Researchers

Discount group
P
Semantic e-Science

The Semantic Web has been a very important development in how knowledge is disseminated and manipulated on the Web, but it has been of particular importance to the flow of scientific knowledge, and will continue to shape how data is stored and accessed in a broad range of disciplines, including life sciences, earth science, materials science, and the social sciences. After first presenting papers on the foundations of semantic e-science, including papers on scientific knowledge acquisition, data integration, and workflow, this volume looks at the state of the art in each of the above-mentioned disciplines, presenting research on semantic web applications in the life, earth, materials, and social sciences. Drawing papers from three semantic workshop series, as well as papers from several invited contributors, this volume illustrates how far semantic web applications have come in helping to manage scientific information flow.

Features
► Presents the latest research on developing semantic web applications for a broad range of scientific disciplines
► Covers developments in knowledge acquisition, integration, and dissemination
► Presents research findings from respected leaders in semantic web application development

Fields of interest
Operations Research/Decision Theory; Information Systems; Information Systems Applications (incl.Internet)

Target groups
Practitioners and researchers in semantic web application development, information science practitioners in scientific settings

Discount group
P

Trends in Multiple Criteria Decision Analysis

Multiple Criteria Decision Making (MCDM) is the study of methods and procedures by which concerns about multiple conflicting criteria can be formally incorporated into the management planning process. A key area of research in OR/MS, MCDM is now being applied in many new areas, including GIS systems, AI, and group decision making. This volume is in effect the third in a series of Springer books by these editors (all in the ISOR series), and it brings all the latest developments in MCDM into focus. Looking at developments in the applications, methodologies and foundations of MCDM, it presents research from leaders in the field on such topics as Problem Structuring Methodologies; Measurement Theory and MCDA; Recent Developments in Evolutionary Multi-objective Optimization; Habitual Domains and Dynamic MCDM in Changeable Spaces; Stochastic Multicriteria Acceptability Analysis; and many more chapters.

Features
► Editors are three of the most prominent researchers in the field
► Prestigious group of contributors
► Addresses development in foundation, methodologies, and newest applications

Fields of interest
Operations Research/Decision Theory; Game Theory/Mathematical Methods; Operations Research, Management Science

Target groups
OR/MS researchers involved in MCDM theory and applications; graduate-level students in decision theory programs in OR/MS

Discount group
P

Operations Research
A Model-Based Approach

The book covers the standard models and techniques used in decision making in organizations. The main emphasis of the book is on modeling business-related scenarios and the generation of decision alternatives. Fully solved examples from many areas are used to illustrate the main concepts without getting bogged down in technical details. The book presents an approach to operations research that is heavily based on modeling and makes extensive use of sensitivity analyses. It is a result of many years of combined teaching experience of the authors.

Features
► Covers the standard operations research techniques
► Presents an approach to operations research that is heavily based on modeling and makes extensive use of sensitivity analyses
► Emphasis is on getting insight into problems, rather than computing solutions

Fields of interest
Operations Research/Decision Theory; Operations Research, Management Science; Engineering Economics, Organization, Logistics, Marketing

Target groups
Students

Discount group
P

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2010. Approx. 450 p. Softcover
► approx. $69.95
ISBN 978-3-642-10325-4
J. E. Floyd, University of Toronto, ON, Canada

**Interest Rates, Exchange Rates and World Monetary Policy**

A careful basic theoretical and econometric analysis of the factors determining the real exchange rates of Canada, the U.K., Japan, France and Germany with respect to the United States is conducted. The resulting conclusion is that real exchange rates are almost entirely determined by real factors relating to growth and technology such as oil and commodity prices, international allocations of world investment across countries, and underlying terms of trade changes. Unanticipated money supply shocks, calculated in five alternative ways have virtually no effects. A Blanchard-Quah VAR analysis also indicates that the effects of real shocks predominate over monetary shocks by a wide margin. The implications of these facts for the conduct of monetary policy in countries outside the U.S. are then explored leading to the conclusion that all countries, to avoid exchange rate overshooting, have tended to automatically follow the same monetary policy as the United States.

**Features**
- Real exchange rate determination and the workings of monetary policy of individual countries in a world economy

**From the contents**

**Fields of interest**
Macroeconomics; Econometrics; International Economics

**Target groups**
Libraries, scientists, practitioners

**Discount group**
P

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R. P. Gilles, Queen’s University, Belfast, Ireland

**The Cooperative Game Theory of Networks and Hierarchies**

The book brings together an overview of standard concepts in cooperative game theory with applications to the analysis of social networks and hierarchical authority organizations. The standard concepts covered include the multi-linear extension, the Core, the Shapley value, and the cooperative potential. Also discussed are the Core for a restricted collection of formable coalitions, various Core covers, the Myerson value, value-based potentials, and share potentials. Within the context of social networks this book discusses the measurement of centrality and power as well as allocation rules such as the Myerson value and hierarchical allocation rules. For hierarchical organizations, two basic approaches to the exercise of authority are explored; for each approach the allocation of the generated output is developed. Each chapter is accompanied by a problem section, allowing this book to be used as a textbook for an advanced graduate course on game theory.

**Features**
- Comprehensive overview of standard concepts in cooperative game theory
- Presentation of applications to the analysis of social networks and authority structures

**Contents**

**Fields of interest**
Game Theory/Mathematical Methods; Game Theory, Economics, Social and Behav. Sciences; Economic Theory

**Target groups**
Researchers in the field of game theory

**Discount group**
P

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H. Guerrero, Mason School of Business, Williamsburg, VA, USA

**Excel Data Analysis**
Modeling and Simulation

This book is written for the students and practitioners who are looking for a single introductory Excel-based resource that covers three essential business and analytical skills – Data Analysis, Business Modeling, and Simulation of Complex Problems. The focus of the book is clearly on analysis of problems for decision making, yet detailed explanations regarding how to use Excel tools are provided. After many years of teaching and consulting, it is abundantly clear to me that for most students, a good example is worth its weight in gold. This book contains many excellent examples in each chapter, some simple and others more complex, and there is an abundance of exhibits to guide the student through the maze of steps necessary for each analysis.

The content is quite diverse: data presentation – the Feng Shui of spreadsheets, effective communication and collaboration, data preparation – import, scrub, manipulate data, data analysis – statistical methods: descriptive, inferential, and predictive, and more.

**Features**
- Targeted at business students or practitioners looking for a single introductory Excel-based resource covering three essential business skills—Data Analysis, Business Modeling, and Simulation
- The Instructor’s Manual offers opportunities for classroom instruction, student participation and assignments or research
- Problems and Exercises at the end of each chapter

**Fields of interest**
Operations Research/Decision Theory; Organization/Planning; Information Systems

**Target groups**
Business School students-UG and MBA, practitioners

**Discount group**
P
Monopsonistic Labour Markets and the Gender Pay Gap
Theory and Empirical Evidence

This book investigates models of spatial and dynamic monopsony and their application to the persistent empirical regularity of the gender pay gap. Theoretically, the main conclusion is that employers possess more monopsony power over their female employees if women are less driven by pecuniary considerations in their choice of employers than men. Employers may exploit this to increase their profits at the detriment of women’s wages. Empirically, it is indeed found that women’s labour supply to the firm is less wage-elastic than men’s and that at least a third of the gender pay gap in the data investigated may result from employers engaging in monopsonistic discrimination. Therefore, a monopsonistic approach to gender discrimination in the labour market clearly contributes to the economic understanding of the gender pay gap. It not only provides an intuitively appealing explanation of the gap from standard economic reasoning, but it is also corroborated by empirical observation.

Contents

Fields of interest
Labor Economics; Sociology; Microeconomics

Target groups
Scientists

Discount group
P

Investment Banking
A Guide to Underwriting and Advisory Services

The recent financial turmoil has raised suspects on investment banks and will certainly reshape the industry. However, the transactions traditionally managed by investment banks will still require the intervention of financial institutions, as always in the past. This book aims at providing an overview of these traditional investment banking activities. It covers the main areas of investment banking: security underwriting (equity and debt), syndicated loans, market for corporate control (M&As, LBOs, etc.), restructuring. There is an impressive amount of research papers on the different areas of investment banking. While this growing literature provides a conceptual framework, it has little to say on “how to do things”. The aim of the book is to blend the scholars’ and practitioners’ views: every transaction is examined from both perspectives. Even when deeper attention is given to research, it is done with the simple and effective language of business.

Features
- Comprehensive overview of traditional investment banking activities
- Provides understanding of main technical aspects of the investment banking business
- Combines the academic and practical perspectives
- Optimal accompanying book for investment banking or advisory corporate finance courses

Fields of interest
Finance/Banking

Target groups
Students and teachers in the field of finance/banking; researchers

Discount group
P

Elements of a Philosophy of Management and Organization

Managing as a form of human action has an inherent link with philosophy, which is also concerned with choosing the right action and the best way to lead our lives. Management theory and philosophy can join forces in epistemology (the philosophy of knowledge), ethics, and cultural theory. The epistemology of management concerns the question of how management can improve its ability to create knowledge about managing companies and about using management theory in the task of managing. Management ethics investigates the question of what the right management actions are. The cultural theory of management examines how corporate culture can increase the cooperation within the firm and how the cultural surplus value of products and brand management can increase the firm’s value creation in its products. This book introduces the readers to central approaches in this new field, which represents a synthesis of management and philosophical theory.

From the contents

Fields of interest
Organization/Planning; Ethics; Philosophy of the Social Sciences

Target groups
Scientists

Discount group
P
H. Landstrom, University of Lund, Sweden

Pioneers in Entrepreneurship and Small Business Research

Around the world there is an increasing interest in issues of small business and entrepreneurship. In a time with a lot of myths and opinions of the role of entrepreneurs and small business it is vital for a book like this to encapsulate the knowledge that can be gained from the most significant research contributions in the field. Such knowledge is often build upon empirical oriented methods providing policy relevant results for small business owners and entrepreneurs.

The aim of Pioneers in Entrepreneurship and Small Business Research is first to provide a historical-doctoral review of the development of entrepreneurship and small business research and, second, to present some of the key pioneers that have shaped the research field during the past three decades. The book focuses on the first recipients of the FSF-NUTEK International Award for Small Business Research including David Birch, Arnold Cooper, David Storey, Ian MacMillan, Howard Aldrich, Zoltan Acs, David Audretsch, and Giacomo Becattini.

Features
► In emerging and rapidly growing fields of research it is always important for researchers and advanced MBA students to stop now and then, and reflect on our knowledge and the future development of the field of research  ► Gives a historical-doctoral review of entrepreneurship and small business research, but also a summary of the core knowledge within the field

Fields of interest
Entrepreneurship; Business/Management Science, general

Target groups
Researchers in entrepreneurship and small business, management science, and economics, as well as MBA candidates

Discount group
P

E. van Leeuwen, University of Amsterdam, The Netherlands

Urban-Rural Interactions
Towns as Focus Points in Rural Development

Modern Europe has rural roots. Even today, as much as 90 per cent of Europe (EU25) consists of rural areas in which half of the population lives. While different rural areas often face different challenges, the shift from agricultural production towards a multifunctional landscape and the increasing value assigned to environmental values affect all rural areas.

The ambition to develop a more diversified rural economy, as well as the bottom-up approach and local focus of many rural policies, require a clear knowledge of the current socio-economic function of towns and town-hinterland linkages. Therefore, the aim of this study is to contribute to the understanding of the current function of towns in Europe in general and in the Netherlands more specifically. By using both micro- and macro-approaches, the multifaceted relationships between town-hinterland and the rural economy are explored at different spatial levels and for different actors, in particular for households, farms and firms.

Contents

Fields of interest
Regional/Spatial Science; Landscape/Regional and Urban Planning; Agricultural Economics

Target groups
Scientists

Discount group
P

Science & Technology in China: A Roadmap to 2050
Strategic General Report of the Chinese Academy of Sciences

Editor-in-chief: Y. Lu

This general report, sponsored by the Chinese Academy of Sciences, presents a panoramic scenario for China’s modernization drive to 2050. It analyzes the evolution and laws governing the development of science and technology, describes the decisive impact of science and technology on the modernization process, predicts that the world is on the eve of an impending S&T revolution, and calls for China to be fully prepared for this new round of S&T advancement. Based on its detailed study of the demands on S&T innovation in China’s modernization, it draws a framework for eight basic and strategic systems of socio-economic development with the support of science and technology, works out China’s S&T roadmaps for the relevant eight basic and strategic systems in line with China’s reality, further details S&T initiatives of strategic importance to China’s modernization, and provides S&T decision-makers with comprehensive consultations for the development of S&T innovation consistent with China’s reality.

Features
► The first book available on China’s long-term S&T plan  ► Presents a panoramic scenario for China’s modernization drive to 2050  ► Includes eighteen specific S&T roadmaps for relevant basic and strategic systems in China  ► Provides comprehensive consultations for the development of S&T innovation with Chinese characteristics

Fields of interest
R & D/Technology Policy; Renewable Energy Sources; Sustainable Development

Target groups
Researchers, government officials and entrepreneurs

Discount group
P
Resourcing Small and Medium Sized Enterprises
A Financial Growth Life Cycle Approach

C. Mac an Bhaird, Dublin City University, Dublin, Ireland

In a world of increasing financial uncertainty and growing unemployment, the macroeconomic contribution of SMEs is more important than ever. Development of a vibrant, sustainable small firm sector is dependent on sufficient resourcing of SMEs, particularly adequate capitalisation. This book provides a timely examination of SME financing and determinants of capital structure. A special feature of this book is the novel methodological approach adopted, providing an innovative perspective on SME financing. Analysis of stated financing preferences and objectives of SME owners is combined with results of statistical analysis of firm characteristics in exploring holistic explanations for observed capital structures. The uniqueness of this approach is in the contribution of data on financing preferences to supplement and contextualise results of bivariate and multivariate statistical tests. This methodology extends the contextualisation of results of bivariate and multivariate analyses of SME owners and is of interest to academics, researchers, practitioners and policy makers.

Fields of interest
Finance / Banking; Organization/Planning; Entrepreneurship

Target groups
Scientists and researchers

Discount group
P

The Geography of Competition
Firms, Prices, and Localization

J. R. Miron, University of Toronto, Scarborough, ON, Canada

This book provides a comprehensive, up-to-date, and expert synthesis of location theory. What are the impacts of a firm’s geographic location on the locations of customers, suppliers, and competitors in a market economy? How, when, and why does this result in the clustering of firms in space? When and how is society made better or worse off as a result? This book uses dozens of locational models to address aspects of these three questions. Classical location problems considered include Greenhut-Manne, Hitchcock-Koopmans, and Weber-Launhardt. The book reinterprets competitive location theory, focusing on the linkages between Walrasian price equilibrium and the localization of firms. It also demonstrates that competitive location theory offers diverse ideas about the nature of market equilibrium in geographic space and its implications for a broad range of public policies, including free trade, industrial policy, regional development, and investment in infrastructure.

Features
► First major book on traditional location theory since Beckmann’s Location Theory in 1968
► Will cover all the major developments in the intervening period
► Fresh, interdisciplinary approach links ideas on location theory from different areas
► Provides by far the most comprehensive treatment of firm location theory in the literature, with an extensive bibliography

Fields of interest
Regional/Spatial Science; Economic Theory; Economic Geography

Target groups
Academics, students and researchers with an interest in regional science, economic geography, and urban planning, consultants, planners, policy advisors, and other practitioners

Discount group
P

Entropy, Water and Resources
An Essay in Natural Sciences-Consistent Economics

H. Niemes, Helmholtz Centre for Environmental Research, Leipzig, Germany; M. Schirmer, Eawag-Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland

This book at the intersection of natural sciences, economics, and water engineering aims to reduce the gaps between economic theory, natural sciences, and engineering practice. Based on an extended thermodynamic approach, the authors explain which economic assumptions are acceptable for constructing a dynamic model that is consistent with the natural sciences. In particular, the special role of water in the production and reproduction activities will be considered as an integral component. Water is generated in a separate water treatment process and is used to transport the unavoidable by-products of production and reproduction activities to a wastewater sector. In this respect, not only environmental protection aspects, but also the interrelation between the water requirements and the use of non-renewable resources for producing desired consumption goods will be highlighted.

From the contents
1 Introduction.- Part I: The Water Use Model.
3 General Design of Dynamic Models for Water Use.
4 Specifications for Constructing the Water Use Model.

Fields of interest
Environmental Economics; Energy Economics; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution

Target groups
Scientists

Discount group
P

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Applied Technology and Innovation Management: Insights and Experiences from an Industry-Leading Innovation Centre

Rapid application of new technologies and highly leveraged innovation processes are key for the success of companies and organizations in dynamic markets. Based on the experiences of one of the industry's most modern innovation centers this book provides an insight into the tools and methods used to align customer requirements, competitive challenges and technological development. Both, scientists and practitioners, will benefit from the lessons learned and presented in this volume.

Features
- Based on the experiences of one of the industry's most modern innovation centers
- High-tech innovation management as a critical success factor

From the contents

Fields of interest
Technology Management; Information Systems; Management/Business for Professionals

Target groups
Researcher and professionals

Discount group
P

Postponement Strategies in Supply Chain Management

Within supply chain management (SCM), postponement is a deliberate action to delay final manufacturing or distribution of a product until receipt of a customer order. This reduces the incidence of wrong manufacturing or incorrect inventory deployment. Postponement strategies and practices serve to reduce the anticipatory risk in a supply chain. It can be fine-tuned or staged so that only the generic parts shared by a firm's various end products are warehoused, used only once orders come in for whichever products are selling, and will reduce inventory pressures throughout the firm. Despite much research in the area, no one book devoted solely to postponement has been published. At its core, Postponement Strategies in Supply Chain Management analyzes how both pull postponement strategy and form postponement strategy can be leveraged to yield substantial benefits to adopting firms in different competitive environments.

Features
- First book to specifically detail postponement strategies in SCM
- Includes models developed by authors with a look at their possible effects
- Takes a critical look at these strategies as applied across a range of products

Fields of interest
Operations Research/Decision Theory; Production/Logistics; Industrial and Production Engineering

Target groups
Researchers and practitioners in supply chain management; graduate and doctoral students in the field

Discount group
P

Design Research in Information Systems: Theory and Practice

The purpose of Design Research in Information Systems: Theory and Practice is to provide the field, researchers, practitioners and especially graduate students with a comprehensive book that outlines and explains the parameters of design science research, how to conduct such research, and to provide examples of various types of research that has been conducted using design science.

There will be 14 chapters in the book, divided into two parts. The first part of 8 chapters will be written by the authors and the second part of the book will be various types of research examples conducted using design science. These research chapters will demonstrate well-developed design science research from an array of perspectives. The book is a textbook survey on information technology that provides students, academics, and practitioners with a reference tool or educational framework to understand, apply and implement design research methods in Information Systems.

Features
- Will address questions such as "how can design science and design theories provide guidance and inform more effective design and adoption for such complex information systems?" "What do these changes in the organizational use of information technology mean for an information systems design theory?"

Fields of interest
Information Systems; Management of Computing and Information Systems; Information Systems and Communication Service

Target groups
Students and academic professors in the areas of computer science, information systems and software engineering

Discount group
P

Discount group
P

Business and Economics

Due January 2010

2010, VIII, 218 p. Hardcover
- $89.95
ISBN 978-3-540-88826-0

Business and Economics

Due May 2010

- approx. $119.00

Business and Economics

Due March 2010

2010. XVIII, 393 p. 43 illus. With CD-ROM. (Integrated Series in Information Systems, Volume 22) Hardcover
- $99.00
ISBN 978-1-4419-5652-1
**Practical Goal Programming**

Goal programming is an extension of mathematical programming and it has been widely used as an optimization technique that can determine multi-faceted solutions rather than optimizing a single objective. It derives its name by utilizing its multi-objective programming capabilities to satisfy multiple goals within a problem, and it is recognized as the most widely used multi-objective methodology.

As basically as an extension of optimization methods, Practical Goal Programming will have a global market. This book and its treatment of Goal Programming is a particularly practical quantitative decision tool because it helps organizations meet targets and objectives. If objectives turn out to be conflicting, as frequently is the case, then the goal programming solution will suggest the means of coming as close as possible to the given set of goals. The book will include many worked-out examples and tutorial exercises throughout—and will be designed to demonstrate and teach the readers good modeling practice.

**Features**
- Goal programming is an excellent tool that can provide solutions to decision problems arising from a variety of application fields

**Contents**
History and Philosophy of Goal Programming.
- Formulating Goal Programmes.
- Advanced Topics in Goal Programming Formulation.
- Solving and Analysing Goal Programming Models.
- Detection and Restoration of Pareto Inefficiency.
- Trend of Integration and Combination of Goal Programming.
- Case Studies: Application of Goal Programming in Portfolio Selection.
- Reference.

**Fields of interest**
Operations Research/Decision Theory; Optimization; Management/Business for Professionals

**Target groups**
Graduate students, academic researchers and practitioners

**Discount group**
P

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**The Dynamics of International Information Systems**

*Anatomy of a Grounded Theory Investigation*

With this new monograph, Hans Lehmann demonstrates the efficacy of using the Grounded Theory method to study the factors that lead to success – or failure – in the creation and ongoing management of the international information systems (IIS) within global enterprises. He presents three cases of large transnational companies he worked with in this study and describes in detail the steps in the analysis of findings and the incremental conceptualization that finally result in a substantive theory of IIS. There is also a companion website that contains a full set of analysis notes to add a further level of detail. Grounded Theory was developed in the social sciences as a means of recording, analyzing, understanding and then fully explaining what was happening within a given social situation - so that theories could be developed that were firmly grounded in those circumstantial facts.

**Features**
- First book to demonstrate efficacy of grounded theory in IIS
- Can be immediately used to help design and implement IS systems
- Concise monograph explains and demonstrates an effective IS methodology

**From the contents**
Introduction.
- International Information Systems in the Literature.
- Research Problem and Research Question.
- Research Methodology.
- Research Method: Grounded Theory for Descriptive and Exploratory Cases.
- Foundation Case: The Australasian Food Co-op.

**Fields of interest**
Information Systems; Information Systems and Communication Service; Cognitive Psychology

**Target groups**
IS practitioners working in multi-national enterprises, IS researchers, academics teaching IS research methodology

**Discount group**
P

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**Negotiation Success in Asia**

Successful negotiation requires a close understanding of their partner’s culture, their feelings, habits and values. When planning to do business with suppliers and other partners in Asia, a thorough preparation is essential to avoid misunderstandings, confrontations and disappointments, and to ensure the mutually desired success.

This book presents a complete communication and negotiation skills program with special focus on negotiation partners from the different regions of the Asian continent. Readers learn to negotiate the Chinese, the Indian or the Japanese way, and they learn to understand the ways Asians negotiate. Written by a cross-border author, both academically and practitioner, with plenty of experience from Eastern and Western cultures, this book is a valuable resource for anyone relying on business success with Asian partners.

**Features**
- Book draws on the first hand experience of a pan-Asian business expert

**From the contents**
What is Negotiation? - Introduction - Definition of Negotiation - Skilled Negotiators Seek to Build Common Ground - Over-wining Is Bad! - Checkpoint. - Negotiation, the Relationship Way - Pre-Negotiation Stage - Post-Negotiation Stage - Relating and Writing Persuasively to Influence OP - Checkpoint. - Preparation and Planning - Set Your Goals - Know Yourself - Decide Who’s to Negotiate - Prepare for Your Appearance, Dressing and Manners - Preparing for Negotiating with Someone from Another Culture - Special Mention of Indonesia – Capitalising “Flexibility” - Sun Tzu, the Art of War and Negotiation. - Process versus Content - The Process of Negotiation - The Content of Negotiation. - Some Sure-fire Negotiating Techniques and Tactics - Negotiation Techniques and Tactics - The Dangers of Verbal Agreements.

**Fields of interest**
Management/Business for Professionals; Organization/Planning

**Target groups**
Professionals, manager in international business

**Discount group**
P
Patent Law for Computer Scientists
Steps to Protect Computer-Implemented Inventions

Patent laws are different in many countries, and inventors are sometimes at a loss to understand which basic requirements should be satisfied if an invention is to be granted a patent. This is particularly true for inventions implemented on a computer. While roughly a third of all applications (and granted patents) relate, in one way or another, to a computer, applications where the innovation mainly resides in software or in a business method are treated differently by the major patent offices in the US (USPTO), Japan (JPO), and Europe (EPO). The authors start with a thorough introduction into patent laws and practices, as well as in related intellectual property rights, which also explains the procedures at the USPTO, JPO and EPO and, in particular, the peculiarities in the treatment of applications centering on software or computers.

Features
► Explains patent laws in Europe, the US, and Japan
► Gives the reader a guide to a patent examiner’s way of thinking
► Shows the step-by-step development of a patent application
► Presents more than 10 detailed case studies from different computer science applications
► Condenses over 70 years of experience of the authors in the patent business

From the contents
Part I: 1) Introduction
- Part II: Case Studies
- 2) Business Methods
- 3) Administrative Methods
- 4) Digital Rights Management
- 5) Databases and Database Management Systems

Fields of interest
Legal Aspects of Computing; Commercial Law; Law and Economics

Target groups
Companies and software developers interested in patenting their inventions or assets. Attorneys, legal companies, and legal practitioners working on software patenting

Discount group
P

The European Court of Human Rights as a Pathway to Impunity for International Crimes

This book presents contentious case rulings by the European Court of Human Rights providing extensive case notes and questions. The book elucidates just how the Court came in those cases to contribute to lack of State accountability and to impunity for individual perpetrators of international crimes. Issues addressed include the Court’s: derogation of the jus cogens nature of certain, fundamental human rights, grant of State immunity from any liability for systemic torture, unjustified failure to classify certain European Convention on Human Rights violations as international crimes; and improper declining of jurisdiction where States participated in a U.N. peace-building mission that itself involved serious violations of the U.N. Charter human rights principles. The book argues that the moral integrity of the Court’s rulings (rulings that promote and protect international human rights) is an essential aspect of promoting the internationalization of the rule of law.

Fields of interest
European Law/Public International Law

Target groups
Libraries, human rights advocates, NGO’s, international courts

Discount group
P

Confidentiality in International Commercial Arbitration
A Comparative Analysis of the Position under English, US, German and French Law

Arbitration is an essential component in business. In an age when transparency is a maxim, important issues which the laws governing arbitration currently fail to address are the extent to which disclosure of information can be constrained by private agreement along with the extent to which the duty to preserve confidentiality can be stretched. Absent a coherent legal framework and extensive qualitative and quantitative data, it is equally difficult to suggest and predict future directions. This book offers a tool for attaining centralised access to otherwise fragmentary and dispersed material, as well as a comprehensive analysis and detailed exposition of the position in relation to confidentiality in arbitration in the jurisdictions of England, USA, France and Germany.

Contents
Introduction
- The History, Importance and Modern Use of Arbitration
- Problems and Questions Encountered in Relation to Confidentiality in Arbitration
- The Present Status of Confidentiality in International Commercial Arbitration in the Various Jurisdictions
- Critical Analysis, Overall Assessment and Discussion
- Transnational Law and Arbitration
- Towards a Uniform Arbitration Law
- Conclusions

Fields of interest
International & Foreign Law/Comparative Law; European Law/Public International Law

Target groups
Libraries, law firms

Discount group
P
Jurisdiction and Arbitration Clauses in Maritime Transport Documents

A Comparative Analysis

Jurisdiction and arbitration clauses are two different mechanisms that help to ensure impartiality and predictability in international dispute resolution. Despite their benefits, these clauses can be inconvenient for parties that are forced to litigate before distant fora. Moreover, particular problems arise in the context of maritime transport documents. Based on a broad comparative approach, this study seeks to explain the existing rules within their legal context and to develop a coherent system for such clauses, which takes into account the underlying interests as well as economic theory. While offering detailed answers to most issues surrounding jurisdiction and arbitration clauses in maritime transport documents, the book confronts the fundamental question of the limits of freedom of contract in an international setting.

Features
► Overview of the most common forms of jurisdiction and arbitration clauses in maritime transport documents

From the contents

Field of interest
International & Foreign Law/Comparative Law

Target groups
Shipping companies, law firms, libraries

Discount group
P

The Role of the Ocean in Global Cycling of Persistent Organic Contaminants

Refinement and Application of a Global Multicompartment Chemistry-Transport

Persistent organic contaminants, which are bioaccumulative and toxic are a concern for the ecosystems and human health and are regulated under international law (global and regional conventions, besides other). If semivolatile, they cycle in different environmental compartments and follow complex transport pathways. The ocean is believed to play a key role in the cycling by accumulating and storing the contaminant and providing a transport medium. But substance fate in the marine environment is not fully understood yet. Here, the global multicompartment chemistry-transport model MPI-MCTM is used to study the fate of organic pollutants in the marine and total environment. For the first time historical emission data are used in spatially-resolved long-term simulations of an insecticide, DDT, and and an industrial chemical, perfluorooctanoic acid (PFOA).

Fields of interest
Environmental Chemistry; Marine & Freshwater Sciences; Oceanography

Target groups
Scientists, researchers, libraries

Discount group
P

General and International Mineral Policy

Focus: Europe

The demand for mineral resources (iron ore, cement, etc.) has increased substantially in recent years, a development which can be traced back to the economic growth of heavily populated newly industrializing countries. More than fifty percent of the total world population is now interested in the same resources. This change of structure has caused enormous price increases on international commodity markets. In Europe this process can also be noticed in shortages of some mineral resources. National mineral resources policies play a decisive role here, and developing special policies is vital to creating a mineral resources strategy and ensuring a competitive mining industry. This book discusses the mineral resources policies and strategies of important mineral resources importing and exporting countries, examines the status quo of European mineral resources policy and puts forward proposals for the implementation of such a policy for discussion.

Fields of interest
International & Foreign Law/Comparative Law; International Economics; Mineral Resources

Target groups
Entrepreneurs, scientists, students, politicians, civil servants and investors

Discount group
P
Mood Matters
From Rising Skirt Lengths to the Collapse of World Powers

"Mood Matters" makes the radical assertion that all social events ranging from fashions in music and art to the rise and fall of civilizations are biased by the attitudes a society holds toward the future. When the "social mood" is positive and people look forward to the future, events of an entirely different character tend to occur than when society is pessimistic. The book presents many examples from every walk of life in support of this argument. In addition, methods are given to actually measure the social mood and to project it into the future in order to forecast what's likely or not over varying periods of time. Casti's writing is a pleasure to read and its contents an eye-opener.

Features
- Entertaining and gripping in style, but with a serious and important message
- Explains how major world events can be traced to, and predicted by 'social mood'
- Makes sense of apparently unpredictable developments
- Author is: well known for previous popular books; experienced contributor to newspapers and magazines on topic of prediction

Contents
Introducing Unconventional Wisdom.- Why "Stuff Happens.- Why Hits Happen (short timescale events).- Why Wars, Elections, and Economic Crises Happen (medium timescale events).- Why Great Powers Come and Go (long timescale events).- How to Forecast Coming Events.

Fields of interest
Economics/Management Science, general; Popular Science, general

Target groups
General Public, armchair economists, generalists and specialists interested in psychology, economics, and social science, behavioral scientists, decision-makers

Discount group
P

Theory of Function Spaces

The book deals with the two scales Bspq and Fspq of spaces of distributions, where 0<q<8 and 0<p, q<8, which include many classical and modern spaces, such as Hölder spaces, Zygmund classes, Sobolev spaces, Besov spaces, Bessel-potential spaces, Hardy spaces and spaces of BMO-type. It is the main aim of this book to give a unified treatment of the corresponding spaces on the Euclidean n-space Rn in the framework of Fourier analysis, which is based on the technique of maximal functions, Fourier multipliers and interpolation assertions. These topics are treated in Chapter 2, which is the heart of the book. Chapter 3 deals with corresponding spaces on smooth bounded domains in Rn.

Contents

Fields of interest
Science, general

Target groups
Researcher

Discount group
P

Theory of Function Spaces II

"Theory of Function Spaces II" deals with the theory of function spaces of type Bspq and Fspq as it stands at the present. These two scales of spaces cover many well-known function spaces such as Hölder-Zygmund spaces, (fractional) Sobolev spaces, Besov spaces, inhomogeneous Hardy spaces, spaces of BMO-type and local approximation spaces which are closely connected with Morrey-Campanato spaces. "Theory of Function Spaces II" is self-contained, although it may be considered an update of the author's earlier book of the same title. The book's seven chapters start with a historical survey of the subject, and then analyze the theory of function spaces in Rn and in domains, applications to (exotic) pseudo-differential operators, and function spaces on Riemannian manifolds.

Contents
Preface.- Chapter 1 How to Measure Smoothness.- Chapter 2 The Spaces Bspq and Fspq: Definitions and Characterizations.- Chapter 3 Atoms, Oscillations, and Distinguished Representations.- Chapter 4 Key Theorems.- Chapter 5 Spaces on Domains.- Chapter 6 Mapping Properties of Pseudodifferential Operators.- Chapter 7 Spaces on Riemannian Manifolds and Lie Groups.- References.- Symbols.- Index.

Field of interest
Science, general

Target groups
Researcher

Discount group
P
V-Learning
Distance Education in the 21st Century Through 3D Virtual Learning Environments

Features
- Gives practical examples from over six years of work in 3D virtual learning environments for online education
- It gives a theoretical framework through a synopsis of work supporting the use of virtual learning environments in education

Fields of interest
Educational Technology; Learning and Instruction; Computers and Education

Target groups
Distance learning administrators, university CIO’s, university faculty and students, libraries, virtual high schools, home schools and to researchers in virtual worlds and learning sciences

Discount group
P

Revisiting The Chinese Learner
Changing Contexts, Changing Education

This book examines teaching and learning in Chinese societies and advances understanding of ‘the Chinese learner’ in changing global contexts. Given the burgeoning research in this area, pedagogical shifts from knowledge transmission to knowledge construction to knowledge creation, wide-ranging social, economic and technological advances, and changes in educational policy, Revisiting the Chinese Learner is a timely endeavor.

The book revisits the paradox of the Chinese learner against the background of these educational changes; considers how Chinese cultural beliefs and contemporary change influence learning; and examines how Chinese teachers and learners respond to new educational goals, interweaving new and old beliefs and practices. Contributors focus on both continuity and change in analyzing student learning, pedagogical practice, teacher learning and professional development in Chinese societies.

Features
- Debunks stereotypes about Chinese teachers and learners
- Advances our understanding of the changing Chinese learner
- Considers traditional and contemporary influences on pedagogies
- Considers the influence of educational reform on teaching and learning in Chinese societies
- Synthesizes earlier seminal research on Chinese learners and charts new directions

Fields of interest
International and Comparative Education; Curriculum Studies; Educational Policy

Target groups
Scholars, educators and post-graduate students

Discount group
P

Public Policy for Academic Quality
Analyses of Innovative Policy Instruments

Over the last decade the structure of higher education in most countries has undergone significant change brought about by social demands for expanded access, technological developments, and market forces. In this period of change the traditional concerns with access and cost have been supplemented by a new concern with academic quality. As a consequence, new public policies on academic quality and new forms of academic quality assurance have rapidly emerged and swiftly migrated across continents and around the globe.

The growing public debate about academic quality assurance within and across countries however has not always been well informed by analyses of the strengths and weaknesses of these new policy instruments. The Public Policy for Academic Quality Research Program (PPAQ) was designed to provide systematic analyses of innovative external quality assurance policies around the world.

Features
- Summarizes the results from the multi-year international research program on Public Policy for Academic Quality (PPAQ)
- Presents analyses of fourteen innovative national academic quality assurance instruments, which provide systematic, fair-minded assessments of the goals, implementation problems, and impacts of these new policies

Fields of interest
Higher Education; Educational Policy

Target groups
Professors, researchers and students in the field of higher education, practitioners in the field of academic quality assurance and policy makers in higher education

Discount group
P

Humanities, Social Sciences and Law
Due February 2010
► $189.00

Humanities, Social Sciences and Law
Due March 2010
► approx. $139.00

L. A. Annetta, E. Folta, M. Klesath, North Carolina State University, Raleigh, NC, USA

C. K. Chan, N. Rao, The University of Hong Kong, Hong Kong (Eds.)

D. Dill, University of North Carolina, Chapel Hill, CA, USA; M. Beerkens, University of Twente, Enschede, The Netherlands (Eds.)
Reforming Higher Education in Vietnam

Challenges and Priorities

Vietnam is a dynamic member of the community of Southeast Asian nations. Consistent with aspirations across the region, it is seeking to develop its higher education system as rapidly as possible. Vietnam’s approach stands out, however, as being extremely ambitious. Indeed, it may be at risk of attempting to do too much too quickly. By 2020, for example, Vietnam expects its higher education system to be advanced by modern standards and highly competitive in international terms. This vision faces many challenges. The economy, though growing rapidly, remains reliant on the availability of unskilled labour and the exploitation of natural resources, and decision making in many areas of public life continues to be hamstrung by a legacy of over-regulation and centralised control. A large number of goals and objectives have been set for reform of the higher education system by 2020. The success of these reforms will have a major bearing on the future quality of the system.

Features

► Sole up-to-date text on recent developments in higher education in Vietnam
► Book presents a fascinating case-study how one Asian country that 20 years ago moved to a market economy is approaching reform of modernisation of its higher education system

Fields of interest

Higher Education; International and Comparative Education; Administration, Organization and Leadership

Target groups

Researchers involved in teaching and research in higher education, educational administration, comparative and international studies, development studies, and educational finance, university and college presidents and administrators, staff of major international aid and development organisations and government ministries

Discount group

P
New Science of Learning
Cognition, Computers and Collaboration in Education

The earliest educational software simply transferred print material from the page to the monitor. Since then, the Internet and other digital media have brought students an ever-expanding, low-cost knowledge base and the opportunity to interact with minds around the globe—while running the risk of shortening their attention spans, isolating them from interpersonal contact, and subjecting them to information overload.

The New Science of Learning: Cognition, Computers and Collaboration in Education deftly explores the multiple relationships found among these critical elements in students’ increasingly complex and multi-paced educational experience. Starting with instructors’ insights into the cognitive effects of digital media—a diverse range of viewpoints with little consensus—this cutting-edge resource acknowledges the double-edged potential inherent in computer-based education and its role in shaping students’ thinking capabilities.

Features
► Reflects computational developments and their impacts on education ► Offers a qualitatively different approach to meet the demands of twenty-first century skills ► Critically examines the scientific understanding of future learning

From the contents

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

Target groups
Researchers in educational psychology, counseling, instructional design, educational technology and the learning sciences

Discount group
P

Learning Through Teaching Mathematics
Development of Teachers’ Knowledge and Expertise in Practice

This volume explores how and when teachers’ knowledge develops through teaching. The book presents international views on teachers’ learning from their practice; the chapters are written by mathematicians or mathematics educators from Brazil, Canada, Israel, Mexico, UK, and USA. They address diverse content – numerical literacy, geometry, algebra, and real analysis – and a variety of levels – elementary school, secondary school, undergraduate mathematics, and teacher education courses. The authors employ a variety of research methodologies and frameworks for the analysis of the developments of mathematics teachers’ knowledge.

Features
► Is innovative in its systematic view on teaching of mathematics as a source for teachers’ own learning ◄ Contains interesting and challenging mathematical examples that teachers learned when they taught mathematics ◄ Contains a variety of research methodologies and frameworks for the analysis of the developments of mathematics teachers’ knowledge

Fields of interest
Mathematics Education; Teaching and Teacher Education; Learning and Instruction

Target groups
Mathematics educators, educational researchers, teacher educators, mathematics teachers

Discount group
P

International Research Handbook on Values Education and Student Wellbeing

Informed by the most up-to-date research from around the world, as well as examples of good practice, this handbook analyzes values education in the context of a range of school-based measures associated with student wellbeing. These include social, emotional, moral and spiritual growth – elements that seem to be present where intellectual advancement and academic achievement are being maximized. This text comes as ‘values education’ widens in scope from being concerned with morality, ethics, civics and citizenship to a broader definition synonymous with a holistic approach to education in general. This expanded purview is frequently described as pedagogy relating to ‘values’ and ‘wellbeing’.

This contemporary understanding of values education, or values and wellbeing pedagogy, fits well with recent neuroscience research.

Features
► Shows that values education is essential to effective schooling ► Links the effects of values education to all the important educational measures ► Shows that values education is a worldwide, contemporary phenomenon ► Shows that values education fits well with updated brain and pedagogical research ► Illustrates that values education is a means to holistic student and teacher wellbeing

Fields of interest
Educational Philosophy; Curriculum Studies; Religion and Education

Target groups
Educational researchers, cognition, social and behavioural scientists, educational bureaucrats, school principals and teacher educators

Discount group
P
Changing Educational Landscapes

Educational Policies, Schooling Systems and Higher Education – a comparative perspective

Analyzing educational landscapes – the fundamental values, principles and institutions of the sector – is a highly complex and demanding task for any researcher. Like shifting desert sands, these aspects of education are in a constant state of flux, changing according to the unpredictable economic, social, cultural and geo-political circumstances of late modernity. Key aspects of the intricate, fluid and multifarious contemporary setting can always escape the researcher’s necessarily selective observation. The contributors to this book share the view that it is wise, therefore, to take note of other people’s ideas, perceptions and perspectives, to compare notes and reflect critically on them. Thus the papers presented here are a critical and comparative analysis of today’s changing educational landscapes. They are an exploration of some of the forces and factors that induce these changes, and also examine some of their most significant implications.

Features
- The themes of the book and the methodologies reflect the state-of-the-art in the field of comparative education
- The selected papers deal with the most debated current issues on the international agenda of education
- Focusses on several – rather than one – aspects of education, from various perspectives and in different countries

Fields of interest
International and Comparative Education; Educational Policy; Higher Education

Target groups
Researchers and policy makers in comparative education, education policy and education studies

Discount group
P

Gender and Sexual Diversity in Schools

Issues related to gender and sexual diversity in schools can generate a lot of controversy, with many educators and youth advocates under-prepared to address these topics in their school communities. This text offers an easy-to-read introduction to the subject, providing readers with definitions and research evidence, as well as the historical context for understanding the roots of bias in schools related to sex, gender, and sexuality. Additionally, the book offers tangible resources and advice on how to create more equitable learning environments. Topics such as working with same-sex parenting families in elementary schools; integrating gender and sexual diversity topics into the curriculum; addressing homophobic bullying and sexual harassment; advising gay-straight alliances; and supporting a transgender or gender non-conforming student are addressed.

Features
- is the first volume to integrate the research, theory, and practical ideas connected to issues of sex, gender, and sexual orientation in the K-12 setting
- addresses how factors relating to sex, gender, and sexual orientation shape and inform the experiences of students and teachers in schools
- fills an important gap in most teacher education courses

Fields of interest
Sociology of Education; Gender Studies; Teaching and Teacher Education

Target groups
Teacher educators and academic researchers in education, social work, school counseling, school leadership/administration, women’s/gender/sexuality studies

Discount group
P

Rediscovering Apprenticeship

Research Findings of the International Network on Innovative Apprenticeship (INAP)

The rediscovery of the value of apprenticeships has been one of the most significant trends in vocational education in recent years, and has prompted an array of research and development projects in countries around the world. In this volume, the renewed interest in the apprenticeship tradition and the various steps towards the implementation of innovative apprenticeship programmes are analysed and discussed from different perspectives. Beginning with a number of chapters that describe recent developments in apprenticeship training in different national contexts, the book moves on to analyze the way in which both the quality and profitability of apprenticeship act in concert as the most influential drivers of innovation in this field. In sum, this book makes an important contribution to the international literature on apprenticeship.

Features
- Unique book that presents the tradition of apprenticeships and how it is being rediscovered around the world
- Presents how a renewed interest in apprenticeships is stimulating international development projects in dual vocational education

Fields of interest
Professional and Vocational Education; Educational Policy; International and Comparative Education

Target groups
Researchers on VET, audience of Conferences on VET, such as INAP, 17-18.9.09 in Turin, decision makers / stakeholders in VET, students, VET teachers and trainers

Discount group
P

Humanities, Social Sciences and Law

Due February 2010

2010. X, 290 p. Hardcover
$139.00 ISBN 978-90-481-8533-7

Humanities, Social Sciences and Law

Due April 2010

2010. Approx. 135 p. (Explorations of Educational Purpose, Volume 10) Hardcover
$139.00 ISBN 978-90-481-8558-0

Humanities, Social Sciences and Law

Due January 2010

$139.00 ISBN 978-90-481-3115-0
Cultural Studies of Science Education

Series editors: K. Tobin, W. Roth

The series is unique in focusing on the publication of scholarly works that employ social and cultural perspectives as foundations for research and other scholarly activities in the three fields implied in its title: science education, education, and social studies of science.

The aim of the series is to establish bridges to related fields, such as those concerned with the social studies of science, public understanding of science, science/technology and human values, or science and literacy. Cultural Studies of Science Education, the book series explicitly aims at establishing such bridges and at building new communities at the interface of currently distinct discourses. In this way, the current almost exclusively focus on science education on school learning would be expanded becoming instead a focus on science education as a cultural, cross-age, cross-class, and cross-disciplinary phenomenon. The book series is conceived as a parallel to the journal Cultural Studies of Science Education, opening up avenues for publishing works that do not fit into the limited amount of space and topics that can be covered within the same text.

Coteaching in International Contexts

Research and Practice

Coteaching is two or more teachers teaching together, sharing responsibility for meeting the learning needs of students and, at the same time, learning from each other. Working as collaborators on every aspect of instruction, coteachers plan, teach and evaluate lessons together. Over the past decade, because coteaching can be highly beneficial to both students and teachers it has become an increasingly important element of science teacher education and is expanding into other content areas and educational settings. This edited book brings together ten years’ work on the research and the practice of coteaching and its impact on teaching and learning, predominantly in the sciences. It includes contributions from Europe, United States and Australia and presents an overview of theory and practice common to most studies.

Features

- Uses several different theoretical lenses to explore coteaching and its impact in science classrooms and on learners
- Illustrates that there is not ‘one theory’ or ‘one model’ of coteaching, any more than there is a single theory of teaching, however there are commonalities that can be drawn from across the diverse coteaching contexts

Fields of interest

Science Education; Teaching and Teacher Education

Target groups

Academics and policy makers in science education

Discount group

P

Teaching Africa

Towards a Transgressive Pedagogy

Written from the perspective of a knowledge base and educational practice that are both African-centred, this volume uses a discursive pedagogy that is anti-colonial in origin. It theorizes colonial – and re-colonial – relations and the implications of imperial structures on knowledge production and use; the understanding of indigenousness; and the pursuit of agency, resistance and subjective politics.

Using a refined definition of colonial, less as ‘foreign’ or ‘alien’ but more ‘imposed and dominating’, the author shows us how colonialism is domesticated and how those who have been oppressed by dominant/hegemonic discourses may find it difficult to step out of them, let alone challenge or resist them. The book is a call for a critical interrogation of dominant knowledge about Africa in order to help the contemporary learner come to grips with the challenges and possibilities of knowing about the African world and the African human condition.

Features

- Uses an Anti-colonial discursive platform to address distorted Eurocentric views of Africa
- Raises ontological and epistemological questions about teaching methods and methodologies relating to Africa, by addressing the pedagogic, instructional and communicative need and urgency of what it means to critically teach about Africa

Fields of interest

Non-Western Philosophy; Philosophy of Education

Target groups

Students, educators, researchers, policy workers, curriculum specialists, and community and social practitioners; high schools/colleges and universities in North America, Africa and Europe; international organizations such as UNESCO

Discount group

P

Due February 2010

2010. Approx. 320 p. (Cultural Studies of Science Education, Volume 1) Hardcover
- $189.00

Due February 2010

2010. Approx. 135 p. (Explorations of Educational Purpose, Volume 9) Hardcover
- $139.00
ISBN 978-1-4020-5770-0
J. C. Smart, University of Memphis, TN, USA (Ed.)

**Higher Education: Handbook of Theory and Research**

*Volume 24*

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**
- Authoritative in the field of higher education
- Provides state-of-the-art reviews on a wide range of topics in the study of higher education
- Attracts annual contributions from distinguished scholars around the world
- Chapters are frequently cited in major higher education journals

**From the contents**
Contributors.- Why Financial Aid Matters (or Doesn’t) for College Success: Toward a New Interdisciplinary Perspective.- The Use of Matching Methods in Higher Education Research: Answering Whether Attendance at a Two-Year Institution Results in Differences in Educational Attainment.- Othering Research, Researching the Other: De/colonizing Approaches to Qualitative Inquiry.

**Fields of interest**
Higher Education; Curriculum Studies; Administration, Organization and Leadership

**Target groups**
Researchers, students, administrators, and policy makers in higher education

**Discount group**
P

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J. C. Smart, University of Memphis, TN, USA (Ed.)

**Higher Education: Handbook of Theory and Research**

*Volume 25*

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**
- Authoritative in the field of higher education
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- Attracts annual contributions from distinguished scholars around the world
- Chapters are frequently cited in major higher education journals

**From the contents**

**Fields of interest**
Higher Education; Curriculum Studies; Administration, Organization and Leadership

**Target groups**
Researchers, students, administrators, and policy makers in higher education

**Discount group**
P

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J. Zajda, Australian Catholic University, Fitzroy, VIC, Australia (Ed.)

**Globalisation, Ideology and Education Policy Reforms**

The eleventh in the 12-volume book series Globalisation, Comparative Education and Policy Research, this work sets out to explore the inter-relationship between ideology and education reforms, setting it in a global context. With this as its focus, the chapters represent hand-picked scholarly research on major discourses in the field of comparative education. A compendium of the very latest thinking on the subject, this volume is, like the others in the series, a state-of-the-art sourcebook for researchers, practitioners and policymakers alike. Not only do the chapters offer a timely overview of current issues affecting comparative education and education policy research in what is now a global educational culture, but the work also contains ideas about future directions that policy reforms could take. The book draws upon recent studies in the areas of globalisation, equity, and the role of the State.

**Features**
- Explores conceptual frameworks and methodological approaches applicable in the research of globalisation, ideology and education policy reforms
- Demonstrates ideological imperatives of globalisation and its impact on democracy and equality
- Evaluates the ambivalent and problematic relationship between the State, education reforms and outcomes in education globally

**Fields of interest**
International and Comparative Education; Curriculum Studies; Educational Policy

**Target groups**
Academics and researchers in comparative education and policy research

**Discount group**
P

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Humanities, Social Sciences and Law

**Due January 2010**

2010. XII, 492 p. (Higher Education: Handbook of Theory and Research, Volume 24) Softcover
- $69.95

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Humanities, Social Sciences and Law

**Due April 2010**

- approx. $239.00

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Humanities, Social Sciences and Law

**Due February 2010**

- approx. $139.00
The Acheulian Site of Gesher Benot Ya’aqov Volume II
Ancient Flames and Controlled Use of Fire

The manipulation of fire by early hominins was a turning point in our evolutionary history. Once “domesticated”, fire provided warmth, light and protection from predators, as well as enabling the exploitation of a new range of foods. This book presents the spatial analyses of burned and unburned flint items which provide evidence for the controlled use of fire at the 790,000-year-old Acheulian site of Gesher Benot Ya’aqov (GBY). Clusters of burned flint, interpreted as the remnants of hearths, occur throughout the entire occupational sequence of the site. The fact that fire is repetitively used suggests that the knowledge of fire-making and the technological skills of the Acheulian hominins of Gesher Benot Ya’aqov enabled them to set fire at will in diverse environmental settings.

Control of fire marks a significant landmark in human evolution, providing warmth, protection, and many new foods.

Features
- The manipulation of fire by early hominins was a turning point in our evolutionary history
- This volume features the first time record of controlled use of fire in Eurasia in the Acheulian culture as early as 780,000 years ago

Contents
1. Introduction; 2. framework of research; 3. results; 4. discussion and conclusions.

Fields of interest
Archaeology; Anthropology; Ecology

Target groups
Archaeologists, anthropologists and scientists and researchers with an interest in evolutionary sciences

International Criminal Justice: Theoretical and Legal Perspectives

Justice-related and human rights issues have figured more and more prominently on the international political agenda. This expansion of the justice space is a product of a growing demand for accountability in world politics. Whether the issue is addressing heinous crimes such as genocide, war crimes and crimes against humanity in situations of armed conflict, confronting the inability or reluctance of governments to protect their own populations, or responding to the challenges posed by transnational terrorism; the international community has witnessed the proliferation of institutions and mechanisms, as well as the dynamic interplay between domestic and international processes, in the pursuit of justice-sensitive outcomes. International and hybrid tribunals, UN-led and domestic counter-terrorist initiatives, and the use of force for human protection purposes have demarcated the space within which ethical, political, and legal debates have unfolded in the quest for a more humane world order.

Features
- Strong interdisciplinary focus: international law, human rights and restorative justice
- Connects both international (Europe, Central America, Africa) and United States concerns
- Both theoretical and pragmatic

From the contents
Can Domestically Seated War Crimes Tribunals Generate Positive Externalities?: A Case Study of the Special Court for Sierra Leone. Divided We Stand?: American and European Perspectives in the Fight Against Transnational Terrorism. It Counts, but Only When It Does Not Matter?: Evolving Standards of Decency and the Law of Other Countries.

Fields of interest
Criminology & Criminal Justice; Law Theory/Law Philosophy; Law, general

Target groups
Scholars and students of international law, human rights, and international relations; UN staff; members of Tribunals

Archaeology and Preservation of Gendered Landscapes

Historical archaeology of landscapes initially followed the pattern of Classical Archaeology by studying elite men’s gardens. Over time, particularly in North America, the field has expanded to cover larger settlement areas, but still often with ungendered and elite focus. The editors of this volume seek to fill this important gap in the literature by presenting studies of gendered power dynamics and their effect on minority groups in North America. Case studies presented include communities of Native Americans, African Americans, multi-ethnic groups, religious communities, and industrial communities. Just as the research focus has previously neglected the groups presented here, so too has funding to preserve important archaeological sites.

Features
- Examines gender relations on landscapes and their complex intersection with race, class, ethnicity, and/or religion
- Focuses on minority groups not previously usually addresses in Landscapes Studies
- Explores modern issues of preservation and interpretation of gendered landscapes

From the contents

Fields of interest
Archaeology; Anthropology

Target groups
Researchers in Archaeology and Anthropology, particularly studying Historical Archaeology or Gender Issues

Humanities, Social Sciences and Law

Due March 2010
2010. 82 illus. (Vertebrate Paleobiology and Paleoanthropology) Hardcover
- $129.00

Humanities, Social Sciences and Law

Due June 2010
2010. Approx. 300 p. Hardcover
- approx. $129.00
ISBN 978-1-4419-1101-8

Humanities, Social Sciences and Law

Due January 2010
2010. Approx. 275 p. 50 illus. Hardcover
- approx. $129.00
The Anthropology of Absence
Materialsizations of Transcendence and Loss

In studying material culture, anthropologists and archaeologists use meaningful physical objects from a culture to help understand the less tangible aspects of that culture, such as societal structure, rituals, and values. What happens when these objects are destroyed, by war, natural disaster, or other historical events? Through detailed explanations of eleven international case studies, the contributions reveal that the absence of objects can be just as telling as their presence, while the objects created to memorialize a loss also have important cultural implications.

Covering everything from organ donation, to funerary rituals, to prisoners of war, The Archaeology of Absence is written at an important intersection of archaeological and anthropological study. Divided into three sections, this volume uses the “presence” of absence to compare cultural perceptions of: material qualities and created memory, the mind/body connection, temporality, and death.

Features
► New approach to studying material culture
► Brings together both recent and historical cases
► In-depth, international case studies with broad theoretical applications

From the contents
Introduction.- Presenting the Immaterial.- Negative Archaeology and the Limits of Materialism.- Seeking Providence through Things.- Anticipating Presence at a Contemporary Danish Cemetary.- Voluntary Death and Suicide among Siberian Chukchi.- Perceptions of Immortality in Meaningful Deaths.

Fields of interest
Anthropology; Cultural Heritage

Target groups
Researchers in anthropology and archaeology, particularly those studying material culture and cultural heritage, as well as disaster research

Discount group
P

Collective Action Theory and Empirical Evidence

The volume is divided into six chapters. The introduction covers the theory of collective action in its many manifestations as well as the process of drawing out theoretical implications. The second chapter goes to the core of the mobilization issues, especially with regard to the role of leadership, which is inextricably linked to mobilization. The third chapter applies the concept of adaptation to the development of more productive tactics that promote mobilization in support of a public good and minimize the possibility of repression. In chapter four, five spatial hypotheses based on rationality and formal theories are developed and the role of time in protests is addressed. The fifth chapter focuses on the fundamental problems of terror with evidence from the Basque region of Spain and France from Ireland against the Provisional Irish Revolutionary Army in Northern Ireland. The final chapter surveys the empirical evidence and summarizes the support of collective action theory.

Features
► Provides the first major test of collective action theory implications with empirical evidence on mobilization ► Carries out the testing using data from an ASPA award-winning data set ► Uses theory from three sources to form a triangle for the rebel's dilemma: action, protest strategy, and the state's responses to repress or deter protest

Contents

Fields of interest
Political Science; Sociology; Game Theory, Economics, Social and Behav. Sciences

Target groups
Researchers in political science, sociology, and economics; policymakers concerned with protest and mobilization

Discount group
P

An Historical Analysis of Skin Color Discrimination in America

Victimism Among Victim Group Populations

Racism in America is most-commonly studied as white racism against minority groups (racial, gender, cultural). Often overlooked in this area of study is the discrimination that exists within minority groups. Through a detailed historical and sociological analysis, the author breaks down these pernicious, complex, and often misunderstood forms of skin color discrimination: their origins and their manifestations in modern world.

Shedding new light on these sensitive issues, this volume will allow them to come to the forefront of academic research and open dialogue. This comprehensive work will include coverage of skin color discrimination within racial, ethnic, sexual, and gender minority groups, and their particular forms and consequences.

An Historical Analysis of Skin Color will be an important work for researchers studying the Sociology of Race and Racism, Gender Studies, LGBT Studies, Immigration, or Social Work.

Features
► Explores the historical basis of skin color discrimination in America and its modern forms ► Provides a rare discussion of discrimination within minority groups ► Covers religious, social, political, cultural, and institutional forms of discrimination

From the contents

Fields of interest
Sociology; Social Work

Target groups
Researchers in the areas of sociology of race and racism, gender studies, LGBT studies, immigration, or social work

Discount group
P
Geospatial Analysis and Modelling of Urban Structure and Dynamics

The increasingly urbanized world has created various problems of environment, climate, consumption of resources, and public health, which are closely linked to the side-effects of urbanization such as sprawl, congestion, housing affordability and loss of open space. Fundamental to the urban problems are two separate yet related issues: urban structure and urban dynamics. The chapters collected in this book present an excellent profile of the current state of geospatial analysis and modelling, and demonstrate how these approaches can contribute to the study of various urban issues. The book addresses key themes including new ways of capturing data digitally at the individual level, the development of systems based around networks, the notion of linking hierarchy to networks to morphology as in complexity theory, and the development of new ways of integrating diverse urban processes through simulation paying careful attention to the basic economic and statistical principles of spatial analysis.

Features

► This book covers a wide range of urban issues using advanced geospatial analysis and modelling, including visual analysis
► Foreword by Michael Batty
► Epilogue by Michael F. Goodchild

Fields of interest

Geographical Information Systems/Cartography; Cities, Countries, Regions; Human Geography

Target groups

GIS professionals and researchers, professionals in urban planning and design, policy makers in city development

Discount group

P

The Long View of Crime: A Synthesis of Longitudinal Research

Criminology is concerned with many questions which are inherently longitudinal. For example, what is the life-course of criminal behavior? Is there one general offending pattern or multiple offending patterns over time? Which early risk factors, if any, are strongly predictive of criminal behavior? Can early intervention prevent the development of a criminal career? Longitudinal research allows examination of within-person relationships over time, and allows the examination of developmental sequences and timing. This volume examines longitudinal research in relation to crime and delinquency.

Features

► Answers a Key Question in Criminology: What have we learned from recent longitudinal studies of crime and delinquency? ► Includes a synthesis of longitudinal studies in criminology over the last 25 years ► Brings together prominent scholars in criminology to discuss theory, methodology, and impact of longitudinal studies in criminology

From the contents


Fields of interest

Criminology & Criminal Justice; Personality and Social Psychology; Methodology of the Social Sciences

Target groups

Criminologists and social researchers studying in the fields of crime and delinquency

Discount group

P

Decentralized Development in Latin America

Experiences in Local Governance and Local Development

The Latin American subcontinent appears to have reinvented itself in the 21st century. Its economy has been transformed under liberalization and globalization. Decentralization and the democratic transition have modified the political environment, while local development approaches are replacing the (grand) national-regional development schemes. The current local governance and local development debates refer to very different levels of scale: from small, rural communities to fairly extensive (even international) spaces. It is clear that the development process shows substantial differences between large and small cities, and between core regions and remote rural areas. Indeed, the heterogeneity of the process is strongly influenced by national, regional and local contexts. The empirical studies in this volume show the diversity and complexity of local governance and local development in Latin America, while avoiding stereotypes about the impact of public sector reform and administrative decentralization.

Features

► Examines cases of local governance and local development ► Focuses on the local instead of the national level ► Is based on empirical evidence ► Offers geographical perspectives

Fields of interest

Human Geography; Cities, Countries, Regions; Political Science

Target groups

Geographers, (political) decision makers, and all those interested in political sciences, Latin American studies, and development studies

Discount group

P
Controlling Terrorist Financing
Towards Evidence-Based Mechanisms of Control

Controlling Terrorist Financing critically assesses a key component of counter-terrorism: mechanisms of financial control. Drawing on several studies conducted over the last seven years, including research funded by the US National Institute of Justice, the United Nations Security Council and the World Bank, as well as on his work as a policy advisor to several government agencies and as expert witness in terrorism cases, Nikos Passas argues that current approaches are not only of limited effectiveness but that they even produce counter-productive side effects by undermining security and international cooperation.

While the US and the international community preach a ‘risk-based’ approach, resources and emphasis focus on some areas, while leaving much more vulnerable sectors (e.g. trade and commerce) unattended.

Features
► The definitive book on terrorism finance that will be essential reading for everyone wanting to get a grasp of all sides of the arguments
► The author has worked with prosecution and defense teams in terrorism court cases, as well as with government agencies in the US, Europe and in the Middle East

From the contents

Fields of interest
Criminology & Criminal Justice; Criminal Law; Finance /Banking

Target groups
Criminologists, political scientists, sociologists, security analysts, law policy, enforcement and intelligence communities

Discount group
P

Women at the Border
Gender, Unauthorized Migration and the Feminisation of Survival

Women at the Border analyzes border policing practices currently informed by paradigms of securitization against unauthorized mobility and explores the potential for a paradigm shift to a more ethical regulation of borders. By focusing on the ways women have sought to cross borders in ‘extra’-legal fashion, the book shows how border enforcement differentially impacts on some populations and makes the case that unauthorized migration requires management rather than repulsion and criminalization. When facing the emerging and future challenges of unauthorized mobility, border policing must be recast as a function of human rights that results in greater human security at the border. Examining gender and border policing across Europe, North America and Australia, this book enhances our understanding of the gendered determinants of ‘extra’-legal border crossing, border policing and the changing dynamics of unauthorized mobility.

Features
► International comparative study of the three most fraught international border crossings: the US/Mexico border, Italy’s maritime borders, and the maritime borders around Australia, with important lessons for students, practitioners and academics in Europe, North America and Australia
► First international study of extra-legal border crossing specifically focusing on women

Contents

Fields of interest
Criminology & Criminal Justice; Political Science; Gender Studies

Target groups
Criminologists, sociologists, researchers in the fields of gender studies, migration studies and law

Discount group
P

Advances in Social Science Research Using R

This book covers recent advances for quantitative researchers with practical examples from social sciences. Following twelve chapters written by distinguished authors cover a wide range of issues in all providing practical tools using the free R software. McCullough: R can be used for reliable statistical computing, whereas most statistical and econometric software cannot. This is illustrated by the effect of abortion on crime.

From the contents

Fields of interest
Statistics for Business/Economics/Mathematical Finance/Insurance; Econometrics; Monitoring/Environmental Analysis

Target groups
Researchers

Discount group
P
Assessing Key Criminological Ideas
Criminology's Explanation of Crime in Seven Key Theories

Assessing Key Criminological Ideas presents a uniquely comprehensive, critical look at seven major theories which lie at the core of criminology's explanation of crime and serve as popular platforms for criminological research. The seven theories in the book include: Routine activity theory, Social disorganization theory, Self-control theory, Social bonds theory, Strain theory, Differential association theory, Labelling Theory. The book's aim is to encourage critical thinking about these approaches to the explanation of crime by highlighting strengths and weaknesses which affect their applicability in research and our understanding of what causes, and may prevent, offending. The book also highlights central problems in criminological theorizing as a whole, with each chapter discussing how one prominent theory does or does not address these problems, presenting a synthesis of knowledge concerning key issues concerning in the explanation of crime.

Features
- The first contemporary consolidated source that assesses the key approaches to understanding the problem of crime in the field of criminology
- Will give the reader a clear and complete insight into the state of current criminological theory and future directions

Contents

Fields of interest
Criminology & Criminal Justice; Methodology of the Social Sciences; Psychology Research

Target groups
Criminologists and criminal justice researchers, psychologists, sociologists

Discount group
P

Due June 2010

2010. Approx. 300 p. Hardcover

approx. $119.95
Modalities and Multimodalities

Assisted by: J. Bueno-Soler

This book is intended to provide a philosophically- and historically-based introduction to modal logic, offering to every reader, even those with little specific background, a conceptually clear path through the labyrinth of contemporary modal logic. This is done by emphasizing the notion of multimodality while delineating the formal side of the semantics and proof theory behind the topics in a smooth and gentle pace. The conceptual thread which ties the book together passes through topics like the development of modal logic from standard logic; the syntax and semantics of normal modal systems; the seminal ideas behind completeness, incompleteness, canonicity and finite models; the temporal logics, the logics of knowledge and belief; the generalized syntactical and semantical treatment of multimodalities and finally the pleasures and difficulties of quantified modal logic.

Features
- Unique in providing a philosophically and historically based introduction to modal logic accessible to every reader, emphasizing the notion of multimodality as a background while carefully delineating the mathematics behind the topics in a soft pace

Contents
Modal logic and standard logic.- The syntax of normal modal systems.- The semantics of normal modal systems.- Completeness and canonicity.- Incompleteness and finite models.- Temporal logics.- Epistemic logic: knowledge and belief.- Multimodal logics.- Towards quantified modal logic.

Fields of interest
Logic; Philosophy

Target groups
Logicians, philosophers, linguists, mathematicians, computer scientists

Discount group
P

Human Capacities and Moral Status

Many debates about the moral status of things—for example, debates about the natural rights of human fetuses or nonhuman animals—eventually migrate towards a discussion of the capacities of the things in question—for example, their capacities to feel pain, think, or love. Yet the move towards capacities is often controversial: if a human's capacities are the basis of its moral status, how could a human having lesser capacities than you and I have the same “serious” moral status as you and I? This book answers this question by arguing that if something is human, it has a set of typical human capacities; that if something has a set of typical human capacities, it has serious moral status; and thus all human beings have the same sort of serious moral status as you and I.

Features
- Argues that all of a thing's capacities—“active” and “passive,” “lower-order” and “higher-order”—are relevant to its moral status
- Begins from the moral intuitions most people have about our moral status when we become temporarily “incapacitated” as a result of, say, repairable brain damage
- Draws from ideas found in the moral frameworks of John Rawls and Martha Nussbaum

Fields of interest
Ethics; Theory of Medicine/Bioethics; Philosophy of Medicine

Target groups
Professionals and students in philosophy, bioethics, law, medicine and public policy

Discount group
P

Beyond Mimesis and Convention

Representation in Art and Science

Representation is a concern crucial to the sciences and the arts alike. Scientists devote substantial time to devising and exploring representations of all kinds. From photographs and computer-generated images to diagrams, charts, and graphs; from scale models to abstract theories, representations are ubiquitous in, and central to, science. Likewise, after spending much of the twentieth century in proverbial exile as abstraction and Formalist aesthetics reigned supreme, representation has returned with a vengeance to contemporary visual art. Representational photography, video and ever-evolving forms of new media now figure prominently in the globalized art world, while this “return of the real” has re-energized problems of representation in the traditional media of painting and sculpture. If it ever really left, representation in the arts is certainly back.

Features
- First collection of essays on the topic of art and science in the analytic tradition of philosophy
- Volume features contributions from leading, international experts in various fields in philosophy and art history
- While including students of the arts, the volume offers very different approach to study of
- Representation in art and science than those presently available in the humanities

Fields of interest
Philosophy of Science; Aesthetics; History of Science

Target groups
Philosophers interested in aesthetics, philosophy of science and epistemology, art historians interested in representation and visual studies, historians of science

Discount group
P
**Ethical Questions and International NGO’s**

An exchange between Philosophers and NGO’s

In recent decades there has been a great expansion in the number, size and influence of International Non-Governmental Organisations (INGOs) involved in international relief and development. These changes have led to increased scrutiny of such organisations, and this scrutiny, together with increasing reflection by INGOs themselves and their staff on their own practice, has helped to highlight a number of pressing ethical questions such as: should INGOs attempt to provide emergency assistance even when doing so risks helping to fuel further conflict? How should INGOs manage any differences between their values and those of the people they seek to benefit? How open and honest should INGOs be about their own uncertainties and failures?

**Features**
- Sustained discussion of ethical questions
- INGOs face
- Contributions from both practitioners and moral and political philosophers
- Derives from a dialogue between practitioners and moral and political philosophers
- Framed by an Introduction and Afterword co-written by a development practitioner (Chris Roche) and a philosopher (Keith Horton)

**Fields of interest**
- Ethics; Social Sciences, general; Development Economics

**Target groups**
- Moral and political philosophers, managers of international non-governmental organisations and development practitioners

**Discount group**
P

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**Technical Functions**

**On the Use and Design of Artefacts**

This first book-length study in the philosophy of technical artefacts and their technical functions presents a new action-theoretical account of using and designing called the ICE theory. This theory connects the material side of technical artefacts with the aims of everyday users and the tasks of engineers when designing for those everyday users.

Wybo Houkes and Pieter Vermaas have developed ICE theory in close contact with the engineering literature on designing and the literature on functions in the philosophy of biology and philosophy of mind. As such the book is a telling example of the successful new school of philosophy of technology that is aimed at understanding engineering and technology on their own merits.

The book presents the reader with a broad and detailed understanding of technical artefacts and their functions, which is sensitive to the dynamic and socially structured practices of using and designing.

**Features**
- First book-length study of technical artefacts and their functions
- State-of-the-art resources in analytical philosophy, such as the planning theory of action and analyses of testimony
- Provides a framework for describing and evaluating artefact use and design
- First and only theory of artefact functions that is faithful to the phenomenology of artefact use

**From the contents**
- Use, plans and designing.
- Artefacts and actions.
- Use plans.
- Planning in use.
- Designing plans.
- Standards for use plans.
- Evaluating artefact use and design.
- Function theories.
- Function theories for technical artefacts.
- The intentional function theory.
- Cummins’ causal-role theory of functions.

**Fields of interest**
- Philosophy of Technology; Engineering Design

**Target groups**
- Philosophers of technology

**Discount group**
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Degrees of Belief

The idea that belief comes in degrees is based on the observation that we are more certain of some things than of others. Various theories try to give accounts of how measures of this confidence do or ought to behave, both as far as the internal mental consistency of the agent as well as his betting, or other, behaviour is concerned.

This anthology is the first book to give a balanced overview of these theories. It also explicitly relates these debates to more traditional concerns of the philosophy of language and mind, and epistemic logic, namely how belief simpliciter does or ought to behave. The paradigmatic theory, probabilism (which holds that degrees of belief ought to satisfy the axioms of probability theory) is given most attention, but competing theories, such as Dempster-Shafer theory, possibility theory, and AGM belief revision theory are also considered.

Features
- This is the only anthology also targeting non-researchers in the fast-growing field of formal epistemology, making it suitable as teaching tool
- Distinguished authors introduce the major theories of degrees of belief, so the book is also suitable as authoritative reference work
- Provides a balanced overview of competing theories and so challenges the paradigm of probabilism

From the contents
Plain Belief and Degrees of Belief. Beliefs, Degrees of Belief, and the Lockean Thesis; The Lockean Thesis and the Logic of Belief; Partial Belief and Flat-Out Belief; - What Laws Should Degrees of Belief Obey? Epistemic Probability and Coherent Degrees of Belief; Non-Additive Degrees of Belief; Accepted Beliefs, Revision and Bipolarity in the Possibilistic Framework; A Survey of Ranking Theory; - Probabilism. Accuracy and Coherence.

Fields of interest
Epistemology; Philosophy of Science; Probability Theory and Stochastic Processes

Target groups
Academic philosophers and computer scientists, graduate students in these disciplines

Discount group
P

The Vienna Circle in the Nordic Countries

Networks and Transformations of Logical Empiricism

The rise of scientific (analytic) philosophy since the turn of the twentieth century is linked to the philosophical interaction between, on the one hand, Ernst Mach, the Vienna Circle around Moritz Schlick and Otto Neurath, the Berlin Group (Hans Reichenbach, Carl G. Hempel), and the Prague Group (Rudolf Carnap, Philipp Frank), and, on the other, philosophers and scientists in Denmark (Niels Bohr, Joergen Joergensen), Finland (Eino Kaila, Georg Henrik von Wright and their disciples), Norway (Arne Naess and his students), and Sweden (Åke Petzäll, the journal Theoria and a younger generation of philosophers in Uppsala). In addition, the pure theory of law of Hans Kelsen achieved wide dissemination in the Nordic countries (through, for example, Alf Ross). One of the key events in the relations between the Central European philosophers and those of the Nordic countries was the Second International Congress for the Unity of Science which was arranged in Copenhagen in 1936.

Features
- A detailed and in-depth investigation of the hitherto neglected interaction between Central European Logical Empiricism on the one hand and important philosophers and scientists in the Nordic countries on the other hand • Involving contemporary witnesses (Arne Naess, Jaakko Hintikka) • An account of the continuity and further development of this interaction in the Cold War period after World War II

Fields of interest
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For the past 50 years a select group of scientists has provided advice to the US President, mostly out of the public eye, on issues ranging from the deployment of weapons to the launching of rockets to the moon to the use of stem cells to cure disease. The role of the presidential science adviser came under increasing scrutiny during the administration of George W. Bush, which was highly criticized by many for its use (and some say, misuse) of science. This edited volume includes, for the first time, the reflections of the presidential science advisers from Donald Hornig who served under Lyndon B. Johnson, to John Marburger, the current science adviser, on their roles within both government and the scientific community. It provides an intimate glimpse into the inner workings of the White House, as well as the political realities of providing advice on scientific matters to the presidential of the United States.

Features
✓ This book will offer unique first-hand perspectives of the science advisors to the president, from Lyndon Johnson to George W. Bush
✓ It includes some very unique history (e.g., Edward David's chapter provides perspective on how President Nixon used the science advisor for political purposes that have been reported nowhere else to our knowledge)

Fields of interest
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Target groups
Science policy scholars and practitioners, members of the general public who are interested in learning more about the role of science advice in the White House and the day-to-day realities of providing that advice

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Mashup Cultures

This volume brings together cutting-edge thinkers and scholars together with young researchers and students, proposing a colourful spectrum of media-theoretical, -practical and -educational approaches to current creative practices and techniques of production and consumption on and off the web. Along with the exploration of some of the emerging social media concepts, the book unveils some of the key drivers leading to participatory engagement of the User. Mashup Cultures presents a broader view of the effects and consequences of current remix practices and the recombination of existing digital cultural content. The complexity of this book, which appears on the occasion of the fifth anniversary of the international MA study program ePedagogy Design – Visual Knowledge Building, also by necessity seeks to familiarize the reader with a profound glossary and vocabulary of Web 2.0 cultural techniques.

Features
✓ Media Theory Reader
✓ 5 years of ePedagogy Design, Univ. of Helsinki
✓ Including contributions by Henry Jenkins, Mimi Ito, David Gauntlett, and many others

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Target groups
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