Springer

Customized Book List

Geoscience
Vegetation-Climate Interaction

How Vegetation Makes the Global Environment

This book offers a readable and accessible account of the way in which the world’s plant life partly controls its own environment. Starting from the broad patterns in vegetation which have classically been seen as a passive response to climate, the authors build up from the local scale - with microclimates produced by plants - to the regional and global scale. The influence of plants (both on land and in the ocean) in making clouds, haze and rain are considered, along with plant effects on the composition of greenhouse gases in the earth’s atmosphere. Broad global feedbacks that either stabilize or destabilize the earth’s environment will be explored, in the context of environmental change in the recent geological past, and in the near future. Common contentions and misconceptions about the role of vegetation or forest removal in the spread of deserts will also be considered.

Features

Explains some of the underlying mechanisms by which life controls how our planet works; the climate, the atmosphere and the oceans

Fields of interest

Applied Geosciences; Biogeosciences; Economic Geology; Meteorology/Climatology

Target groups

Undergraduates and graduate students, researchers in the field of environmental sciences and conservationists

Type of publication

Monograph

Due April 2007

Jointly published with Praxis Publishing, UK

2007. XXII, 232 p. (Environmental Sciences) Hardcover

129.95 €
ISBN 978-3-540-32491-1

Isotopes in the Water Cycle

Past, Present and Future of a Developing Science

Environmental isotope and nuclear techniques provide unmatched insights into the processes governing the water cycle and its variability under past and present climates. This monograph is recommended to advanced students and specialists and presents historical perspective, state of the art applications and new developments of isotopes in hydrology, environmental disciplines and climate change studies. The spectrum of isotope applications addressed in this monograph ranges from the assessment of groundwater resources in terms of recharge and flow regime, identification of paleo-groundwater, water balance of river basins and lakes, to studies of the past and present global environmental and climate changes. The contributions are written by renowned specialists in the various application fields.

Features

An up-to-date synthesis of environmental isotope techniques in the hydrological cycle and related environmental studies including past and present climate change and water resources assessment and management

Contents


Fields of interest

Geochemistry; Hydrogeology; Climate Change; Environmental Physics; Limnology

Target groups

Advanced students and specialists dealing with the integration of environmental isotope techniques in hydrological cycle and related environmental studies including past and present climate change and water resources assessment and management

Type of publication

Contributed volume

Due August 2007

2007. XVI, 381 p. Softcover

44.95 €

Exploring the Secrets of the Aurora

Prominent progress in science is inevitably associated with controversies. Thus, young researchers, in particular, have to learn how to persevere during the period of controversy and struggle for acceptance. Unfortunately, the skills needed are not taught in textbooks or monographs, which mostly describe the consensus of contemporary experts. This book, which is based on my own experiences as a scientist, describes the history of the progress made in auroral science and magnetospheric physics by providing examples of ideas, controversies, struggles, acceptance, and success in some instances. Although no general methodology (if any exists) is mentioned, I hope that the reader will learn about the history of progress in auroral science and examples (right or wrong) of dealing with the controversies.

Features

Guides young researchers into a successful science career A personal story of struggle and success written by a famous discoverer Beautiful full-color photos of the Aurora Demonstrates the potential of the new inter-disciplinary field of space weather

Contents

European Metropolitan Housing Markets

This book provides a comprehensive analysis of housing theory and policy with a focus on metropolitan regions. The results are based on case studies of twelve European metropolitan regions, including expert panels organized in each. Using an approach from the field of industrial economics, the analysis is divided into the three related stages “structure”, “conduct” and “performance.” The essential idea is that the structure of a market, defined by market conditions, market growth, forms of competition and control, influences the economic behavior of both companies and households. The effects of this behavior can be observed in the development of prices; exchanged, constructed and maintained housing quantities; location patterns and choice of space. The contributions of this volume reveal significant differences in housing policies between European countries, while at the same time showing that policy effects are well in line with expectations based on traditional housing theory.

Contents

Fields of interest
Regional Science; Landscape/Regional and Municipal Planning

Target groups
Scientists

Type of publication
Monograph

Due May 2007

Flood Risk Management in Europe

In recent years major floods have occurred across Europe causing serious damages and huge financial implications. Flood risk and vulnerability is increasing with increased frequency of occurrence of extreme events due to climate change, changes in land-use, encroachment into floodplains and increasing economic value of assets and businesses. Human lives, property, environment and socio-economics are at increasing risk due to flooding. Recent alarming events in Central Europe, UK and The Netherlands have provided renewed impetus to the development of improved policies and techniques for flood risk management across Europe. Sharing of knowledge and understanding of the practical problems, dilemmas and challenges will aid in the development and implementation of new technologies and strategies of the challenging issues of flood risk management in Europe. This valuable edition brings together 26 peer reviewed articles on technical, socio-economic, environmental and policy aspects of flood risk [...] 

Contents
From the contents Section I: Flood Risk Management Practice. - Section II: Flood Events and Impacts. - Section III: Flood Analysis and Modelling. - Section IV: Flood Forecasting. - Section V: Flood Risk Management Policy. 

Fields of interest
Hydrogeology; Civil Engineering; Environmental Computing/Environmental Modelling; Climate Change

Target groups
Scientists, graduates and all practitioners involved in Flood Risk Management and Flooding, engineers, policy makers and planners, academic libraries

Type of publication
Monograph

Due June 2007


149,95 €
ISBN 978-1-4020-4199-0

Spatial Data on the Web

Spatial data is essential in a wide range of application domains today. While geographical applications remain the key target area, spatial properties are required in other contexts such as computer-aided design, robotics and image processing. Associated with these is the constantly growing number of distributed processing architectures, based on, for example, grid systems, sensor data networks, and personalized smart devices. Spatial Data on the Web links these two research streams, focusing on the modeling and management of spatial data in distributed systems. Belussi and his coeditors have structured the contributions from internationally renowned researchers into four parts. Part I presents models for representing semistructured, multisolution and multiscale data; Part II deals with the integration of spatial data sources; Part III describes approaches to spatial data protection; and, finally, Part IV reports innovative applications for mobile devices. The book offers researchers in academia [...] 

Contents

Fields of interest
Database Management; Geoinformation/Cartography; Computer Applications in Geosciences; Information Storage and Retrieval; Computer Applications

Target groups
Researchers, libraries

Type of publication
Monograph

Due July 2007

2007, XI, 313 p. 111 illus. Hardcover

79,95 €
ISBN 978-3-540-69877-7
Granite Genesis: In-Situ Melting and Crustal Evolution

Granitic rocks are a major component of the continental crust and the many and complex problems of their origin have driven confrontational geologists for over 200 years still are presenting challenges today. Current ideas of granite formation involve lower crustal melting, segregation, ascent (as dykes or plutons) and emplacement in the upper crust. In this book we suggest an alternative model for the origin of granite in terms of in-situ melting-intracrustal convection that physically determines the process from partial melting of mid-upper crustal rocks to formation of a convecting magma layer. We illustrate the model using the geological, geochemical and geophysical studies from Australia, North and South America, Europe and China, and conclude that heat convection within a crustal partial melt layer is essential for the formation of granite magma and that without convection, partial melting of rocks produces migmatites rather than granites. Granite is layer-like within the crust, and shape and [...] Features

Provides a synthesis of current ideas of granite genesis in the earth’s crust developed over the last 20 years Provides an alternative model for granite genesis and a reinterpretation of current ideas Highlights results of Chinese research (published in Chinese) over the last 30 years in English for the first time

Contents

Preface.- Acknowledgements.- 1 Introduction.- 1.1 Rock genesis and its relationship to geosystems.- 1.2 Granites, migmatites and granite problems.- 2 Crustal melting: experiments and conditions.- 2.1 Introduction.- 2.2 Mineral melting.- 2.3 Rock melting – experimental evidence.- 2.4 Structure and composition of the crust.- 2.5 Water in the crust.- 2.6 Crustal heat and partial melting.- 3 In-situ melting and intracrustal convection: granite magma layers.- 3.1 Introduction.- 3.2 Crustal melting I: Initial melting and partial melt layer.- 3.3 Crustal melting II: Convection and formation [...] Fields of interest

Geology; Geophysics/Geodesy; Geochemistry; Mineralogy

Target groups

Scientists and researchers in earth sciences

Type of publication

Monograph

Due March 2007

This book presents a historical panorama of the evolution of demographic thought from its eighteenth-century origins up to the present day, and uses it to demonstrate how the multilevel approach can resolve some of the contradictions that have become apparent and achieve a synthesis of the different approaches employed. Part one guides the reader from period analysis to multilevel analysis, examining longitudinal and event history analysis on the way. Part two is a detailed account of multilevel analysis, its methods, and the relevant mathematical models notably as regards the type of variables being used. Numerous examples, examined across successive sections, make the book clear and easy to follow. The theoretical and epistemological treatment of these problems, during which the foundations of sociology and demography are revisited, and the logical development that leads to the most recent approaches, are handled sufficiently rigorously to satisfy social science specialists while remaining [...] Features

Broadens the scope of demography with a multilevel approach Revisits the foundations of sociology and demography Discards the dualistic approach which pits society against the individual From period analysis to cohort, event history, and multilevel analysis

Fields of interest

Demography; Methodology of the Social Sciences; Epistemology; History of Science; Statistics for Social Science, Education, Public Policy, and Law

Target groups

Postgraduates, academics, students

Type of publication

Monograph

Due August 2007
**Geoscience**

**Model-based Geostatistics**

Geostatistics is concerned with estimation and prediction problems for spatially continuous phenomena, using data obtained at a limited number of spatial locations. The name reflects its origins in mineral exploration, but the methods are now used in a wide range of settings including public health and the physical and environmental sciences. Model-based geostatistics refers to the application of general statistical principles of modeling and inference to geostatistical problems. This volume is the first book-length treatment of model-based geostatistics. The authors have written an expository text, emphasizing statistical methods and applications rather than the underlying mathematical theory. Analyses of datasets from a range of scientific contexts feature prominently, and simulations are used to illustrate theoretical results. Readers can reproduce most of the computational results in the book by using the authors’ R-based software package, geoR, whose usage is illustrated in a computation [...]
Environmental pollution by harmful anthropogenic substances and uncontrolled use of natural reserves have become a global problem and require substantial efforts for developing and applying efficient measures of control, mitigation and abatement. For achieving this goal predictions of possibly resulting risks and impacts are urgently needed for future environmental planning. The majority of environmental quality models is focusing on selected isolated parts of the geo-system though impacts on one compartment usually also affect one or more other parts. There is a strong need to advance to an integral treatment of air, soil and water pollution by combining different models for different media. Furthermore it is imperative to develop and apply modern methods of control theory to environmental risk assessment in order to support mitigation and abatement measures in an optimal way. The aim of the NATO Advanced Research Workshop on "Air, Water and Soil Quality Modelling for Risk and Impact Assessment" [...]

**Features**

Joint treatment of air, water and soil quality Application of control theory and environmental data assimilation Integrated environmental modelling Modelling for security

**Contents**


**Fields of interest**

Environmental Computing/Environmental Modelling; Calculus of Variations and Optimal Control; Optimization; Atmospheric Protection/Air Quality Control/Air Pollution; Soil Science & Conservation; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution

**Target groups**

Scientists working in the field of environmental modelling, numerical modelling, risk and emergency analysis, environmental planning and policy, climate research, geo-system research

**Type of publication**

Proceedings

Due May 2007


159,95 €
Well Logging for Earth Scientists

Well logging lies at the intersection of applied geophysics, petroleum and geotechnical engineering. It has its roots in the tentative electrical measurements in well bores which were made by the Schlumberger brothers some 80 years ago in the earliest days of systematic petroleum exploration. Today, a variety of specialized instruments is used to obtain measurements from the borehole during, as well as after, the drilling process. This readable and authoritative treatment of the physics of these measurements dispels the ‘black magic’ of well log interpretation by relating them, including those obtained by the latest generation of tools, to rock physics. It offers a thorough expose of the physical basis of borehole geophysical measurements, as well as an introduction to practical petrophysics -- extracting desired properties from well log measurements. Well Logging for Earth Scientists, 2nd edition, is thoroughly revised and extended with three new chapters, many new illustrations and expanded and expanded and expanded and expanded.

Features
Dispels the ‘black magic’ of well log interpretation
Thorough expose of the physical basis of geophysical measurement in wells
Introduction to practical petrophysics -- extracting desired properties from well log measurements
Problems for students combines a detailed review of the physics of measurements with an extensive introduction to their interpretation.

Contents
Preface
1. An overview of Well Logging
2. Introduction to Well Log Interpretation
3. Basic Resistivity and Spontaneous Potential
4. Empiricism: The Cornerstone of Interpretation
5. Resistivity: Electrode Devices and How They Evolved
6. Other Electrode and Toroid Devices
7. Resistivity: Induction Devices
8. Multi-array and Triaxial Induction Devices
9. Propagation Measurements
10. Basic Nuclear Physics for Logging Applications
11. Gamma Ray Devices
12. Gamma Ray Scattering and Absorption Measurements
13. Basic Neutron Physics for Logging Applications

Fields of interest
Geophysics/Geodesy; Applied Geosciences; Physics and Applied Physics in Engineering; Mineral Resources; Measurement Science, Instrumentation

Target groups
Students of geophysics and petroleum engineering; practicing geophysicists, geologists, petrophysicists, and hydrologists

Type of publication
Graduate/advanced undergraduate textbook

Due July 2007

The European Information Society

This book presents a state-of-the-art overview of ongoing GI Science research, as presented at the 10th Conference of the Association of Geographic Information Laboratories for Europe (AGILE), held in Aalborg, Denmark. Included are 28 fully peer-reviewed papers covering basic GI Science research themes such as interoperability, geo-ontology, data representation, usability, and data quality; technological advancements (i.e., spatial web services and spatial data infrastructures); as well as applied research on environmental modeling and management, including mobile and collaborative applications.

Fields of interest
Geoinformation/Cartography; Computer Applications in Geosciences

Target groups
Academic libraries with a collection of GIS, spatial information engineers

Type of publication
Monograph

Due July 2007

Introduction to Planetary Science

This textbook is intended to be used in a lecture course for college students majoring in Earth Sciences. Planetary science provides an opportunity for these students to apply a wide range of subject matter pertaining to the Earth to the study of other planets and their principal satellites. In this way, planetary science tends to unify subjects in the Earth Sciences that are traditionally taught separately. Therefore, planetary science is well-suited to be taught as a capstone course for senior undergraduates in geology departments and as an introduction to the solar system in astronomy departments. Both groups of students will benefit because planetary science bridges the gap between geology and astronomy and it prepares geologists and astronomers to participate actively in the on-going exploration of the solar system. The subject matter is presented in 24 chapters that lead the reader through the solar system starting with historical perspectives on space exploration and the development of the [...]
The Spatial Distribution of Microbes in the Environment

Features
Attempts to address issues of scale of microbes juxtaposed with the footprint of their activities on the landscape. Includes discussion of fungi in soils and planktonic microorganisms in water in an attempt to reconcile differences in scale of those organisms to their activity footprint. Provides a primer on quantitative methods used to evaluate scale issues and distributions in an effort to allow readers to [...]”

Contents
Contributing Authors. Preface. Acknowledgements. Introduction; Franklin, R.B., Mills, A.L. Statistical Analysis of Spatial Structure in Microbial Communities; Franklin, R.B., Mills, A.L. Bacterial Interactions at the Microscale - Linking Habitat to Function In Soil; Nunan N., Young, I.M, Crawford, J.W., Ritz, K. Spatial Distribution of Bacteria at the Microscale In Soil; Dechesne, A., Pallud, C., Grundmann, G.L. Analysis Of Spatial Patterns Of Rhizoplane Colonization; Knudsen, G.R., Dandurand, L.-M. Microbial Ecology; Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Biogeosciences

Target groups
Graduate students and scientists in microbiology who are interested in biogeochemical processes and interested in general ecologists, active investigators in general ecology who are just beginning to consider the environmental distribution of populations or communities of newly discovered organisms

Type of publication
Contributed volume

Due July 2007

Colloidal Transport in Porous Media

Colloids are known to be the often neglected phase for the transport of pollutants in aquatic ecosystems. The book covers the basics of abiotic colloid characterization, of biocolloids and biofilms, the resulting transport phenomena and their engineering aspects. The subject is presented from an international group of leading specialists devoted to colloidal sciences.

Features
Presents the analytical, chemical, microbiological, geometrical and hydrological aspects of material transport in aquatic systems and soils

Contents
1 Colloid Facilitated Transport in Natural Porous Media: Fundamental Phenomena and Modelling - 2 Influence of Na-bentonite Colloids on the Transport of Heavy Metals in Porous Media - 3 Colloid Transport Processes: Experimental Evidence from the Pore Scale to the Field Scale - 4 Transport of Colloids in Filter Columns: Laboratory and Field Experiments - 5 Colloid and Microbe Migration in Granular Environments: A Discussion of Modelling Methods - 6 Influence of Biofilms on Colloid Mobility in the Subsurface - 7 Subsurface Transport of Heavy Metals Mediated by Biosolid Colloids in [...]”

Fields of interest
Microbial Ecology; Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Biogeosciences

Target groups
Scientists, graduates, undergraduates, lecturers, libraries, professionals

Type of publication
Monograph

Due April 2007

Transport at the Air-Sea Interface

Predictions of our future climate vary greatly, with detailed forecasts still subject to debate. One key uncertainty is caused by the lack of our present knowledge of transport processes in the air-water interface, which poses the main transfer resistance between the oceans and atmosphere. Modeling and predictions of our global climate can only be improved by gaining a more complete understanding of the mechanisms involved in transporting energy, mass and momentum across the phase boundary. This monograph contains selected, peer-reviewed post-conference contributions of the International Workshop on Transport at the Air-Sea Interface, which took place at Heidelberg University from September 6-8, 2006. The workshop brought together leading scientists from around the world, bridged the gap between modeling and measurements, and sparked new ideas for novel simulation and experimental efforts. The focus of the monograph is on small scale processes directly at the interface and includes the topics: [...]”

Features
Supplies the readers with a unique tool for conducting research in air-sea interactions

Contents

Fields of interest
Climate Change; Environmental Computing/Environmental Modelling, Oceanography

Target groups
Researchers, scientists and PhD students in the fields of Climatology and Environmental Computing

Type of publication
Monograph

Due September 2007
Earthquake Early Warning Systems

During the past few decades of the 20th and the first years of the present Century, economic losses and human casualties due to natural disasters increased exponentially on our planet, mainly because of the increased density of population and industry in high hazard areas. Although the prediction of earthquakes is not practicable yet, the present technology allows a prompt identification of the onset of any dangerous seismic event before it hits an urban area. Hence early warning and rapid disaster information systems are becoming important means for strengthening the resilience of our society against the negative consequences of extreme seismic events. Earthquake early warning can provide an alert within a few tens of seconds in advance. This small lead time may be used to minimize property damage and loss of lives in metropolitan areas and to aid emergency response. The book provides information on the major EEW systems in operation and on the state of the art of the different blocks forming an [...] Contents
1 Real-time Earthquake Damage Mitigation Measures. - 2 Can Earthquake Size be Controlled by the Initial Seconds of Rupture? - 3 The ElarmS Earthquake Early Warning Methodology and Application across California. - 4 Real-time Estimation of Earthquake Magnitude for Seismic Early Warning. - 5 A New Approach to Earthquake Early Warning. - 6 Optimal, Real-time Earthquake Location for Early Warning. - 7 The Virtual Seismologist (VS) Method: a Bayesian Approach to Earthquake Early Warning. - 8 A Strong Motion Attenuation Relation for Early-warning Application in the Campania Region (Southern [...] Fields of interest
Geophysics/Geodesy; Landscape/Regional and Municipal Planning; Geotechnical Engineering

Type of publication
Monograph

Due June 2007

Allocating Public and Private Resources across Generations

In rapidly industrializing countries, demographic changes continue to have significant effects on the well-being of individuals and families, and as aggregate human and financial capital. These effects may be analyzed in terms of inter-generational transfers of time, money, goods, and services. The chapters in this volume greatly develop our understanding of the nature and measurement of transfers, their motives and mechanisms, and their macro-level dimensions, especially in the context of demographic transitions. The chapters include original empirical analyses of datasets from some twenty countries taking the reader beyond the American context in order to test the applicability of some of the theories developed on the basis of American data. They extend the traditional analysis of inter-generational transfers by examining different types of transfers, namely goods, money, assets, time, co-residence and visits. Furthermore, the chapters go beyond the study of traditional parent-child transfers [...] Features
Examines the issue of intergenerational transfers across a wide range of countries Allows us to test the applicability of some of the theories developed on the basis of American data to other social, political and economic contexts Extends the traditional analysis of inter-generational transfers by examining different types of transfers, namely goods, money, assets, time, co-residence and visits The chapters [...] Contents
Demography; Aging; Methodology of the Social Sciences; Sociology

Target groups
Academics, scientists and researchers

Type of publication
Monograph

Due August 2007

Particle-Laden Flow

From Geophysical to Kolmogorov Scales

The dispersion of particles in a flow is of central importance in various geophysical and environmental problems. The spreading of aerosols and soot in the air, the growth and dispersion of plankton blooms in seas and oceans, or the transport of sediments in rivers, estuaries and coastal regions are striking examples. These problems are characterized by strong nonlinear coupling between several dynamical mechanisms. As a result, processes on widely different length and time scales are simultaneously of importance. The multiscale nature of this challenging field motivated the EUROMECH colloquium on particle-laden flow that was held at the University of Twente in 2006. This book contains a selection of the papers that were presented.

Features
Describes state of the art numerical modelling for particle-laden turbulent flow Describes novel experimental techniques for monitoring and quantifying particle dispersion Describes Lagrangian statistics of dispersion in turbulence Connects theory, simulation and experiments of an important multiscale problem in environmental fluid mechanics

Contents
From the contents Part I Dispersion in environmental flows. - Part II Lagrangian statistics, simulation and experiments of turbulent dispersion.- Part III Heavy particles, aggregation and patterns in turbulence.

Fields of interest
Applied Geosciences; Ecology; Mathematical and Computational Physics; Mechanical Engineering; Civil Engineering

Target groups
Engineers with an interest in physics, mathematics, geophysics, civil engineering, mechanical engineering, environmental flow, fluid mechanics and chemistry

Type of publication
Proceedings

Due August 2007

978-1-4020-4790-9

129.95 €
Moment Analysis for Subsurface Hydrologic Applications

This book deals with the concept of moments, and how they find application in subsurface hydrologic problems-particularly those dealing with solute transport. This book will be very valuable to researchers who are beginning to learn about moment analysis, and will also be of interest to advanced researchers as well. Both temporal and spatial moments are dealt with in some detail for a wide variety of problems. Several examples using experimental data, both from laboratory columns and field experiments, are provided to give the readers a clear idea about the scope of this method. Apart from conventional uses of moments for solute transport problems, this book contains chapters dealing with use of moments in interval computing, vapour phase transport applications, transfer functions to subsurface tile drains, and construction of breakthrough curves from knowledge of moments.

Features
A detailed exposure to moment analysis Derivations of theoretical results Applications using laboratory and field data Investigate the role of moments in various problems

Contents

Fields of interest
Hydrogeology; Partial Differential Equations; Math. Applications in Geosciences

Target groups
Researchers and practitioners in subsurface contamination and solute transport, researchers interested in learning about method of moments

Type of publication
Monograph

Due June 2007

Probabilistic Methods in Geotechnical Engineering

Soils and rocks are among the most variable of all engineering materials, and as such are highly amenable to a probabilistic treatment. The application of statistical and probabilistic concepts to geotechnical analysis is a rapidly growing area of interest for both academics and practitioners. The book is therefore aimed at students, researchers, and practitioners of geotechnical engineering who wish to keep abreast of developments in this evolving field of study. The course content and will assume no more that an introductory understanding of probability and statistics on the part of the course participants. The main objective is to present a state-of-the-art training on probabilistic techniques applied to geotechnical engineering in relation to both theory and practice. Including: (a) discussion of potential benefits of probabilistic approaches as opposed to the classical "Factor of Safety" methods, to review sources of uncertainty in geotechnical analysis and to introduce methods of LRFD and ...

Fields of interest
Geotechnical Engineering; Civil Engineering; Probability Theory and Stochastic Processes

Target groups
Practitioners and researchers in geotechnical engineering

Type of publication
Monograph

Due August 2007

Encyclopedia of Geomagnetism and Paleomagnetism

Understanding the process underlying the origin of Earth magnetic field is one of the greatest challenges left to classical Physics. Geomagnetism, being the oldest Earth science, studies the Earth’s magnetic field in its broadest sense. The magnetic record left in rocks is studied in Paleomagnetism. Both fields have applications, pure and applied: in navigation, in the search for minerals and hydrocarbons, in dating rock sequences, and in unraveling past geologic movements such as plate motions they have contributed to a better understanding of the Earth. Consisting of more than 300 articles written by ca 200 leading experts, this authoritative reference encompasses the entire fields of Geomagnetism and Paleomagnetism in a single volume. It describes in fine detail at an assessable level the state of the current knowledge and provides an up-to-date synthesis of the most basic concepts. As such, it will be an indispensable working tool not only for geophysicists and geophysics students but also ...

Features
- More than 300 entries by some 200 of the foremost experts from all over the world - Up-to-date and comprehensive - The first single encyclopedia to cover the combined fields of Geomagnetism and Paleomagnetism - Individual entries range in length from 500 to 12000 words - Draws together a unique overview of world wide geomagnetic observatories - Includes numerous illustrations and a 16 page full color ...

Contents

Fields of interest
Geophysics/Geodesy; Geology; Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Mineralogy; Math. Applications in Geosciences

Target groups
Faculty and students in geophysics, geology, physics, atmospheric science, environmental science, engineering, mathematics, and biology

Type of publication
Encyclopedia

Due June 2007


399,00 €
ISBN 978-1-4020-3992-8
**Encyclopedia of Geomagnetism and Paleomagnetism**

Understanding the process underlying the origin of Earth magnetic field is one of the greatest challenges left to classical Physics. Geomagnetism, being the oldest Earth science, studies the Earth’s magnetic field in its broadest sense. The magnetic record left in rocks is studied in Paleomagnetism. Both fields have applications, pure and applied: in navigation, in the search for minerals and hydrocarbons, in dating rock sequences, and in unraveling past geologic movements such as plate motions they have contributed to a better understanding of the Earth. Consisting of more than 300 articles written by ca 200 leading experts, this authoritative reference encompasses the entire fields of Geomagnetism and Paleomagnetism in a single volume. It describes in fine detail at an assessable level the state of the current knowledge and provides an up-to-date synthesis of the most basic concepts. As such, it will be an indispensable working tool not only for geophysicists and geophysics students but also [...] 

**Features**
- More than 300 entries by some 200 of the foremost experts from all over the world
- Up-to-date and comprehensive

**Fields of interest**
Geophysics/Geodesy; Geology; Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Mineralogy; Math. Applications in Geosciences

**Target groups**
Faculty and students in geophysics, geology, physics, atmospheric science, environmental science, engineering, mathematics, and biology

**Type of publication**
Encyclopedia

**Due July 2007**

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**Fog and Boundary Layer Clouds**

**Fog Visibility and Forecasting**

This topical volume of the Journal of Pure and Applied Geophysics utilizes new information not previously accessible for fog related research; it focuses on surface and remote sensing observations of fog, various numerical model applications using new parameterizations, fog climatology, and new statistical methods. The results presented in this special issue come from research efforts in North America and Europe, mainly from the Canadian Fog Remote Sensing And Modeling (FRAM) and European COST-722 fog/visibility related projects. The students, postgraduates, and researchers, who are interested in cloud physics, physical meteorology, aviation meteorology, climate, weather forecasting, and in other adjacent disciplines, can use this book as a basis for future developments in fog research. It is hoped that this book will lead to new scientific challenges in fog related research, teaching, and applications.

**Features**
- Microphysical observations Satellite observations Statistical methods 3D-fog modelling

**Fields of interest**
Applied Geosciences; Meteorology/Climatology; Hydrogeology; Geosciences, general; Geophysics/Geodesy; Biogeosciences

**Target groups**
Undergraduates, graduates, postgraduates and researchers, who are interested in cloud physics, physical meteorology, aviation meteorology, climate, weather forecasting, government offices, aviation and transportation offices, pilots, marine transportation, air quality offices

**Type of publication**
Proceedings

**Due August 2007**

2007. 316 p. (Pageoph Topical Volumes) Softcover
59.90 €
ISBN 978-3-7643-8418-0

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**Principles of Environmental Chemistry**

Environmental chemistry is becoming increasingly important and is crucial in the understanding of a range of issues, ranging from climate change to local pollution problems. Principles of Environmental Chemistry draws upon sections of the authors’ previous text (Understanding our Environment) and reflects the growing trend of a more sophisticated approach to teaching environmental science at university. This new, revised text book focuses on the chemistry involved in environmental problems. Written by leading experts in the field, the book provides an in-depth introduction to the chemical processes influencing the atmosphere, freshwaters, salt waters and soils. Subsequent sections discuss the behaviour of organic chemicals in the environment and environmental transfer between compartments such as air, soil and water. Also included is a section on biogeochemical cycling, which is crucial in the understanding of the behaviour of chemicals in the environment. Complete with worked examples, the book is [...]

**Features**
- Authoritative authors
- Worked examples and questions included in all chapters

**Contents**

**Fields of interest**
Organic Chemistry; Biogeosciences; Monitoring/Environmental Analysis/Environmental Ecotoxicology; Environment, general; Atmospheric Protection/Air Quality Control/Air Pollution

**Target groups**
Students, academics

**Type of publication**
Contributed volume

**Due May 2007**

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

2007. 280 p. Hardcover
The Archaeometallurgy of Copper

Evidence from Faynan, Jordan

The book deals with the ancient exploitation and production of copper, exemplified by the mining district of Faynan, Jordan. It is an interdisciplinary study that comprises (mining-)archaeological and scientific aspects. The development of organisational patterns and technological improvements of mining and smelting through the ages (5th millennium BC to Roman Byzantine period), in a specific mining region, is discussed. Principles of modern archaeometallurgy in the field and laboratory are explained. An important focus are mineralogical and chemical slag investigations and on the role of trace elements and lead isotope abundance ratios in ores and metals. Provenance studies show the distribution of Faynan copper in the Southern Levant in the Early Bronze Age.

Contents

Fields of interest
Mineralogy; Geochemistry; Mineral Resources; History

Target groups
Graduates, lecturers, scientists, professionals, undergraduates, libraries

Type of publication
Monograph

Due June 2007

Handbook of Paleoanthropology


Paleoanthropology is perhaps the most multidisciplinary of all the sciences. Any complete account of the evolution and cultural and biological context of Homo sapiens must combine information from geology, paleoecology, primatology, evolutionary biology and a host of other fields. Above all, historical information needs to be combined with, and interpreted in the light of, what we know of the living world. Paleoanthropology is also an actively developing field in which much remains to be settled. The three volumes of this handbook bring together contributions by the world’s leading specialists that reflect the broad spectrum of modern paleoanthropology, thus presenting an indispensable resource for both professionals and students alike. Volume 1 deals with principles, methods, and approaches. In recent years, enormous advances have been made in such areas as phylogenetic analysis, paleoecology and evolutionary theory and philosophy. The contributions in this first volume present the state of the [...]
Environmental Modeling
Using MATLAB

The book has two aims: to introduce basic concepts of environmental modeling and to facilitate the application of the concepts using modern numerical tools such as MATLAB. It is targeted at all natural scientists dealing with the environment: process and chemical engineers, physicists, chemists, biologists, biochemists, hydrologists, geochemists and ecologists. MATLAB was chosen as the major computer tool for modeling, firstly because it is unique in its capabilities, and secondly because it is available in most academic institutions, in all universities and in the research departments of many companies.

Contents

Fields of interest
Math. Appl. in Environmental Science; Computer Applications in Geosciences; Appl.Mathematics/Computational Methods of Engineering; Math. Applications in Chemistry; Computer Appl. in Life Sciences; Mathematical and Computational Physics

Target groups
Scientists, researchers, graduate students, libraries, institutes

Type of publication
Monograph

Due September 2007

99.95 €

Climate Change -
Environment and History of the Near East

This survey of the ancient levels of lakes, rivers and the sea, as well as changes in the compositions of stalagmites and sediments reveals an astonishing correlation of climate changes with the emergence and collapse of civilizations in the Middle East. Each warm period has been characterized by aridization, economic crisis and mass migration, whereas cold periods brought abundant rain, prosperity and settlement in the arid lands. The authors conclude that climate change has been the decisive factor in the history surrounding the origins of the ‘cradle of civilization’.

Contents
Introduction.- Chapter I: The pendulum of paradigms.- Chapter II: Constructing the jigsaw puzzle of paleo-climates.- Chapter III: The Near East: A bridge from the garden of eden to the field of tools.- Chapter IV: The great transition – from farming villages to urban centers.- Chapter V: The urban revolution and the dawn of history.- Chapter VI: Dark age, Renaissance, and decay.- Chapter VII: migrations and settings from the end of the Late Bronze to the Early Iron Age.- Chapter VIII: The Age of Iron and Empires.- Chapter IX: Crusaders, Mamluks, and Ottomans on the eve of the era of [...] 

Fields of interest
Climate Change; Sedimentology; Geography; Geology/Natural Processes; Anthropology; Sociology

Target groups
Scientists, researchers; institutes, libraries (climatologists, geophysicists/Geodesy; Meteorology/Climatology; Astronomy; Planetology)

Type of publication
Monograph

Due May 2007

2007. XXII, 288 p. 34 illus. Hardcover
129.95 €
ISBN 978-3-540-69851-7

Handbook of the Solar-Terrestrial Environment

The Handbook of the Solar-Terrestrial Environment is a unique compendium. Recognized international leaders in their field contribute chapters on basic topics of solar physics, space plasmas and the Earth’s magnetosphere, and on applied topics like the aurora, magnetospheric storms, space weather, space climatology and planetary science. This book will be of highest value as a reference for researchers working in the area of planetary and space science. However, it is also written in a style accessible to graduate students majoring in those fields.

Features
A unique compendium on the Solar-Terrestrial Environment by the leading experts worldwide Contains &nbsp;parts on the Sun and the Solar Wind, the Earth, Space Plasmas, and on Processes and Phenomena in the Solar-Terrestrial Environment

Contents

Fields of interest
Extraterrestrial Physics, Space Sciences; Geophysics/Geodesy; Meteorology/Climatology; Astronomy; Planetology

Target groups
Researchers, libraries

Type of publication
Handbook

Due August 2007

2007. XIV, 539 p. 255 illus., 63 in color. Hardcover
159.95 €
ISBN 978-3-540-46314-6
A Changing World
Challenges for Landscape Research

Landscape Research has been established as an interdisciplinary field dealing with complex environmental processes at multiple spatial and temporal scales. During the course of its history, various societal, technological and philosophical stimuli have shaped Landscape Research, e.g. the declaration of Landscape Ecology in the 1930s and contemporary global technological and societal developments. Modern landscape research presently uses mathematical, statistical and advanced simulation techniques to combine empirical observations with known theories from ecology, physics, geography, social science and so on. Knowledge is thus updated and quantified via models that are used for estimation, hypothesis testing, prediction and assessment of scenarios. Advances in the computational sciences (e.g. fast computers and vast array of software), space science (e.g. remote sensing) and biological sciences (e.g. genetics) as well as new perspectives in the social sciences play important roles. Research findings [...]

Contents

Fields of interest
Landscape Ecology; Landscape/Regional and Municipal Planning; Ecology; Biodiversity; Ecosystems; Environmental Management

Target groups
Researchers, advanced students in environmental sciences, landscape managers, specialists in standard methods of landscape research

Type of publication
Contributed volume

Due March 2007

Introduction to Bayesian Statistics

The Introduction to Bayesian Statistics (2nd edition) presents Bayes’ theorem, the estimation of unknown parameters, the determination of confidence regions and the derivation of tests of hypotheses for the unknown parameters, in a manner that is simple, intuitive and easy to comprehend. The methods are applied to linear models, in models for a robust estimation, for prediction and filtering and in models for estimating variance components and covariance components. Regularization of inverse problems and pattern recognition are also covered while Bayesian networks serve for reaching decisions in systems with uncertainties. If analytical solutions cannot be derived, numerical algorithms are presented, such as the Monte Carlo integration and Markov Chain Monte Carlo methods.

Features
An easy to understand introduction to Bayesian statistics. Compares traditional and Bayesian methods with the rules of probability presented in a logical way allowing an intuitive understanding of random variables and their probability distributions to be formed

Contents

Fields of interest
Geophysics/Geodesy; Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Geoinformation/Cartography; Image Processing and Computer Vision

Target groups
Students and practitioners applying Bayes statistics to geophysical and geodetic problems

Type of publication
Monograph

Due July 2007

2007. XII. 249 p. 17 illus. Hardcover
89.95 €
ISBN 978-3-540-72723-1

Modelling Land-Use Change

Progress and Applications

The use of land changes over time as both natural and man-made environments are influenced by the pressures associated with the processes of development. The demand for land for new residential housing has been a huge challenge for governments striving to protect greenfield sites across Europe in recent years, whilst regeneration has been a common response to the decline of manufacturing in the old industrial heartlands. The variety of forces that drive change in the use of land are extensive and complex, including spatial planning policies designed at local, regional, national and supra-national levels. In order to understand the mechanisms of change and the impact of policies, the formulation, calibration and testing of models is required. Land-use change models help us to understand the complexities and interdependencies of the components that constitute spatial systems and can provide valuable insights into possible land-use configurations in the future. Models of land-use change incorporate [...]


**Modelling Land-Use Change**

*Progress and Applications*

Models of land-use change incorporate a vast amount of knowledge from a wide range of disciplines. Geography contributes to the understanding of land-use change whilst demography and economics help explain underlying trends. This book offers a cross-sectional overview of current research progress that allows the construction of successful land-use models. The contributions range from methodology and calibration to applications in studies of recent policy implementation and evaluation. The contributors originate from academic and applied research institutes around the world and thus offer an interesting mix of theory and practice in different case study contexts. In summary, land-use change simulation modelling is a relatively new and dynamic field of study and this book provides a full overview of the topic, a wide range of applications (both geographically and thematically), a mix of theory and practice, a synthesis of recent research progress, and educational material for students and teachers.

**Features**

- Full cross-sectional overview of current research progress in land-use modelling, ranging from methodology and model calibration to applications of policy implementation and evaluation
- Combination of academic and applied research contributions
- International mix of theoretical and practical perspectives in different case-study perspectives
- Educational material is provided on a CD that includes demonstration

**Contents**

- Contributing Authors
- Preface
- Acknowledgments
- Modelling land-use change - Part I: Analysis of land-use trends and their driving forces
- Part II: Explanatory models of land-use change - Part III: Optimisation modelling: spatial optimisation in land-use allocation problem - Part IV: Incorporation of new modelling approaches
- Part V: operational land-use simulation models
- Part VI: land-use simulation for policy analysis

- Appendix
- Index

**Fields of interest**

- Landscape/Regional and Municipal Planning
- Computer Applications in Geosciences
- Geoinformation/Cartography
- Math. Applications in Geosciences
- Quantitative Geography

**Target groups**

- Researchers, practitioners, undergraduate and postgraduate students with interests in geography, environmental studies, economics, regional science, land management and planning

**Type of publication**

*Contributed volume*

Due August 2007

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**Applied Stratigraphy**

Few, if any, fundamental disciplines in the earth sciences have seen so many dramatic changes and developments as stratigraphy. The discipline has come to be applied progressively, and indispensably, to nearly all branches of the earth sciences, including such endeavors as charting the course and complexities of life evolution through time, understanding how ancient ecosystems developed and operated, and furnishing data pivotal to exploration and exploitation of strategic mineral resources. This book aims to incorporate major aspects and essential elements underpinning the modern applications and perspectives of stratigraphy. It focuses on traditional and innovative techniques and how these can be utilized in reconstructing the geological history of sedimentary basins and in solving manifold geological problems and phenomena. Each chapter summarizes contributions by leading researchers in the field. It is hoped that this book will provide the reader with key insights into all these aspects and [...] 

**Features**

- Provides innovative and traditional techniques in stratigraphy
- These techniques contribute to geological and paleobiological researches, for example: charting the course and complexities of the evolution of life through time, understanding how ancient ecosystems developed and operated, furnishing data pivotal to strategic mineral exploration

**Contents**

- Evolution of a Concept - Stratigraphy: Evolution of a Concept
- The Search for Patterns: Ordering the Framework - Buried Time: Chronostratigraphy as a Research Tool
- Biostratigraphy's Basis, using Silurian and Devonian examples, with consideration of the Biostratigraphic Complication
- Devonian Palynostratigraphy in Western Gondwana - Carboniferous and Permian Palynostratigraphy
- Biostatigraphy of the Non-marine Triassic: Is a Global Correlation based on Tetrapod Faunas possible?
- The K-T Boundary - The Search for Clues: Analyzing and Sequencing the Record

**Fields of interest**

- Applied Geosciences
- Geochemistry
- Paleontology
- Sedimentology

**Target groups**

- Scientists, researchers, institutes, libraries

**Type of publication**

*Monograph*

Due April 2007

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**Tsunami and Nonlinear Waves**

The need for tsunami research and analysis has grown dramatically following the devastating tsunami of December 2004, which affected Southern Asia. This book pursues a detailed theoretical and mathematical analysis of the fundamentals of tsunamis, especially the evolution and dynamics of tsunamis and other great waves. Of course, it includes specific measurement results from the 2004 tsunami, but the emphasis centres on the nature of the waves themselves and their links to nonlinear phenomena. Throughout, methods of nonlinear dynamics and integrable systems are employed to develop novel concepts for more accurate prediction and hence the reduction of related impacts.

**Features**

- Includes specific measurement results from the 2004 tsunami with emphasis on the nature of the waves themselves and their links to nonlinear phenomena

**Contents**

- Waves in shallow water, with emphasis on the tsunami of 2004
- Integrable Nonlinear Wave Equations and Possible Connections to Tsunami Dynamics
- Solitary waves propagating over variable topography
- Water waves generated by a moving bottom
- Tsunami surge in a river: a hydraulic jump in an inhomogeneous channel
- On the modelling of huge water waves called rogue waves
- Numerical Verification of the Hasselmann equation
- Runup of nonlinear asymmetric waves on a plane beach
- Tsunami Runup in Lagrangian Description

**Fields of interest**

- Oceanography
- Nonlinear Dynamics
- Complex Systems
- Chaos, Neural Networks
- Geology/Natural Processes: Fluids, Geophysics/Geodesy
- Computer Applications in Geosciences

**Target groups**

- Scientists, researchers, institutes, libraries

**Type of publication**

*Monograph*

Due April 2007

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2007, XII, 315 p. 170 illus. Hardcover

99.95 € ISBN 978-3-540-71255-8

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2007, XVI, 471 p. 133 illus., 26 in color. (Topics in Geobiology, Vol. 23) Softcover

74.95 € ISBN 978-1-4020-6683-2

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2007, XVI, 315 p. 170 illus. Hardcover

Thrust Belts and Foreland Basins
From Fold Kinematics to Hydrocarbon Systems

What is the important geographic information recorded in Thrust Belts and Foreland Basins (TBFB) on the evolution of orogens? How do they transcribe the coupled influence of deep and surficial geological processes? Is it still worth looking for hydrocarbons in foothills areas? These and other questions are addressed in the volume edited by Lacombe, Lavé, Roure and Vergès, which constitutes the Proceedings of the first meeting of the new ILP task force on “Sedimentary Basins”, held in December 2005 at the Institut Français du Pétrole, on behalf of the Société Géologique de France and the Sociedad Geológica de España. This volume spans a timely bridge between recent advances in the understanding of surface processes, field investigations, high resolution imagery, analogue-numerical modelling, and hydrocarbon exploration in TBFB. With 25 thematic papers including well-documented regional case studies, it provides a milestone publication as a new in-depth examination of TBFB.

Features
Very successful international meeting of the French and Spanish Geological Societies, hosting the first workshop of the new ILP Task Force on Sedimentary basins

Contents

Fields of interest
Geology; Geophysics/Geodesy; Applied Geosciences; Meteorology/Climatology; Sedimentology

Target groups
Scientists, researchers, professionals; libraries

Type of publication
Proceedings

Due April 2007

GIS for Health and the environment
Development in the Asia-Pacific Region

The book is a compilation of methodological and application developments in spatial epidemiological approaches for environmental and public health studies in the Asia Pacific region. It is intended for practitioners in the field, including geospatial experts, practicing epidemiologists, medical doctors, environmentalists and public health physicians concerned with the impact of environmental exposures on the health of population.

Features
There has been a shortage of materials to document the developments of health GIS in the Asia Pacific region. The proposed book will fill the gap and also inform the direction of research paths and agenda in the subject matter

Fields of interest
Computer Applications in Geosciences; Geoinformation/Cartography; Information Systems and Communication Service

Target groups
Practitioners in the field, including geospatial experts, practicing epidemiologists, medical doctors, environmentalists, toxicologists, statisticians, and public health physicians concerned with the impact of environmental exposures on the health of population.

Type of publication
Monograph

Due July 2007

2007 IX, 310 p. 110 illus. (Lecture Notes in Geoinformation and Cartography) Hardcover

99.95 €
ISBN 978-3-540-71317-3

Cephalopods Present and Past
New Insights and Fresh Perspectives

This book brings together an international group of scientists focusing on present-day and fossil cephalopods, ranging broadly from Paleozoic ammonoids to today’s octopods. It has three general sections dealing with: systematics and evolution; descriptions of hard- and soft part morphology; and ecology, biogeography, and taphonomy. Several highlights include new evidence for the existence of an ink sac in fossil ammonoids, a biogeographic study of clymeniid ammonoids throughout the world, the first record of a radula in baculitite ammonoids, and an in-depth study of octopus ecology in Alaska. The book is remarkable in its treatment of both fossil and living forms at the same time, with the aim of presenting the wide diversity of cephalopods now and in the past.

Features
* The book is a remarkable treatment of both fossil and living forms of cephalopods, with the aim of presenting the wide diversity. * Highlights include new evidence for the existence of an ink sac in fossil ammonoids, a biogeographic study of clymeniid ammonoids throughout the world, and an in-depth study of octopus ecology in Alaska.

Contents
From the contents Part I: Phylogeny and Systematics.- Part II: Morphology of Soft and Hard Tissues.- Part III: Biogeography, Biostratigraphy, Ecology, and Taphonomy

Target groups
Practitioners in the field, including geospatial experts, practicing epidemiologists, medical doctors, environmentalists, toxicologists, statisticians, and public health physicians concerned with the impact of environmental exposures on the health of population.

Type of publication
Contributed volume

Due September 2007

2007, XVII, 482 p. Hardcover

159.95 €
ISBN 978-1-4020-6461-6
Phaeocystis, major link in the biogeochemical cycling of climate-relevant elements

This volume offers a selection of papers that have been presented at the final meeting of Working Group # 120 “Phaeocystis, major link in the biogeochemical cycling of climate-relevant elements”, of the Scientific Committee on Oceanic Research (SCOR). The combination of a diverse yet well selected spectrum of scientific disciplines – varying from phylogeny to microbiogeochemistry and ecological modelling – makes this a very complete volume; it will no doubt become an important reference to all those working with Phaeocystis. This book comprises important review papers by various top authors in the field. Topics that are addressed reach from the organism level (taxonomy and life cycles) to ecosystem dynamics (interaction with viruses and grazing dynamics). The role of Phaeocystis in carbon cycling is focus of various chapters, as well as its role in sulphur cycling. The last treatise of this volume comprises a synthesis of all the presentations of the meeting. This chapter highlights the most

Features
High quality papers by leading authors Complete coverage of topics (including review papers and new science) Topics of broad geoscience relevance Up-to-date knowledge

Fields of interest
Biogeosciences; Oceanography; Ecosystems; Eukaryotic Microbiology; Marine Ecology

Target groups
Scientists and students in marine biology, oceanography, biogeochemistry, phylogeny and ecology

Type of publication
Contributed volume

Due July 2007

Reprinted from Biogeochemistry Volume 83 1-3, 2007


74,95 €
ISBN 978-1-4020-6213-1

Measuring Precipitation from Space

Measuring Precipitation from Space presents state-of-the-art rainfall estimation algorithms, validation strategies, precipitation modelling, and assimilation in numerical weather prediction models. Clouds and precipitation observations and modelling are addressed for the improvement of the rainfall product quality. Special attention is given to the applications to monitoring and forecasting weather events and to climate monitoring in a frame of growing public interest. No other book can offer to scientists, Ph.D. or equivalent students, professionals in environmental disciplines, and decision makers such a powerful tool to understand the basics of remote sensing for precipitation, to make use of existing products and to have a glimpse of the near future missions and instruments. Other categories of readers will find in the book reference material for their questions on weather and climate applications. The essays are written by the most qualified experts in the field of passive and active remote

Features
Unique overview of rainfall estimation algorithms from space The authors represent the widest possible and most qualified list of rainfall specialists Unique description of rainfall products Unique link between cloud and weather modelling and precipitation products A most up-to-date overview of space missions, present and future

Contents
From the contents Contributors. Acknowledgments. Preface. - Section 1: Climate monitoring. - Section 2: Cloud studies in support of satellite rainfall measurements. - Section 3: Rainfall algorithms. - Section 4: Blended techniques. - Section 5: Validating satellite rainfall measurements. - Section 6: Modeling precipitation processes and data assimilation for NWP. - Section 7: Applications to monitoring weather events. - Section 8: The present and future of satellite platforms. - List of acronyms. - List of symbols and functions.

Fields of interest
Meteorology/Climatology; Remote Sensing/Photogrammetry; Microwaves, RF and Optical Engineering; Climate Change; Electronics and Microelectronics, Instrumentation

Target groups
Scientists and scholars in atmospheric sciences; university and research center libraries, atmospheric sciences section; environmental and electrical engineering students and professionals; telecommunication engineers, especially those dealing with antenna and propagation; weather services (institutions and single employees); Environmental Protection Agencies; Civil Protection Agencies; UN World Meteorological Organization; UN Food and Agriculture Organization; Armed forces of each country

Type of publication
Collected works

Due March 2007
Geoscience 17

J. Li, University of Waterloo, ON, Canada; S. Zlatanova, Delft University of Technology, Delft, The Netherlands; A. Fabbi, Free University of Amsterdam, The Netherlands (Eds.)

Geomatics Solutions for Disaster Management

Natural and anthropogenic disasters have caused a large number of victims and significant social and economic losses in the last few years. There is no doubt that the risk prevention and disaster management sector needs drastic measures and improvements in order to decrease damage and save lives of inhabitants. Effective utilization of satellite positioning, remote sensing, and GIS in disaster monitoring and management requires research and development in numerous areas: data collection, access and delivery, information extraction and analysis, management and their integration with other data sources (airborne and terrestrial imagery, GIS data, etc.), data standardization, organizational and legal aspects of sharing of remote sensing information. This book provides researchers and practitioners with a good overview of what is being developed in this topical area.

Features
This book provides researchers and practitioners with a good overview of what is being developed in the risk prevention and disaster management sector.

Fields of interest
Geoinformation/Cartography; Remote Sensing/Photogrammetry; Computer Applications in Geosciences; Information Systems and Communication Service

Target groups
Researchers and Practitioners in the fields of GIS and Computer Applications in Geosciences

Type of publication
Monograph

Due May 2007

2007. XVIII, 444 p. 186 illus. (Lecture Notes in Geoinformation and Cartography) Hardcover

149.95 €

Mine Wastes
Characterization, Treatment and Environmental Impacts

This book provides a thorough, up-to-date overview of wastes accumulating at mine sites. It deals comprehensively with sulfidic mine wastes, mine water, tailings, cyanidation wastes of gold-silver ores, radioactive wastes of uranium ores, and wastes of phosphate and potash ores. The book emphasizes the characterization, prediction, monitoring, disposal and treatment as well as environmental impacts of problematic mine wastes. The strong pedagogical framework is supported by case studies from around the world, end-of-chapter summaries as well as lists of resource materials and www sites for each waste type. The substantially updated second edition has new and notable changes including: new case studies; presentation of crucial aspects of mine wastes as scientific issues; revision of text to reflect major developments and contemporary issues that are taking place in the field of mine waste science; new web pages at the end of each chapter; additional figures; and an updated reference list. This...

Features
Classification of mine wastes according to their physical and chemical characteristics and presentation of this in individual chapters Case studies from Australia, USA and Europe

Contents
An introduction to mine wastes; sulfidic wastes; mine waters; tailings; uranium mine wastes, phosphate mine wastes; cyanidation wastes; mine site rehabilitation.

Fields of interest
Applied Geosciences; Terrestrial Pollution; Mineral Resources; Waste Management/Waste Technology; Hydrogeology

Target groups
Researchers, scientists, libraries, institutes, graduates, undergraduates, professionals

Type of publication
Monograph

Due June 2007

2007. XIV, 304 p., 70 illus. Hardcover

129.95 €
ISBN 978-3-540-48629-9

Carbonate Reservoir Characterization
An Integrated Approach

One principal need in petroleum recovery from carbonate reservoirs is the description of the three-dimensional distribution of petrophysical properties in order to improve performance predictions by means of fluid flow computer simulations. The book focuses on a rock based approach for the integration of geological, petrophysical, and geostatistical methods to construct a reservoir model suitable to input into flow simulation programs. This second edition includes a new chapter on model construction and new examples of limestone, dolostone, and touching vug reservoir models as well as improved chapters on basic petrophysical properties, rock-fabric/petrophysical relationships, calibration of wireline logs, and sequence stratigraphy.

Features
summarizes a rock-based work flow for constructing carbonate reservoir models contains descriptions and methods for describing carbonate rocks in terms that relate directly to petrophysical properties includes methods for calibrating wireline logs with rock fabrics contains a work flow for integrating geological, petrophysical, and geostatistical information for the building of reservoir models

Contents
Chapter 1 Petrophysical Rock Properties.- Chapter 2 Rock-Fabric Classification.- Chapter 3 Wireline Logs.- Chapter 4 Depositional Textures and Petrophysics.- Chapter 5 Reservoir Models for Input into Flow Simulators.- Chapter 6 Limestone Reservoirs.- Chapter 7 Dolostone Reservoirs.- Chapter 8 Touching Vug Reservoirs.- Subject Index.

Fields of interest
Mineral Resources; Sedimentology; Geology; Applied Geosciences

Target groups
Researchers in oil exploration (sedimentologists, geophysicists, engineers)

Type of publication
Reference work

Due September 2007

2007. XII, 336 p. 233 illus., 22 in color. Hardcover

129.95 €
ISBN 978-3-540-72740-8
Submarine Mass Movements and Their Consequences

This book provides a world-wide perspective of submarine mass movements and their consequences. This has been made possible by assembling excellent contributions from active researchers, groups, or institutions, thus providing full coverage of the many scientific and engineering aspects of this type of marine and coastal geo-hazard. It covers fundamental as well as site specific studies from many areas including the Atlantic and Pacific Oceans, inner seas such as the Mediterranean Sea, and fjords using the most recent technologies from multibeam sonar imaging techniques, 3D seismic analysis, slope stability analysis, to debris flow and tsunami modeling. Audience: This book is of interest to any researcher in the field of marine and coastal geo-hazards. It will be useful for planners, scientists and engineers involved in the development of offshore and near-shore resources and also to those in charge of the management and mitigation of coastal hazards. For graduate students, this book provides an [...] Features
State-of-the-art in submarine slide studies

Contents
Section-1 Role of submarine slides in margin development.- Section-2 Mass waste evolution: From slump to distal turbidites.- Section-3 New techniques, approaches and challenges in submarine slope instability analysis.- Section-4 Monitoring stress on submarine slopes and sediment physical properties.- Section-5 Submarine slides in coastal areas, semi-enclosed seas (fjords, estuaries, gulfs) and lakes.- Section-6 Submarine landslides in volcanic island settings.- Section-7 Submarine mass movements and tsunamis.

Fields of interest
Geology; Sedimentology; Geotechnical Engineering; Engineering Fluid Dynamics; Offshore Engineering

Target groups
Earth scientists interested in geohazards in general, and offshore geohazards in particular; research centres; oil companies operating in deep-water areas; universities (staff and students)

Type of publication
Monograph

Due September 2007

Visualization of Digital Terrain and Landscape Data
A Manual

This book approaches the visualization of digital terrain and landscape data by means of clear and practical examples. From data provision and the creation of revealing analyses to realistic depictions for presentation purposes, the reader is led through the world of digital 3D graphics. Combining deep knowledge of the scientific fundamentals and many years of experience in 3D visualization, the authors lead readers through a complex subject dynamically and shed light on previously murky virtual landscapes. Material on data evaluation and analysis, modeling, camera work and lighting, as well as the correct depiction of natural phenomena, atmospheric effects, and many tips for optimization make the book a valuable guide to a fascinating subject.

Features
Provides an overview and an understanding, with a strong practical tendency and detailed examples. Apart from the subject-related background, we will also consider the ways in which design and image processing are connected

Contents

Fields of interest
Geoinformation/Cartography; Landscape/Regional and Municipal Planning; Landscape Architecture; Computer-Aided Engineering (CAD, CAE) and Design; Computer Imaging; Vision, Pattern Recognition and Graphics

Target groups
Landscape architects, architects, civil engineers, geologists, geographers, cartographers, game developers, modellers

Type of publication
Reference work

Due April 2007

69,95 €
ISBN 978-3-540-30490-6

Multifunctional Land Use
Meeting Future Demands for Landscape Goods and Services

Global change, land use policies and EU enlargement affect the driving forces for landscape functioning, land use management and rural development. New demands on landscapes and natural resources call for multifunctional approaches to land development. Tools are required to (i) identify the effects of land management on landscape sustainability and (ii) support the decision-making process on the multi-purpose utilization of landscape resources. Scientists from across Europe installed the Landscape Tomorrow network to be prepared for new challenges of research on sustainable land development in a European perspective. In this publication they (i) analyse general principles of land use multifunctionality, (ii) highlight the specific requirements and approaches of implementing multifunctional land use from different disciplinary viewpoints, (iii) report on success stories of multifunctional land use from different geographic and political settings, and (iv) discuss modelling and monitoring approaches [...] Features
Interdisciplinary approach involving the social, economic, environmental and political dimension of land use, scientific basis for decision making and policies on European, national and regional level

Contents
Theoretical background and concepts.- Implementation of multifunctional land use.- Monitoring, modelling and assessing multifunctional land use.- Case studies for implementation of multifunctional land use.

Fields of interest
Landscape/Regional and Municipal Planning; Geocology/Natural Processes; Ecology; Soil Science & Conservation; Nature Conservation; Forestry

Target groups
Libraries, institutes, scientists, researchers, decision makers in policy, landscape planning and agriculture

Type of publication
Monograph

Due March 2007

2007. XI, 421 p. 80 illus. Hardcover
99,95 €
ISBN 978-3-540-36762-8
Applied Statistics Using SPSS, STATISTICA, MATLAB and R

This practical reference provides a comprehensive introduction and tutorial on the main statistical analysis topics, demonstrating their solution with the most common software package. Intended for anyone needing to apply statistical analysis to a large variety of science and engineering problems, the book explains how to use SPSS, MATLAB, STATISTICA and R for analysis such as data description, statistical inference, classification and regression, factor analysis, survival data and directional statistics. It concisely explains key concepts and methods, illustrated by practical examples using real data, and includes a CD-ROM with software tools and data sets. Readers learn which software tools to apply and gain insights into the comparative capabilities of the primary software packages. Major improvements of the second edition are the inclusion of the R language, a new section on bootstrap estimation methods and an improved treatment of tree classifiers as well as extra examples and exercises.

Features
Wide coverage of Statistical topics and methods Application to real life data and problems in various fields Guidance on how to use STATISTICA, SPSS, MATLAB and R in statistical analysis applications Including CD-ROM with datasets (sources: engineering, medicine, biology, geology) and tools

Contents

Fields of interest
Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Numerical and Computational Methods in Engineering; Systems and Information Theory in Engineering; Appl.Mathematics/Computational Methods of Engineering

Target groups
Large audience needing to apply statistical methods e.g. students and professionals

Type of publication
Professional book

Due June 2007

Information Technologies in Environmental Engineering

ITEE 2007 - Third International ICSC Symposium

The increasing environmental problems demand interdisciplinary approaches where engineers, natural scientists, economists and computer scientists work together. Information technology has become significant to all scientific groups and fields involved in environmental engineering covering the topics: Modeling and simulation, information systems, formal methods and data processing techniques, tools and measurement techniques. Economists approach environmental policy and management. This book publishes the proceedings of the ITEE 07 conference, where new concepts as well as practical applications and experiences in the field of environmental engineering have been presented and discussed.

Features
Presents new concepts as well as practical applications and experiences in the field of environmental engineering

Contents

Fields of interest
Environmental Computing/Environmental Modelling; Environmental Management

Target groups
Environmental engineers, computer scientists and economists

Type of publication
Monograph

Due April 2007

Ocean Waves Breaking and Marine Aerosol Fluxes

This book will cover the existing gap in knowledge on breaking waves and their influence on generation of marine fluxes from the ocean surfaces. The following relationships chain is explored in detail: breaking waves - whitecaps coverage - rate of wave energy dissipation - amount of aerosol fluxes rising from a given sea basin, and its possible seasonal variations is explored in detail.

Features
Bridges the gap between generalized texts and specialized texts on oceanography First ocean wave title to specifically focus on wave breaking phenomenon Can be used as a textbook for graduate students, Ph.D students and postdoctoral students due to its basic and educational character

Contents

Fields of interest
Oceanography; Meteorology/Climatology; Mechanics, Fluids, Thermodynamics; Atmospheric Protection/Air Quality Control/Air Pollution; Remote Sensing/Photogrammetry; Biogeoosciences

Target groups
Professionals and researchers such as physicists, meteorologists, chemists, ecologists, environmental specialists and managers; graduate, Ph.D and postdoctoral students

Type of publication
Monograph

Due June 2007

2007. XVI, 323 p. (Environmental Engineering) Hardcover

99.95 €
We are on the verge of what many are calling the "second information revolution," based on ubiquitous access to both computing and information. Handheld communication devices will become portable and even wearable remote control devices for both the social and physical worlds. At the same time, access to information will likely flourish, with an explosion in the volumes of data collected and distributed by these new devices - volumes of information about people delivered to more and more people, in new ways. The technologies of instant access have potential to transform dramatically our lives, cities, societies and economies much like the railroad, telephone, automobile and Internet changed our world in the previous ages. This book contains chapters by leading international experts who discuss issues surrounding the impact of instant access on cities, daily lives, transportation, privacy, social and economic networks, community and education.

Features
Up-to-date and current regarding wireless information technologies Multidisciplinary Relevant for scholars and practitioners

Contents
Section I. Introduction.- Section II. Cities and the Built Environment.- Section III. Activities in Space and Time.- Section IV. Transportation.- Section V. Mobile Information Services.- Section VI. Social and Economic Networks.- Section VII. Community.

Fields of interest
Geography; Information Systems Applications (incl.Internet); Human Geography; Urbanism

Target groups
Scholars in Geography, Urban Studies, Sociology, Communication, Information Science, Transportation Science, History of Technology, Education, Political Science

Type of publication
Contributed volume

Due March 2007

124,95 €
ISBN 978-1-4020-5426-6

The primary purpose of this book is to provide students and professionals with an introductory understanding of fluvial geomorphic principles and how these principles can be integrated with geochemical data to cost-effectively characterize, assess and remediate contaminated rivers. We stress the importance of needing to understand both geomorphic and geochemical processes. A process-oriented approach is required because it goes beyond the simple description of the river channel and its associated drainage basin to enhance the predictive capabilities of models used in the investigation of riverine environments. Thus, the overall presentation is first an analysis of physical and chemical processes and, second, a discussion of how an understanding of these processes can be applied to specific aspects of site assessment and remediation. We also emphasize the need to take a catchment-scale approach when conducting site investigations, and the potential for changes in process rates through time as a [..]

Features
In-depth discussion of the mechanics involved in the transport, deposition, and remobilization of contaminated sediments by physical processes Comprehensive examination of the use of geomorphic principles to identify and map spatial variations in metal concentrations in contaminated river valleys Analysis of the linkages between chemical and physical processes associated with heavy metal cycling in streams and [..]

Contents

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

Target groups
College seniors and graduate students in geoscience, engineering, environmental science, geography and soil science; those working on metal contaminated aquatic systems, including geologists, hydrologists, ecologists, geochemists, and civil/environmental engineers

Type of publication
Graduate/advanced undergraduate textbook

Due March 2007

69,95 €
Geographic Uncertainty in Environmental Security

Features
Rare collection of scientists specializing in environmental security and protection Unique NATO and NATO partner countries will not be duplicated Researchers in GIS fuzzy logic, environmental science, rough sets and spatial databases

Contents

Fields of interest
Computer Applications in Geosciences; Geoinformation/Cartography; Environmental Computing/Environmental Modelling; Math. Appl. in Environmental Science; Monitoring/Environmental Analysis/Environmental Ecotoxicology

Target groups
GIS specialists, Fuzzy database researchers, environmental security analysts

Type of publication
Proceedings

Due September 2007


139.95 €
ISBN 978-1-4020-6436-4

Critical Infrastructure

Reliability and Vulnerability

This text brings together differing geographic perspectives in modeling and analysis in order to highlight infrastructure weaknesses or plan for their protection. International scholars, from a variety of disciplines – geography, regional science, planning, public policy, operations research, mathematics, computer science, engineering and transportation – present varying perspectives on this subject. This text is an important contribution offering synthesis and new methodological approaches. The purpose of this volume is to explore the potential consequences of critical infrastructure failure, stemming from both man-made (e.g., terrorist attacks) and natural disasters (earthquakes, hurricanes, etc.). The approaches employed are wide-ranging, including geographic, economic and social perspectives on critical infrastructure issues.

Fields of interest
Regional Science; Landscape/Regional and Municipal Planning; Quantitative Geography; R & D/Technology Policy

Target groups
Scientists in Geography, Regional Science, Planning, Public Policy, OR, Computer Science, Engineering and Transportation; practitioners responsible for critical infrastructure

Type of publication
Monograph

Due March 2007

2007. VIII, 311 p. (Advances in Spatial Science) Hardcover

84.95 €
ISBN 978-3-540-68055-0
Uncertainty Forecasting in Engineering

This book deals with uncertainty forecasting based on a fuzzy time series approach, including fuzzy random processes and artificial neural networks. A consideration of data and measurement uncertainty enhances forecasting in a wide range of applications, particularly in the fields of engineering, environmental science and civil engineering. Uncertain data are described by means of a new incremental fuzzy representation which permits a complete and accurate estimation of uncertainty. The book is aimed at engineers as well as professionals working in related fields. Descriptive, modeling and forecasting methods pertaining to fuzzy time series are introduced and explained in detail. Emphasis is placed on forecasting with the aid of fuzzy random processes, such as fuzzy ARMA processes and fuzzy white-noise processes, as well as forecasting based on artificial neural networks. All numerical algorithms are comprehensively described and demonstrated by way of practical examples.

Features
Fuzzy time series can be applied in many fields in engineering like environmental engineering or civil engineering. Two simulation-based important forecasting strategies are explained: forecasting based on fuzzy ARMA processes or fuzzy white-noise processes and forecasting based on fuzzy artificial neural networks. A complete new description of uncertain data as incremental fuzzy data is given.

Contents
Introduction.- Mathematical Description of Uncertain Data.- Analysis of Time Series Comprised of Uncertain Data.- Forecasting of Time Series with Uncertain Data.- Uncertain Forecasting in Engineering and Environmental Science.- References.- Index.

Fields of interest
Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences; Theoretical and Applied Mechanics; Environmental Computing/Environmental Modelling; Building Construction, HVAC, Refrigeration; Probability Theory and Stochastic Processes

Target groups
Engineers, civil engineers, environmental scientists

Type of publication
Monograph

Due August 2007

Collecting Spatial Data
Optimum Design of Experiments for Random Fields

The book is concerned with the statistical theory for locating spatial sensors. It bridges the gap between spatial statistics and optimum design theory. After introductions to those two fields the topics of exploratory designs and designs for spatial trend and variogram estimation are treated. Special attention is devoted to describing new methodologies to cope with the problem of correlated observations. A great number of relevant references are collected and put into a common perspective. The theoretical investigations are accompanied by a practical example, the redesign of an Upper-Austrian air pollution monitoring network. A reader should be able to find respective theory and recommendations on how to efficiently plan a specific purpose spatial monitoring network. The third edition takes into account the rapid development in the area of spatial statistics by including new relevant research and references. The revised edition contains additional material on design for detecting spatial [...]
Transdisciplinary Challenges in Landscape Ecology and Restoration Ecology - An Anthology

Capitalizing on forty years of intensive ecological studies, this anthology presents a collection of widely dispersed major publications on theoretical and practical Mediterranean, global environmental and landscape issues. Each chapter features a comprehensive study of ecological and landscape issues, synthesized in the introduction, and woven with autobiographical experiences. The concluding chapter calls for a transdisciplinary shift in all environmental scientific fields and particularly in landscape and restoration ecology, to cope with the complex, closely interwoven ecological, socio-economic, political and cultural crises facing human society during the present crucial transition from the industrial to the post-industrial, global information age. Updating and broadening the scope of the groundbreaking Springer book on Landscape Theory and Applications by the author and Lieberman (1994), this is a unique transdisciplinary attempt based on advanced systems complexity theories, which link (...)
Advances in Spatial and Temporal Databases

10th International Symposium, SSTD 2007, Boston, MA, USA, July 16-18, 2007, Proceedings

The refereed proceedings of the 10th International Symposium on Spatial and Temporal Databases, SSTD 2007, held in Boston, MA, USA in July 2007. The 26 revised full papers were thoroughly reviewed and selected from a total of 76 submissions. The papers are classified in the following categories, each corresponding to a conference session: continuous monitoring, indexing and query processing, mining, aggregation and interpolation, semantics and modeling, privacy, uncertainty and approximation, streaming data, distributed systems, and spatial networks.

Fields of interest
Database Management; Computer Applications in Geosciences; Data Mining and Knowledge Discovery; Information Systems Applications (incl. Internet); Artificial Intelligence (incl. Robotics); Information Systems

Target groups
Researchers and professionals

Type of publication
Proceedings

Due June 2007

Softcover
60,00 €
ISBN 978-3-540-73539-7

Digital Terrain Modelling
Development and Applications in a Policy Support Environment

This publication is the first book on the development and application of digital terrain modelling for regional planning and policy support. It is a compilation of research results by international research groups at the European Commission’s Joint Research Centre, providing scientific support to the development and implementation of EU environmental policy. Applications include the pan-European River and Catchment Database, European Flood Alert System, European Digital Soil Database and alternative solar energy resources, all discussed in a GIS framework in the context of the INFrastructure for Spatial Information in Europe (INSPIRE). This practice-oriented book is recommended to practicing environmental modellers and GIS experts working on regional planning and policy support applications.

Features
First book on the development and application of digital terrain modelling for regional planning and policy support

Contents
### Springer Handbook of Engineering Statistics

In today’s global and highly competitive environment, continuous improvement in the processes and products of any field of engineering is essential for survival. Many organisations have shown that the first step to continuous improvement is to integrate the widespread use of statistics and basic data analysis into the manufacturing development process as well as into the day-to-day business decisions taken in regard to engineering processes. The Springer Handbook of Engineering Statistics gathers together the full range of statistical techniques required by engineers from all fields to gain sensible statistical feedback on how their processes or products are functioning and to give them realistic predictions of how these could be improved. Featuring: Contributions from leading experts in statistics and their application to engineering from industrial control to academic medicine and financial risk management giving all-round authoritative coverage. Wide-ranging selection of statistical [...] 

**Contents**


**Fields of interest**

- Quality Control, Reliability, Safety and Risk
- Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences
- Industrial and Production Engineering
- Business/Management Science, general
- Process and Chemical Engineering

**Type of publication**

Handbook

**Due July 2007**

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### Genders in the Life Course

This book treats the topic of gender and demographic behaviour during the life course in a comprehensive fashion. It covers a lot of ground, from the age at first intercourse over union formation and dissolution, fertility, migration, ageing, to excess male mortality, comparing genders behaviour and its determinants. It reports new findings of empirical research, mostly based on data from a number of European countries, making a good use of the Family and Fertility surveys and other international data base. This book is of particular interest to demographers, social scientists, academic scholars and private/public sector operators, particularly those who are interested in the roles of men and women, and the factors of possible asymmetries and disadvantages, with direct connections to the population policies.

**Features**

This unique book on relations between gender system and demographic behaviours, uses powerful data sets as Family and Fertility survey

**Contents**

- Preface: Eva Bernhardt
- Introduction: A. Pinnelli, F. Racioppo, R. Rettaroli
- Chapter 1: The gender system in developed countries: macro and micro evidence: P. Di Giulio, A. Pinnelli
- Chapter 2: Age at first sexual intercourse: L. Coppola
- Chapter 3: The formation of the first partnership: the role of education and employment: R. Impicciatore, R. Rettaroli
- Chapter 4: Ideational factors and choices of life as a couple: L. Pasquini, A. Samoggia
- Chapter 5: Gender and the differential fertility: A. Pinnelli, P. Di Giulio
- Chapter 6: The new role of the father: P. Di Giulio, S.

**Fields of interest**

- Demography
- Sociology
- Gender Studies
- Family Relations
- Social Sciences

**Target groups**

Demographers and Sociologists

**Type of publication**

Contributed volume

**Due September 2007**

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### Earthquake Geotechnical Engineering

This book contains the full papers on which the invited lectures of the 4th International Conference on Geotechnical Earthquake Engineering (4ICEGE) were based. The conference was held in Thessaloniki, Greece, from 25 to 28 June, 2007, and was organized by the Technical Committee of Earthquake Geotechnical Engineering (TC4) of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), the Hellenic Scientific Society of Soil Mechanics and Geotechnical Engineering and the Aristotle University of Thessaloniki. Following in the footsteps of the three previous successful conferences in Tokyo, Lisbon and Berkeley, all specialized and well-focused conferences of the highest scientific and technical standards, the 4ICEGE was planned around numerous state-of-the-art topics. Earthquake and geotechnical engineers, geologists and seismologists from all over the world found an excellent forum for sharing and discussing the most recent advances in soil dynamics, earthquake and [...] 

**Contents**


**Fields of interest**

- Geotechnical Engineering
- Civil Engineering
- Structural Foundations
- Hydraulic Engineering
- Soil Science & Conservation
- Numerical and Computational Methods in Engineering

**Target groups**

Civil engineers in the fields of geotechnical and earthquake engineering and soil dynamics; scientists and researchers in the fields of seismology, geology and geophysics

**Type of publication**

Monograph

**Due June 2007**

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Information Fusion and Geographic Information Systems

Workshop Proceedings introduce research results received in the areas of information integration, development of GIS and GIS-applications for a wide spectrum of information systems varying considerably in purpose and scale. The new class of GIS - intelligent GIS - is considered, including principles of their building and programming technologies. Special attention is drawn to ontologies’ development and their use in GIS and GIS-applications.

Features
Introduces research results received in the areas of information integration, development of GIS and GIS-applications for a wide spectrum of information systems

Contents
Data, Information and Knowledge Harmonization, Integration and Fusion in GIS - Information Assurance and Protection in GIS - GIS as a Basis for Monitoring Systems - Ontologies and Programming Technologies for GIS and GIS Applications - Operations Research and TSMO for GIS Applications

Fields of interest
Geoinformation/Cartography; Environmental Computing/Environmental Modelling

Target groups
Scientists and researchers in the fields of geoinformation/cartography, information systems and environmental computing

Type of publication
Monograph

Due June 2007

Employment Deconcentration in European Metropolitan Areas

This book provides a cross-national comparative perspective on employment deconcentration within selected metropolitan areas in Europe. Whereas most debate over urban sprawl and deconcentration is oriented towards the North American context, this book aims at a better understanding of this phenomenon in the European context, emphasizing the location of economic activities rather than residential patterns. It provides insights on whether different governance attributes produce particular forms of deconcentration versus the influence of market attributes and local specificities, also commenting on quality of life impacts and possible governance and policy implications of the deconcentration process. Introduction of a comparative framework is followed by eight case study chapters, three representing northern Europe, three the south European Mediterranean region and two post-communist central Europe. Most chapters examine two metropolitan areas, usually a large and a smaller one. The comparison [...]
Biogeography, Time and Place
Distributions, Barriers and Islands

Biogeography considers the distribution of biological units over a wide range of scales. The units range from genotypes, populations and species to families and higher taxa. Processes can be local, such as the isolation on islands due to sea-level fluctuations, or large-scale tectonic processes that separates continents and creates oceans. In all processes time is an important factor and by combining data on recent patterns with palaeontological data the understanding of the distribution of extant taxa can be improved. This volume focuses on speciation due to isolation in island-like settings, and the evolution of large-scale diversity as the result of origination, maintenance and extinction.

Features
Offers exchanges between the fields of paleontology and zoology as patterns of biodiversity have long attracted attention by both paleontologists and paleontologists. Features chapters on the development of (isolated) island faunas, paleogeoography and zo morphology. Shows that patterns are not always what they seem if you look at them without a spatial or temporal reference. This cannot be generated without [...] 

Contents
1. Global Disjunctions and Flying Insects. 2. Zoo geography of Freshwater Invertebrates of Southeast Asia, with special Reference to Odonata. 3. Distribution and speciation of megapodes (Megapodidae) and subsequent development of their breeding behaviour. 4. The Influence of Land Barriers on the Evolution of Pontoniine Shrimps (Crustacea, Decapoda) living in Association with Molluscs and Solitary Ascidians. 5. Delineation of the Indo-Malayan Centre of Maximum Marine Biodiversity: the Coral Triangle. 6. Fauna Development of Larger Benthic Foraminifera in the Cenozoic of Southeast Asia. [...] 

Fields of interest
Zoology; Paleontology; Biodiversity

Target groups
Academics, practitioners and professionals with an interest in (paleo)biogeography, paleontology, biodiversity, biology and zoology

Type of publication
Contributed volume

Due September 2007

169,95 €

Human Longevity, Individual Life Duration, and the Growth of the Oldest-Old Population

Old-age survival has considerably improved in the second half of the twentieth century. Life expectancy in wealthy countries has increased, on average, from 65 years in 1950 to 76 years in 2005. The rise was more spectacular in some countries: the life expectancy for Japanese women rose from 62 years to 86 years during the same period. Driven by this longevity extension, the population aged 80 and over in those countries has grown fivefold from 8.5 million in 1950 to 44.5 million in 2005. Why has such a substantial extension of human lifespan occurred? How long can we live? In this book, these fundamental questions are explored by experts from such diverse fields as biology, medicine, epidemiology, demography, sociology, and mathematics: they report on recent cutting-edge studies about essential issues of human longevity such as evolution of lifespan of species, genetics of human longevity, reasons for the recent improvement in survival of the elderly, medical and behavioral causes of deaths among [...] 

Features
Living longer and healthier has been a goal of human beings for thousands of years, but we know little about it. Distinguished experts in the field of healthy aging/longevity address strategically important issues of “living longer and healthier”. Presents country-specific studies and cross-national comparisons with easy-to-read texts, based on longitudinal and cross-sectional data from North America, Europe, [...] 

Contents
From the contents Section 1: Theoretical and Comparative Biological Concepts. Section 2: Empirical and Analytical Studies of Aging and Oldest-Old Populations. Section 3: Causes of Death and Biological Frailty. Section 4: Sex, Gender and Social Determinants and Consequences of Mortality. Section 5: Causes of the Trend in Mortality and Morbidity. Index.

Fields of interest
Demography; Aging; Geriatrics/Gerontology; Social Sciences

Target groups
Demographers, biologists, gerontologists, sociologists, public health researchers and policy makers

Type of publication
Contributed volume

Due September 2007

66,95 €
ISBN 978-1-4020-4847-0

Methods and Tools for Drought Analysis and Management

Implementation of effective drought management policies requires both advanced technologies and appropriate methods. Monitoring and forecasting systems, practical tools for risk assessment, as well as simple and objective criteria to select and implement appropriate drought mitigation measures are key elements for a successful drought management strategy. These key issues have been tackled by universities and public agencies involved in the EU projects Sedemed and Sedemed II (Programme Interreg IIIIB MEDOC), aimed at the definition of an integrated network for real time monitoring of drought, the development of common methodologies for drought analysis and forecasting, as well as the definition of proper mitigation strategies for the Mediterranean countries. The book presents the main outcomes of such projects with a special focus on: drought monitoring and forecasting techniques at different spatial scales; new or modified agrometeorological indices and remote sensing technique for drought [...] 

Features
Provides various methods of drought monitoring at different spatial scales, as well as innovative drought forecasting techniques based on stochastic approaches. Besides common drought indices (i.e. SPI), new agrometeorological indices are proposed Decision Support System for water resources management under drought conditions, also including quality aspects, are illustrated Methods and tools for monitoring [...] 

Contents

Fields of interest
Hydrogeology; Applied Geosciences; Civil Engineering; Environmental Management; Statistics for Engineering, Physics, Computer Science, Chemistry & Geosciences

Target groups
Researchers and professionals in the fields of meteorology, hydrology and agronomy, public institutions in charge of hydrometeorological monitoring and forecasting, water resources systems managers and decision makers responsible for the implementation of drought mitigation strategies

Type of publication
Monograph

Due July 2007

149,95 €
ISBN 978-1-4020-5923-0
Extremes in Nature
An Approach Using Copulas

The study of the statistics of extreme events is an essential first step in the mitigation of natural catastrophes, that often cause severe economic losses worldwide. This book is about the theoretical and practical aspects of the statistics of Extreme Events in Nature. Most importantly, this is the first text in which Copulas are introduced and used in Geophysics. Several topics are fully original, and show how standard models and calculations can be improved by exploiting the opportunities offered by Copulas. In addition, new quantities useful for design and risk assessment are introduced. Practitioners in all research areas of Geosciences and extreme events (including Finance and Insurance, closely related to natural disasters) will definitely benefit from the new Copula approach outlined in the book.

Features
Topics treated are diverse and of wide practical significance. Clear exposition of theoretical background Application of copulas Nonstationary, bivariate and multivariate methods Treatment of natural disasters

Contents

Fields of interest
Math. Applications in Geosciences; Nonlinear Dynamics, Complex Systems, Chaos, Neural Networks; Geophysics/Geology; Applications of Mathematics; Statistics for Business/Economics/Mathematical Finance/Insurance

Target groups
Geophysicists, researchers, postgraduates and final year undergraduates in Geosciences

Type of publication
Monograph

Due June 2007

Studies of Cave Sediments
Physical and Chemical Records of Paleoclimate

Caves serve as unique repositories for geologic, biologic, and anthropologic information. The sediments within these natural cavities are incredibly diverse. They include secondary minerals such as calcite and gypsum, which occur in sandy forms, as well as allgenic and autogenic clasts. This book is for any geoscience researcher or student with interests in climate change, paleohydrology, karst geology, and sedimentology. Studies of Cave Sediments is the first comprehensive volume on cave sediments. It provides case-studies from around the world, gives guidance on appropriate applications of techniques, and their limitations, synthesizes methods that can be used to decipher complex deposits, and includes chemical deposits (speleothems) as well as clastic sediments

Features
The first comprehensive volume on cave sediments Provides case-studies from around the world Gives guidance on appropriate applications of techniques, and their limitations Synthesizes methods that can be used to decipher complex deposits Includes chemical deposits (speleothems) as well as clastic sediments

Contents
**Tsunami and Its Hazards in the Indian and Pacific Oceans**

Tsunamis like the Indian Ocean tsunami caused by the Sumatra-Andaman earthquake in 2004 or the Chilean earthquake in the Pacific Ocean in 1960 motivate international collaborations for the development of tsunami warning systems. Since 1960 the Tsunami Commission, established by the International Union of Geodesy and Geophysics, has been holding a biannual International Tsunami Symposium (ITS). This volume contains 20 contributions of leading scientists mostly presented at the 22nd International Tsunami Symposium held in summer 2005 in Greece. Consolidated findings based on hydrophone records, seismometer readings, and tide gauges are presented. Reports of post tsunami surveys and numerical simulations for tsunamis such as the 2004 Indian Ocean event, as well as geological studies of tsunamis in Japan, Central and North America are given. Probabilistic tsunami hazard analysis and tsunami warning systems, among others, are described as methods to predict tsunamis and mitigate their hazards.

**Features**

Contributions to the first Meeting of the Tsunami Commission after the big tsunami in the Indian Ocean following the Sumatra-Andaman earthquake 2004 Deals with tsunami dangers and early warning systems Editors are world-famous scientists in this research field

**Contents**


**Fields of interest**

Oceanography; Applied Geosciences; Hydrogeology; Geophysics/Geodesy

**Target groups**

Tsunami research institutions, researchers in geophysics and neighboring sciences, graduate students

**Type of publication**

Proceedings

**Due May 2007**

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**Introduction to Probability with Statistical Applications**

Introduction to Probability with Statistical Applications targets non-mathematics students, undergraduates and graduates, who do not need an exhaustive treatment of the subject. While the presentation is rigorous and contains theorems and proofs, linear algebra is largely avoided and only a minimal amount of multivariable calculus is needed. Key features:

- Clear definitions, simplified notation and techniques of statistical analysis, combined with well-chosen examples and exercises, motivate the exposition.
- Theory and applications carefully balanced.
- Topics include random phenomena -- discrete and continuous random variables -- expectations and variance, and common probability distributions such as the binomial, Poisson, and normal.
- Combinatorial principles involve all four arithmetic operations such as the binomial, Poisson, and normal.
- Probability and Statistics.

**Contents**


**Features**

- Theory and applications carefully balanced.
- Presen-tation is rigorous and contains theorems and proofs.
- Linear algebra is largely avoided.
- Clear definitions, simplified notation and techniques of statistical analysis.
- Well-chosen examples and exercises.

**Due September 2007**

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**Dynamic Population Models**

Dynamic Population Models is the first book to comprehensively discuss and synthesize the emerging field of dynamic modeling, i.e. the analysis and application of population models that have changing vital rates. Incorporating the latest research, it includes thorough discussions of population growth and momentum under gradual fertility declines, the impact of changes in the timing of events on fertility measures, and the complex relationship between period and cohort measures. Recently developed models for the analysis of changing mortality are examined, and generalizations of Lotka’s fixed rate stable population model are developed and applied. The book is well organized and clearly written so that it is accessible to those with only a minimal knowledge of calculus. It begins with a review of fixed rate population models, from the basic life table to multistate stable populations. The process of convergence to stability is described, and the regularities underlying change in the size and structure of populations.

**Contents**

State-of-the-art presentation of mathematical (or formal) demography. Detailed discussion of population momentum. Thorough treatment of timing effects on demographic behavior. In-depth analyses of regularities in populations with changing rates. Clear and complete explanations with a minimum of mathematical complexity.

**Features**

- Preface.
- 1. Population Models with Constant Rates.
- 4. Demographic Change at the Margin.
- 5. Longevity and Dynamic Mortality.
- 6. Timing Effects on Fertility, Marriage, and Divorce.

**Due March 2007**

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**Dynamic Population Models**

R. Schoen, Pennsylvania State University, University Park, PA, USA

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**Introduction to Probability with Statistical Applications**

G. Schay, University of Massachusetts, Boston, MA, USA

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**Dynamic Population Models**

R. Schoen, Pennsylvania State University, University Park, PA, USA
Trace Fossil Analysis

Trace fossils record the behavior of animals at the very spot where they lived millions of years ago. Their growing interest derives from the intimate connection between ichnology and sedimentology and their combined relevance for paleoenvironmental reconstructions, basin analysis, and petroleum exploration. This definitive textbook by a renowned field observer and analyst of trace fossils concentrates on the most distinctive examples, mostly made by infaunal invertebrates in originally soft sediments. It covers the whole geologic column and ranges from deep-sea to shallow-marine and continental environments. Seilacher’s Trace Fossil Analysis is designed to foster interpretative skills using the author’s own iconic drawings. They are thematically grouped in 75 plates that form the core for the descriptive text and annotated references. A glossary of ichnological terms is also provided.

Contents

Fields of interest
Sedimentology; Geology

Target groups
Students, professors, researchers, interested non-professionals

Type of publication
Graduate/advanced undergraduate textbook

Due March 2007

2007. XIII, 226 p. 75 plates and 43 photos. Hardcover

49,95 €
ISBN 978-3-540-47225-4

K. P. Seiler, GSF-National Research Centre, Neuherberg, Germany; J.R. Gat, Weizmann Institute of Science, Rehovot, Israel

Groundwater Recharge from Runoff, Infiltration and Percolation

Groundwater constitute the most important reservoir of available clean water. Due to its overexploitation, some anthropogenic mismanagement on the surface and the overloading of the cleanup potential of subsurface, many of the groundwater systems used for water supply are in jeopardy. The problem is very severe in dry-lands, but also in urban, industrial, agricultural and traffic areas. This book first discusses the recharge fluxes relating both to the quantity and quality of groundwater. In order to face the threats to the water supply, it is necessary to be able to maintain a sustainable water management policy, detailed knowledge is needed in between others on the surface to subsurface transformation link in the water cycle. Secondly, the presentation and comparison of both the traditional and modern approach to determine groundwater recharge is discussed. The traditional approach to determine groundwater recharge, is based on water balance estimates and hydraulic considerations, which ...[-]

Features
Detailed description of interface and phase transition processes Presents independent methods to determine groundwater recharge Offers an extended data set from the atmosphere/biosphere/lithosphere to the groundwater surface

Contents
From the contents Preface.- Abbreviations and dimensions.- Definitions.- 1 Introduction.- 2 The water cycle.- 3 Mechanisms and processes of recharge.- 4 Research tools and methods in the study of recharge.- 5 Recharge under different climate regimes.- 6 Man’s impact on the groundwater recharge.- 7 Literature survey.- Subject index.

Fields of interest
Hydrogeology; Fluids; Environmental Computing/Environmental Modelling; Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Physical Geography

Target groups
Researchers and scientists in hydrology, hydro-geology, engineering, geography, agronomy, soil science, groundwater modelling, environmental physics, limnology

Type of publication
Monograph

Due September 2007


89,95 €
ISBN 978-1-4020-5305-4

E. Sharkov, Space Research Institute, Moscow, Russia

Breaking Ocean Waves

Geometry, Structure and Remote Sensing

This book represents the most comprehensive description of the physical properties including geometry, structure, spatio-temporal evolution and remotely sensed reflectance and emissivity in visible, IR and microwave ranges of one of the most important elements of disturbed sea surface - sea waves breaking.

Fields of interest
Oceanography; Applied Geosciences; Computer Applications in Geosciences; Meteorology/Climatology; Remote Sensing/Photogrammetry

Target groups
Geophysicists, oceanologists, meteorologists, climatologists, radio physicists, radio engineers and remote sensing specialists; Undergraduate and postgraduate students; Professional scientists, environmentalists and engineers concerned with the passive microwave and government agencies and industries dealing with management and planning in the field of remote sensing, monitoring and mitigation of natural mediums

Type of publication
Monograph

Due July 2007

2007. XXVI, 278 p. 95 illus., 10 color (Geophysical Sciences) Hardcover

129,95 €
ISBN 978-3-540-29827-4

A. Seilacher, Tübingen, Germany

Field of interest
Remote Sensing/Photogrammetry

Target groups
Graduate/advanced undergraduate textbook

Due March 2007

2007. XIII, 226 p. 75 plates and 43 photos. Hardcover

49,95 €
ISBN 978-3-540-47225-4
**Water Resources in the Middle East**

Israel-Palestinian Water Issues – From Conflict to Cooperation

This book presents various approaches to the resolution of the severe water resource shortages and issues of the Middle East, with particular emphasis on the Israeli-Palestinian water conflicts. The authors include leading Palestinian, Israeli and international water experts who have worked together for a number of years, many in joint research projects and dialogues, aimed at building up mutual understanding and respect, in an effort to help resolve these conflicts and enable the nations of the area to live in peace and cooperation. The studies consider the various geopolitical, environmental, legal, economic and water resources management approaches to improve cooperation and solve the problems arising from conflicting interests.

**Contents**


**Fields of interest**

Hydrogeology; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Political Science; Economic Geography; Physical Geography; Landscape/Regional and Municipal Planning

**Target groups**

Scientists, researchers, libraries, institutes

**Type of publication**

Monograph

Due May 2007

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**The Soils of Israel**

Eleven chapters present a concise description of the soils of Israel, including their distribution, chemical, physical mineralogical characteristics and agricultural attributes. On the background of the various soil-forming factors such as climate, lithology and physiography the pathways of their formation is discussed. Based on the relationships between soils and soil-forming factors, the distribution of the different soil types is explained. An ample bibliography backs up this exposition, supplemented by numerous figures, tables, colour plates and maps. The description of the contemporaneous surface soils is supplemented by a review of the numerous paleosols with their paleogeographic significance.

**Features**

First comprehensive book on the soils of Israel since 1948

**Contents**


**Fields of interest**

Physical Geography; Soil Science & Conservation; Geology; Landscape Ecology; Sedimentology; Agriculture

**Target groups**

Libraries, institutes, scientists, researchers

**Type of publication**

Monograph

Due May 2007

2007, X, 306 p. 228 illus., 68 in color. Hardcover

99.95 €

ISBN 978-3-540-71731-7

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**Climate Prediction and Agriculture**

Advances and Challenges

Improved adaptation of food production, particularly in areas where climate variability is large, holds the key to improving food security for human populations. Increasing climate knowledge and improved prediction capabilities facilitate the development of relevant climate information and prediction products for applications in agriculture to reduce the negative impacts due to climate variations and to enhance planning activities based on the developing capacity of climate science. This book, based on an International Workshop held in Geneva in 2005, reviews the advances made so far in seasonal climate predictions and their applications for management and decision-making in agriculture and identifies the challenges to be addressed in the next 5 to 10 years to further enhance operational applications of climate predictions in agriculture, especially in developing countries.

**Features**

Reviews the advances made so far in seasonal climate predictions and their applications for management and decision-making in agriculture and identifies the challenges to be addressed in the next 5 to 10 years to further enhance operational applications of climate predictions in agriculture, especially in developing countries.

**Contents**

Climate Prediction and Agriculture - Climate Downscaling - Development of a Combined Crop and Climate Forecasting System for Seasonal to Decadal Prediction - Delivering Climate Forecast Products to Farmers - Seasonal Predictions and Monitoring for Sahel Region - Institutionalizing Climate Forecast Applications for Agriculture - Climate Applications and Agriculture - Climate Forecast Applications for Better Water Management in Agriculture - Linking Corn Production, Climate Information and Farm-Level Decision-Making - Climate Prediction and Agriculture: Lessons Learned and Future [-]

**Fields of interest**

Meteorology/Climatology; Climate Change; Agriculture; Monitoring/Environmental Analysis/Environmental Ecotoxicology

**Target groups**

Researchers, scientists, libraries in the fields of meteorology/climatology, climate change and agriculture

**Type of publication**

Monograph

Due April 2007

2007, XXVI, 306 p. 102 illus. Hardcover

129.95 €

ISBN 978-3-540-44649-1

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**The Soils of Israel**

A. Singer, Hebrew University Jerusalem, Israel

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Libraries, institutes, scientists, researchers

**Type of publication**

Monograph

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2007, X, 306 p. 228 illus., 68 in color. Hardcover

99.95 €

ISBN 978-3-540-71731-7

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**Climate Prediction and Agriculture**

M.V.K. Sivakumar, World Meteorological Organization, Geneva, Switzerland; J. Hansen, Columbia University, Palisades, NY, USA (Eds.)

Advances and Challenges

Improved adaptation of food production, particularly in areas where climate variability is large, holds the key to improving food security for human populations. Increasing climate knowledge and improved prediction capabilities facilitate the development of relevant climate information and prediction products for applications in agriculture to reduce the negative impacts due to climate variations and to enhance planning activities based on the developing capacity of climate science. This book, based on an International Workshop held in Geneva in 2005, reviews the advances made so far in seasonal climate predictions and their applications for management and decision-making in agriculture and identifies the challenges to be addressed in the next 5 to 10 years to further enhance operational applications of climate predictions in agriculture, especially in developing countries.

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**Contents**

Climate Prediction and Agriculture - Climate Downscaling - Development of a Combined Crop and Climate Forecasting System for Seasonal to Decadal Prediction - Delivering Climate Forecast Products to Farmers - Seasonal Predictions and Monitoring for Sahel Region - Institutionalizing Climate Forecast Applications for Agriculture - Climate Applications and Agriculture - Climate Forecast Applications for Better Water Management in Agriculture - Linking Corn Production, Climate Information and Farm-Level Decision-Making - Climate Prediction and Agriculture: Lessons Learned and Future [-]

**Fields of interest**

Meteorology/Climatology; Climate Change; Agriculture; Monitoring/Environmental Analysis/Environmental Ecotoxicology

**Target groups**

Researchers, scientists, libraries in the fields of meteorology/climatology, climate change and agriculture

**Type of publication**

Monograph

Due April 2007

2007, XXVI, 306 p. 102 illus. Hardcover

129.95 €

ISBN 978-3-540-44649-1
**Climate and Land Degradation**

In many parts of the world, climatic variations are recognized as one of the major factors contributing to land degradation impacting on agricultural systems, performance, and management. To accurately assess sustainable land management practices, the climate resources and the risk of climate-related or induced natural disasters in a region must be known. Only when climate resources are paired with management or development practices can the land degradation potential be assessed and appropriate mitigation technologies be developed. This book is based on an International Workshop held in Arusha, Tanzania and should be of interest to all organizations and agencies interested in sustainable land management to arrest land degradation.

**Features**
- Presents the state-of-the-art papers, real world applications and innovative techniques for combating land degradation.
- Offers recommendations for effective use of weather and climate information for sustainable land management practices.

**Contents**
- Global Trends in Land Degradation.
- Trends in Land Degradation in Africa, Asia, Latin America and Caribbean and in Europe.
- Climate and Land Degradation - Overview.
- Extreme Events and Land Degradation.
- Effects of Some Meteorological Parameters on Land Degradation in Tanzania.
- Rainfall and Land Degradation.
- Frequency of Wet and Dry Spells.
- Climate Variability, Climate Change and Land Degradation.
- Fire Weather and Land Degradation.
- Importance of Drought Information in Monitoring and Assessing Land Degradation.
- Agriculture-environment Nexus in Land Degradation.
- Using Weather and [...] 

**Fields of interest**
- Climate Change; Meteorology; Climatology; Nature Conservation; Biogeochemistry

**Target groups**
- All organizations and agencies interested in sustainable land management to arrest land degradation.

**Type of publication**
- Monograph

**Due August 2007**

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**The Post-Socialist City**

In the large body of literature produced during the last fifteen years on the transformation of Eastern European societies after the fall of communism, studies investigating changes in urban form and structure have been quite rare. Yet a profound reorganization of the manner in which urban space is appropriated has taken place, impacting the life of over 200 million urban residents in the region. The patterns of spatial organization, which have been established during this fairly limited but critical time-frame, are likely to set the direction of future urban development in CEE cities for a long time. This book focuses on the spatial transformations in the most dynamically evolving urban areas of post-socialist Central and Eastern Europe, linking the restructurings of the built environment with the underlying processes and forces of socio-economic reforms. We hope that the detailed accounts of the spatial transformations in a key moment of urban history in the region will enhance our understanding of [...] 

**Features**
- Focus on the evolution of urban form in CEE cities after socialism, an under-explored subject.
- Wide geographic coverage.

**Contents**
- From the contents Introduction.
- Part 2: Non-Residential Development.
- Part 3: Residential Development.
- Part 4: The Evolution Of Public Space.
- Part 5: Public Policy And Urban Development.
- Part 6: Planning The Post-Socialist City.

**Fields of interest**
- Geophysics/Geodesy; Geology; Thermodynamics; Computational Mathematics and Numerical Analysis

**Target groups**
- Graduate students, lecturers, scientists

**Type of publication**
- Graduate/advanced undergraduate textbook

**Due March 2007**

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This book is an introductory text for all earth scientists interested in learning about the quantitative description of geological problems. It contains chapters on heat flow, sedimentary basin modelling, mechanics of continental deformation, PT path modelling, geomorphology and mass transfer and more. In its style, the book is aimed at the field oriented geologist who wants to begin with learning about the quantitative description of problems. Graduate students and scientists will find the book a good starting point for a quantitative treatment of their data. The new edition, revised and extended, features even more illustrations and maps, about 100 corrections of scientific problems, improvement of geomorphology section and shortening of several sections which obviously are too complicated. Update and modernisation of several sections, for example the section on pressure and updated references.

**Features**
- Clear representation of the subject for the field oriented geologist.
- Artwork specially designed for this book.
- Qualitative representation of geodynamical processes.

**Fields of interest**
- Geophysics/Geodesy; Geology; Thermodynamics; Computational Mathematics and Numerical Analysis

**Target groups**
- Graduate students, lecturers, scientists

**Type of publication**
- Graduate/advanced undergraduate textbook

**Due August 2007**

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**An Introduction**


**89.95 €**

ISBN 978-3-540-71236-7

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**134.95 €**

Groundwater Resource Evaluation, Augmentation, Contamination, Restoration, Modeling and Management

This book comprehensively deals with the resource evaluation through remote sensing (RS) along with GIS, resistivity tomography for identification of potential bore-holes in hard rock region, aquifer parameterization through pumping tests, interpolation of sparse spatial data through the theory of regionalized variables (Geostatistics) and augmentation of groundwater resource through aquifer storage and recovery method (ASR). Characterization of fractured medium parameters, identification of sources of Fluoride and Arsenic contamination and its remediation, groundwater modeling procedures to understand the flow and contaminant migration phenomenon, inverse modeling to evolve the parameters which are controlling the groundwater movement and mass transport and management aspects of the groundwater resources through community participation, and artificial recharge and remediation of contaminated aquifer system have also been brought out in this textbook.

Contents

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

Target groups
Scientists and researchers in the field of Hydrology and Water Resources Management

Type of publication
Monograph

Due April 2007

Distribution rights for India: Capital Publishing Company

Jointly published with Capital Publishing Company


129.95 €
ISBN 978-1-4020-5728-1

Water Dynamics

4th International Workshop on Water Dynamics

Water is the essential constituent for life and these proceedings covers the role of water in materials, earth science and geo/biosphere. It assesses the role of water in a range of earth processes and considers environmentally friendly approaches to preserving water environments for present and future generations. Included are transport phenomena and chemical reactivity, origin of geofluids, fluid-rock interactions, water as a trigger for earthquake and volcanic eruptions, and the global circulation of water in the Earth’s interior (crust, mantle and core), as well as the cause-and-effect relationship between water, ecology and life in various environments.

Fields of interest
Condensed Matter; Hydrogeology

Target groups
Chemists, materials scientists, geoscientists, environmentalists, and biologists

Type of publication
Proceedings

Due May 2007


80.10 €
ISBN 978-0-7354-0403-8
MATLAB® Recipes for Earth Sciences

MATLAB® is used in a wide range of applications in geosciences, such as image processing in remote sensing, generation and processing of digital elevation models and the analysis of time series. This book introduces methods of data analysis in geosciences using MATLAB® such as basic statistics for univariate, bivariate and multivariate datasets, jackknife and bootstrap resampling schemes, processing of digital elevation models, gridding and contouring, geostatistics and kriging, processing and georeferencing of satellite images, digitizing from the screen, linear and nonlinear time-series analysis and the application of linear time-invariant and adaptive filters. The revised and updated Second Edition includes new subchapters on windowed Blackman-Tukey, Lomb-Scargle and Wavelet powerspectral analysis, statistical analysis of point distributions and digital elevation models, and a full new chapter on the statistical analysis of directional data. The text includes a brief description of each method [...] Features

Contains new subchapters and a full new chapter on the statistical analysis of directional data. Contains exercises and fully worked-out solutions Many detailed illustrations Digital version of MATLAB recipes on CD-ROM

Contents


Fields of interest

Computer Applications in Geosciences; Qualitative Geology; Math. Applications in Geosciences

Target groups

Graduates, undergraduates, scientists, researchers, professionals

Type of publication

Professional book

Due July 2007

Paleopalynology

Paleopalynology, second edition, provides profusely illustrated treatment of fossil palynomorphs, including spores, pollen, dinoflagellate cysts, acritarchs, chitinosaurs, scolecodonts, and various microscop ic fungal and algal dispersal bodies. The book serves both as a student text and general reference work. Palynomorphs yield information about age, geological and biological environment, climate during deposition, and other significant factors about the enclosing rocks. Extant spores and pollen are treated first, preparing the student for more difficult work with fossil sporomorphs and other kinds of palynomorphs. Recognizing that palynomorphs occur together in rocks because of chemical robustness and stratigraphic distribution, not biological relationship, the central sections are organized stratigraphically. Among many other topics presented are the sedimentation and geothermal alteration of palynomorphs, and palynofacies analysis. An appendix describes laboratory methods. The glossary, [...] Features

Provides a very complete coverage of all aspects of the study of all of the kinds of fossil palynomorphs as yet studied. Second edition closely follows the first edition per request by a great variety of users and has been updated and expanded where necessary. The gradual introduction of concepts, and the stratigraphic organization of presentation make the volume not only suitable as a reference source, but also [...] Contents


Geology, Sedimentology, Palaeontology, Anthropology, Paleogeology, Natural Processes

Target groups

Palynologists, paleobotanists, geologists, geocologists, academics and graduates in palynological courses, practitioners, scientists, researchers and lecturers interested in paleopalynology

Type of publication

Monograph

Due September 2007

Originally published as a monograph

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Monograph

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92,95 €


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Target groups

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Type of publication

Monograph

Due September 2007

Originally published as a monograph


184,95 €


Paleopalynology

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Target groups

Palynologists, paleobotanists, geologists, geocologists, academics and graduates in palynological courses, practitioners, scientists, researchers and lecturers interested in paleopalynology

Type of publication

Monograph

Due September 2007

Originally published as a monograph


92,95 €

Ages, Generations and the Social Contract
The Demographic Challenges facing the Welfare State

Our societies are ageing. The family is changing. Labour force behaviour is evolving. How is the organisation of family and collective solidarity adapting in this context of longer life spans, low fertility, and work that is simultaneously scarce and abundant? The welfare states are currently facing three main challenges: ensure satisfactory living conditions for the elderly without increasing the cost burden on the active population, reduce social inequality, and maintain equity between successive generations. In this book, researchers from different countries compare their experiences and offer contrasting views on the future of social protection. They consider the theoretical aspects of the intergenerational debate, relations between generations within the family, the living standards of elderly people, and the question of social time.

Features
For the first time in history it is common that at least three and sometimes four generations are living at the same time; this book examines the new interactions between family change, labour force participation and population ageing. Comparative approaches for developed countries in a holistic way Life cycle approach within each generation taking into account the dynamics of an intergenerational context Focus [...]”

Contents

Fields of interest
Demography; Aging; Social Sciences; Social Policy; Family Relations; Population Economics

Target groups
Demographers, Economists and Sociologists

Type of publication
Monograph

Due July 2007
2007. XXVI, 430 p. 195 illus. (Environmental Science) Hardcover
129,95 €
ISBN 978-3-540-34782-8

Remote Sensing in Archaeology
Whether deployed in space or on the surface of the earth, remote sensing instruments are increasingly becoming standard archaeological tools. Space age and spatial techniques have begun to accumulate a wealth of information and unusual evidence such as the presence of sand-buried courses of ancient rivers in the Sahara and the associated remains of human occupations. Perhaps as important, some have been able to gather priceless knowledge without disturbing fragile sites—a capability that is particularly significant in this era of conservation. Remote Sensing in Archaeology illustrates the uses of advanced technology in archaeological investigation. It deals with hand-held instruments that probe the subsurface of the earth to unveil layering and associated sites; underwater exploration and photography of submerged sites and artifacts; and the utilization of imaging from aircraft and spacecraft to reveal the regional setting of archaeological sites and to assist in cultural resource management. In each [...]”

Fields of interest
Archaeology; Remote Sensing/Photogrammetry; Geoinformation/Cartography

Target groups
Archaeologists, geologists and those developing GIS/GPR/remote sensing systems

Type of publication
Monograph

Due May 2007
2007. XV, 553 p. With CD-ROM (Interdisciplinary Contributions to Archaeology) Hardcover
139,95 €
Remote Sensing in Archaeology

Whether deployed in space or on the surface of the earth, remote sensing instruments are increasingly becoming standard archaeological tools. Space age techniques have begun to accumulate a wealth of information and unusual evidence such as the presence of sand-buried courses of ancient rivers in the Sahara and the associated remains of human occupations. Perhaps as important, some have been able to gather priceless knowledge without disturbing fragile sites—a capability that is particularly significant in this era of conservation. Remote Sensing in Archaeology illustrates the uses of advanced technology in archaeological investigation. It deals with hand-held instruments that probe the subsurface of the earth to unveil layering and associated sites; underwater exploration and photography of submerged sites and artifacts; and the utilization of imaging from aircraft and spacecraft to reveal the regional setting of archaeological sites and to assist in cultural resource management. In each [...]  

Features  
Covers the breadth of remote sensing that is applicable to archaeology including satellite images, GIS, ground-penetrating radar, and maritime settings. The cases included are international and covers sensing in arid, semi-arid and tropical regions. Includes a CD with 4-color images illustrating the use of remote sensing technology.

Contents  
Foreword; Acknowledgements; Introduction; Radar and Satellite Images; Imaging Radar in Archaeological Investigations: An Image Processing Perspective; Radar Images and Geoarchaeology of the Eastern Sahara; Southern Arabian Desert Trade Routes, Frankincense, Myrrh, and the Ubar Legend; The Use of Interferometric Synthetic Aperture Radar (InSAR) in Archaeological Investigations and Cultural Heritage Preservation; Detection and Identification of Archaeological Sites and Features Using Synthetic Aperture Radar (SAR) Data Collected from Airborne Platforms; Putting Us on the Map.  

Fields of interest  
Archaeology; Remote Sensing/Photogrammetry; Geoinformation/Cartography

Type of publication  
Contributed volume  

Due August 2007

The Environment in Asia Pacific Harbours

Eric Wolanski’s book has received a UN award for excellence. It received the award as being exceptional in the UN Oceans Atlas! Worldwide, urbanization has already reached unprecedented levels in the estuarine and coastal zone. This is particularly the case in the Asia Pacific region where mega-cities and mega-harbours have developed and are still growing. As a result environmental degradation is significant and growing. This book details how science can provide solutions so that economic and social developments can be ecologically sustainable. This book demonstrates the different solutions and pitfalls, successes and failures in a large number of ports and harbours in the Asia Pacific Region, and this will be based on science and aimed at management. Twelve sites are discussed in detail, integrating physics and biology. These are Tokyo Bay, the Pearl Estuary, Hong Kong, Shanghai and the Yangtze delta, Klang, Manila Bay, Jakarta Bay, Pearl Harbour, Ho Chi Minh City and the new [...]  

Features  
Shows significance and growth of environmental degradation in the Asia Pacific region; Shows the balance between economy, social issues, public health and marine environment for people living near coastlines and in their watershed; Shows solutions and pitfalls in managing environment in mega-harbours and cities; Shows how physical processes exert influence on biological processes in urbanised waters.

Contents  
Increasing trade and urbanisation of the Asia Pacific coast; Tokyo Bay: its environmental status—past, present and future; Ecological network linked by the planktonic larvae of the clam Ruditapes philippinarum in Tokyo Bay; Circulation processes in Tokyo Bay; Effects of oceanic water intrusion on the Tokyo Bay environment; Influence of the deep waterway project on the Changjiang Estuary; Impact of human activities on the health of ecosystems in the Changjiang Delta region; Geographical and ecological setting of the Pearl River estuary; Physical processes and sediment dynamics.

Fields of interest  
Applied Geosciences; Geophysics/Geodesy; Meteorology/Climateology

Target groups  
Researchers, postgraduates and graduate students.

Type of publication  
Proceedings  

Due June 2007

Deformation and Gravity Change: Indicators of Isostasy, Tectonics, Volcanism, and Climate Change

Most of the papers in this book were presented at the workshop on ‘Deformation and Gravity Change: Indicators of Isostasy, Tectonics, Volcanism and Climate Change’, which took place at the Casa de los Volcanes on Lanzarote, Spain, during March 1-4, 2005. It was jointly organized and supported by the International Association of Geodesy (IAG), the Spanish Ministry of Education and Science, the Spanish Council for Scientific Research and the Cabildo Insular de Lanzarote. The workshop also served as the first meeting of the members of the IAG Working Group IGGC2 on ‘Dynamic Theories of Deformation and Gravity Fields’. This subject reflects the major developments in geodynamics during the last decade, when temporal variations of the deformation and gravity fields recorded by the geodetic measuring techniques and reflecting isostatic, tectonic or volcanic processes in the Earth’s interior as well as hydrologic or oceanographic processes on its surface have gained even increasing importance.

Features  
Leading experts describe major developments in geodynamics. Views on internal and surface processes of the Earth.

Fields of interest  
Applied Geosciences; Geophysics/Geodesy; Meteorology/Climateology

Target groups  
Researchers, postgraduates and graduate students.

Type of publication  
Proceedings  

Due June 2007

2007. 252 p. (Pageoph Topical Volumes) Softcover  
49.90 €  
ISBN 978-3-7643-8416-6

2007. X, 554 p. With CD-ROM. (Interdisciplinary Contributions to Archaeology) Softcover

42.95 €  

2007. XX, 498 p. With CD-ROM. Softcover

74.95 €  
Light Absorption in Sea Water

This book provides a detailed description of light absorption and absorbents in seawaters with respect to provenance, region of the sea, depth of the occurrence and trophicity. The text is based on a substantial body of contemporary research results taken from the subject literature (over 400 references) and the work of the authors over a period of 30 years.

Features
provides a detailed description of light absorption and absorbents in a variety of seawaters based on extensive, contemporary research invaluable to researchers and students in marine sciences and oceanography.

Contents

Fields of interest
Oceanography; Biogeosciences; Geochemistry; Environmental Physics; Geocology/Natural Processes

Target groups
Researchers and teachers in marine sciences and oceanography

Type of publication
Monograph

Due June 2007


134,95 €

GPS
Theory, Algorithms and Applications

This reference and handbook describes theory, algorithms and applications of the Global Positioning System (GPS/Galileo). It is primarily based on source-code descriptions of the KSGsoft program developed by the author at the GFZ in Potsdam. The theory and algorithms are extended and verified for a new development of a multiple functional GPS/Galileo software. Besides the concepts such as the unified GPS data processing method and the numerical solution of the variation equations, as well as the general ambiguity search criteria reported in the first edition, there are several highlights reported. Such as the equivalent principle and its applications, the theory of independent parameterisation, the diagonalisation algorithm, etc. Mathematically rigorous, the book begins with the basics of coordinate and time systems and satellite orbits, as well as GPS observables, and deals with topics such as physical influences, observation equations and their parameterisation, adjustment and filtering. [...] Features
An excellent reference and handbook of GPS/Galileo research and applications. Includes theory, algorithms and applications of the GPS, GLONASS and Galileo systems Combines a theoretical basis with practical and software experience. Clearly organized Standard software is explained.

Contents

Fields of interest
Geophysics/Geodesy; Geoinformation/Cartography; Landscape/Regional and Municipal Planning; Extraterrestrial Physics, Space Sciences; Automotive and Aerospace Engineering; Electronic and Computer Engineering

Target groups
Graduate students, researchers, practitioners

Type of publication
Monograph

Due August 2007

No distribution rights for China

2007. XXI, 340 p. 59 illus. Hardcover

99,95 €
ISBN 978-3-540-72714-9

Superplumes: Beyond Plate Tectonics

This book provides a concise overview of our understanding of the entire mantle, its evolution since early differentiation and the consequences of superplumes for earth surface processes. The balanced, international authorship of the eighteen contributors has produced a state-of-the-science report on the emerging concept of superplumes and has documented the potential of superplumes to serve as a testable model for future studies. The topic of superplume dynamics has been treated from different angles covering the sub-disciplines of geology, geochemistry, petrology as well as geophysics (including mineral physics, seismic tomography and mantle dynamics). For instance, it is shown how transport of heat via superplumes, huge stable pipes connecting the high-temperature core with the surface land mass, could have caused mass extinctions and drastic environmental change. Audience: Scientists, researchers and graduate students in geology, geochemistry and geophysics, planetary scientists. [...] Features
Presenting a new concept to explain catastrophic events on Earth through geologic time, such as mass extinction and drastic environmental change Interdisciplinary in approach and authorship. Abundantly illustrated with full color images.

Contents

Fields of interest
Geophysics/Geodesy; Mineralogy; Geochemistry; Planetology; Historical Geology

Target groups
Students, scientists, researchers, libraries in Earth Sciences in its broader sense; Geology (regional geology, igneous-metamorphic petrology, volcanology, mineralogy, experimental petrology, structural geology, paleontology, historical geology, Archean geology, geochemistry); Geophysics (seismology, rheology, paleomagnetism); Planetology, Astrobiology and Environmental Sciences

Type of publication
Monograph

Due June 2007

2007. XVII, 564 p. 189 illus., 112 in color. Hardcover

79,95 €
ISBN 978-1-4020-5749-6
Over the past decade, the transport industry has become an increasingly popular scapegoat for polluting the environment with emissions and noise. Therefore, additional transport infrastructure investments, especially in road transport, are becoming more and more contentious. Conversely, the advocates of free trade stress the importance of transport to enhance economic growth and subsequently the standards of living. Thus, political decision makers and business people alike are facing the challenge of reconciling these conflicting ideas. Though being one of the most prominent topics in public discussion, hard facts are still rare. In order to analyze the question from a different perspective, this book sets out to combine different approaches from economics as well as business administration to stimulate scientific discourse and to support decision-makers in their efforts to ameliorate the situation. The first part of this book contributes to the empirics of the relationship between transport and [...]
Yes, please send me:

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