

**M. Bostenaru Dan**, Ion Mincu University of Architecture and Urbanism, Bucharest, Romania; **I. Armas**, University of Bucharest, Bucharest, Romania; **A. Goretti**, Seismic and Volcanic Risk Office, Rome, Italy (Eds)

## Earthquake Hazard Impact and Urban Planning

The classical field dealing with earthquakes is called "earthquake engineering" and considered to be a branch of structural engineering. In projects dealing with strategies for earthquake risk mitigation, urban planning approaches are often neglected. Today interventions are needed on a city, rather than a building, scale. This work deals with the impact of earthquakes, including also a broader view on multihazards in urban areas. Uniquely among other works in the field, particular importance is given to urban planning issues, in conservation of heritage and emergency management. Multicriteria decision making and broad participation of those affected by disasters are included.

### Features

► Broadens understanding on urban planning in earthquake disaster management ► Outlines vulnerability, planning, risk assessment and reconstruction ► Includes remote sensing/geo-information and aspects of architecture and urbanism in the reconstruction of disaster

### Contents

Part I: Urban hazard, exposure and vulnerability.- Part II: Earthquake risk assessment.- Part III: Risk management.- Part IV Impact and Decision making tools.

### Fields of interest

Natural Hazards; Environmental Management; Landscape/Regional and Urban Planning

### Target groups

Research

### Product category

Contributed volume

Due January 2014

2014. X, 290 p. 155 illus., 100 in color. (Environmental Hazards) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50

► € 99,99 | £90.00

ISBN 978-94-007-7980-8



9 789400 779808



9 783319 030975

Due December 2013

2014. XVIII, 159 p. 94 illus., 17 in color. (Springer Theses) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50

► € 99,99 | £90.00

ISBN 978-3-319-03097-5

**S.-Y. Chien**, University of Cambridge, Cambridge, UK

## Rheological and Seismic Properties of Solid-Melt Systems

### A Mechanical Spectroscopy Study

Our understanding of the rheological and seismic properties of the Earth's interior relies on interpreting geophysical observations using mineral physics data. The complexity of natural materials complicates these interpretations, but here the key features of such materials in controlling the attenuation of seismic waves are determined by a set of careful experiments. This thesis clearly explains how dynamic mechanical spectroscopy has been used to determine the visco-elastic properties of igneous and sedimentary rocks containing geological fluids. These experiments highlight, for the first time, the importance of mineral and rock microstructures as controls on geophysical properties of solids, particularly near the melting point.

### Features

► Nominated as an outstanding Ph.D. thesis by the University of Cambridge, UK ► Describes a broad range of experimental approaches to understand mineral ► Includes applications to igneous, metamorphic and sedimentary systems ► Links new data with developing theories

### Contents

Introduction.- Experimental methods.- Sample characteristics.- Thermal relaxations in gabbro and basalt.- Glass transition and brittle failure of crystal-glass silicates.- Crackling noise in basalt and gabbro.- Fluid pressure and failure modes of sandstones.- Conclusion.

### Fields of interest

Structural Geology; Quantitative Geology; Spectroscopy and Microscopy

### Target groups

Research

### Product category

Monograph

**N. Diodato**, Met European Research Observatory, Benevento, Italy; **G. Bellocchi**, French National Institute of Agricultural Research, Clermont-Ferrand, France (Eds)

## Storminess and Environmental Change

### Climate Forcing and Responses in the Mediterranean Region

### Contents

Introduction.- Extreme rainfalls in the Mediterranean area.- Rainfalls and storm erosivity.- Finding simplicity in storm erosivity modelling.- Characteristics of flash-flood regimes in the Mediterranean region.- Spatial pattern probabilities exceeding critical threshold of annual mean storm-erosivity in Euro-Mediterranean areas.- Landscape scales of erosive storm hazard across the Mediterranean region.- Monthly erosive storm hazard within river basins of the Campania Region, Southern Italy.- Storm-erosivity modelling for addressing hydrological effectiveness in France.- Modelling long-term storm erosivity time-series: a case study in the Western Swiss Plateau.- Temporal and spatial patterns in design-storm erosivity over Sicily Region.- Historical reconstruction of erosive storms driving damaging hydrological events in the Bonea Basin, Southern Italy.- Triggering conditions and runoff simulation of the San Mango sul Calore debris avalanche, Southern Italy.- Climate-scale modelling of rainstorm-induced organic carbon losses in land-soil of Thune Alpine areas, Switzerland.- Hydroclimatological modelling of organic carbon dissolution in Lake Maggiore, Northern Italy.- A digression on the analysis of historical series of daily data for the characterization of precipitation dynamics. [...]

### Fields of interest

Natural Hazards; Meteorology; Earth System Sciences

### Target groups

Research

### Product category

Monograph

Due January 2014

2014. XIV, 389 p. 118 illus., 75 in color. (Advances in Natural and Technological Hazards Research, Volume 39) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50

► € 99,99 | £90.00

ISBN 978-94-007-7947-1



9 789400 779471



V. Gorokhovski, Athens, GA, USA

## Effective Parameters of Hydrogeological Models

Geological models used in predictive hydrogeological modeling are not exact replicas of the objects they represent: many details related to structures and properties of the objects remain unknown. Those details may considerably affect the simulation results. A provable evaluation of the uncertainty of hydrogeological and solute transport simulations are almost impossible. In this book the author describes how to obtain the best-possible results in simulations, based on the available data and predefined criteria that are turned into transforming mechanisms. The latter are mathematical expressions for evaluating model parameters supporting effective simulations. Examples of the mechanisms as well as methods of their evaluation are provided in this book.

### Features

► New edition of Gorokhovski's successful book - enhanced by a chapter on solute transport involving directly hydraulic dispersion of flux in porous media ► Includes many examples for effective simulations in hydrogeology ► Is useful for researchers and professionals

### Contents

Introduction.- Engineering Approach.- Geostatistical Approach.- Model Identification.- Transformation of Geological Objects' Properties into Effective Model Parameters.- Examples of Linear Transforming Mechanisms.- Examples of Non-Linear Transforming Mechanisms.- Evaluation of Transforming Mechanisms.- Inverse Problems and Transforming Mechanisms.- Convection Solute Transport through Porous Media. [...]

### Fields of interest

Hydrogeology; Hydrology/Water Resources; Engineering Design

### Target groups

Research

### Product category

Monograph

Due January 2014

2nd ed. 2014. XVI, 190 p. 68 illus., 35 in color. (Springer Hydrogeology) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50

► € 99,99 | £90.00

ISBN 978-3-319-03568-0



9 783319 035680



9 789400 779358

Due May 2014

2014. X, 240 p. (Topics in Geobiology, Volume 38)

Hardcover

► approx. \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50

► approx. € 99,95 | £90.00

ISBN 978-94-007-7935-8



9 789400 779358

### Fields of interest

Biogeosciences; Geochemistry; Paleontology

### Target groups

Research

### Product category

Monograph



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P. Hottinger, Allschwil (Basel), Switzerland

## Paleogene larger rotaliid foraminifera from the western and central Neotethys

With contrib. by: D. Bassi, University of Ferrara, Ferrara, Italy

This book provides a representative assessment of the state of the art of research on Paleogene rotaliid larger foraminifera. It gives an overview of the current understanding of systematics of this group and, in particular, of its biostratigraphic importance and palaeobiogeography. The senior author of the work, late Prof Hottiger, a leading scientist in the field, both from a systematic and applied side, presents in this book his most recent advances.

### Features

► Presents the most recent and up-to-date taxonomic re-assessment of fundamental and very common larger foraminiferal species occurring in Paleogene shallow water successions ► Includes superb illustrations making the book a reference in the field (hand- and laboratory manual) ► Contains unpublished data and illustrations ► Written by a leading scientist in the field-L Hottinger, both from a systematic and applied side, describing most recent advances

### Contents

Introduction.- Rotaliid shell architecture and the palaeodiversity of the Lockhartia Sea.- The system of the Rotaliidae, an overview.- Subfamily Rotaliinae Ehrenberg, 1839.- New subfamily Redmondininae.- New subfamily Lockhartiinae.- New subfamily Kathininae.- New subfamily Daviesininae.- Some taxa that are or remain excluded from the family Rotaliidae.- Rotaliid taxa with uncertain affinities.

### Fields of interest

Paleontology; Biogeosciences; Economic Geology

### Target groups

Research

### Product category

Monograph

Due March 2014

2014. 200 p. 123 illus. Hardcover

► approx. \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50

► approx. € 99,99 | £90.00

ISBN 978-3-319-02852-1



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## New Series Springer Oceanography

The Springer Oceanography series seeks to publish a broad portfolio of scientific books, aiming at researchers, students, and everyone interested in marine sciences. The series includes peer-reviewed monographs, edited volumes, textbooks, and conference proceedings. It covers the entire area of oceanography including, but not limited to, Coastal Sciences, Biological/Chemical/Geological/Physical Oceanography, Paleoceanography, and related subjects.

R. Hekinian, Saint-Renan, France

### Sea Floor Exploration

#### Scientific Adventures Diving into the Abyss

The author participated 38 expeditions including the first manned-submersible project to explore the Mid-Atlantic Ridge. This book provides a comprehensive overview of the past 45 years of sea floor exploration. It summarizes the mineralogical and petrological composition of sea floor rocks, ocean floor volcanism in relation with the geological setting as well as the discovery of hydrothermal activity and related to metalliferous deposits. Topics covered include the creation of the sea floor, its fracture zones and the structural setting of subduction zones.

#### Features

► Describes the discoveries and progress in deep ocean earth science ► Summary of 45 years research on mid-ocean ridges, hotspots, fracture zones and hydrothermal systems ► Provides a historical perspective on sea floor exploration including the first manned-submersible project

#### Contents

Introduction.- The birth of planet Earth.- Man's penetration into the abysses.- Sea floor rocks.- Earth's mantle melting and volcanism.- Hydrothermal activity and metalliferous deposits.- Oceanic ridges: Sea floor creation.- Fracture zones.- Voyage to Antarctica region.- Hotspots.- Subduction zones.

#### Fields of interest

Oceanography; Geology

#### Target groups

Popular/general

#### Product category

Monograph

D. Keppie, Nova Scotia Department of Natural Resources, Halifax, Canada

### The Analysis of Diffuse Triple Junction Zones in Plate Tectonics and the Pirate Model of Western Caribbean Tectonics

#### Contents

Introduction.-Western Caribbean Tectonics.- Abstract.-Tectonic constraints.-Theoretical analysis of Western Caribbean tectonics.-Western Caribbean Plate corners.-Relative Plate motions.-Western Caribbean arc deformation style.-Review of Western Caribbean and Gulf of Mexico tectonics.-Shortening at the Eastern Caribbean Plate boundary.-Extension conjugate to Eastern Caribbean shortening.-Displacements at the Western Caribbean Plate corners.-Western Caribbean microplates.-Discussion.-Consistency with known data.-Predictive Power.-A new, multi-mode model for Western Caribbean tectonics.-The Chortis Block controversy.-Neo-Caribbean tectonics.-Meeting of the Americas.-Age of Gulf of Mexico opening.-A geodynamic model for the Western Caribbean region.-Conclusions.-References.-Normalization analysis for possibly unstable triple junction zones.-Abstract.-Introduction.-Step 1: Define a doubly-tangent, moving Euclidean tectonic reference frame.-Step 2: Determine compatibility of major plate motions and plate boundary orientations.-Step 3: Determine the stability of the normalized, hypothetical triple junction.-Step 4: Identify end-member nonrigid solutions for an unstable triple junction.-References

#### Fields of interest

Structural Geology; Geophysics/Geodesy; Geomorphology

#### Target groups

Research

#### Product category

Brief

Due December 2013

2014. 245 p. 160 illus., 15 in color. (Springer Oceanography) Hardcover  
► approx. \*€ (D) 101,64 | € (A) 104,49 | sFr 126,50  
► approx. € 94,99 | £85.50  
ISBN 978-3-319-03202-3



9 783319 032023

Due March 2014

2014. VI, 54 p. 34 illus., 12 in color. (SpringerBriefs in Earth Sciences) Softcover  
► approx. \*€ (D) 42,79 | € (A) 43,99 | sFr 49,50  
► approx. € 39,99 | £33.99  
ISBN 978-1-4614-9615-1



9 781461 496151

M. Maugeri, University of Catania, Catania, Italy;  
C. Soccodato, Associazione Geotecnica Italiana,  
Rome, Italy (Eds)

## Earthquake Geotechnical Engineering Design

### Features

► Performance Design instead of prescriptive design ► Design of infrastructures to withstand high values of acceleration ► Performance of shallow foundations against liquefaction ► Seismic performance of river levees and dams and waste contaminant landfill ► Dynamic soil-structure interaction and underground structures

### Contents

Spatially constrained inversion of surface wave data to build shear wave velocity models.- Site Classification and spectral amplification for seismic code provisions.- Sand Liquefaction observed during Recent earthquake and Basic Laboratory Studies on Aging effect.- Liquefaction In Tokyo Bay And Kanto Regions In The 2011 Great East Japan Earthquake.- Allowable settlement and inclination of houses defined after the 2011 Tohoku - Pacific Ocean Earthquake in Japan.- Seismic Performance of River Levees; Experience and Prediction.- Earthquake Performance Design of Dams using Destructive Potential Factors.- Seismic response of shallow footings: a promising application for the macro-element approach.- Large-Scale Modeling of Ground and Soil-Structure Earthquake Response.- Seismic displacement based design of structures: relevance of soil structure interaction.- Performance and seismic design of underground structures.- Reinforced Soil Walls during the Recent Great Earthquakes in Japan and Geo-Risk based Design.- Performance Based Seismic Design of Geosynthetic Barriers for Waste Containment.

### Fields of interest

Geotechnical Engineering & Applied Earth Sciences; Civil Engineering; Natural Hazards

### Target groups

Research

### Product category

Monograph

Due January 2014

2014. X, 387 p. 302 illus., 212 in color. (Geotechnical, Geological and Earthquake Engineering, Volume 28) Hardcover  
► \*€ (D) 139,09 | € (A) 142,99 | sFr 173,50  
► € 129,99 | £117.00  
ISBN 978-3-319-03181-1



9 783319 031811

A. Melesse, Florida International University, Miami, FL, USA; W. Abtew, South Florida Water Management District, West Palm Beach, FL, USA; S. G. Setegn, Florida International University, North Miami, FL, USA (Eds)

## Nile River Basin

### Ecohydrological Challenges, Climate Change and Hydropolitics

### Contents

Part I: Hydrology and Water Availability.- The Nile River Basin.- Streamflow Data Needs for Water Resources Management and Monitoring Challenges: A Case Study of Wami River Sub-basin in Tanzania.- Satellite Rainfall Products and their Reliability in the Blue Nile basin.- Africa-Wide Monitoring of Small Surface Water Bodies Using Multi-Source Satellite Data: A Monitoring System for FEWS NET.- Surface and Ground Water Resources of Ethiopia: Potentials and Challenges of Water Resources Development.- Land and Water in the Nile basin.- Part II: Soil erosion and Water Quality.- Soil Erosion and Discharge in the Blue Nile Basin: Trends and Challenges.- Spatial and Temporal Patterns of Soil Erosion in the Semi-humid Ethiopian Highlands: A Case Study of Debre Mawi Watershed.- Modeling Sediments Dynamics: Effect of Land Use, Topography and Land Management in the Wami-Ruvu Basin Tanzania.- Assessment of Soil Erosion in the Blue Nile Basin.- Hydro-epidemiology of the Nile Basin: Understanding the Complex Linkages between Water and Infectious Diseases.- Part III: Lakes and watersheds.- Monitoring State of Biomass Recovery in the Blue Nile Basin Using Image Based Disturbance Index.- Bathymetry, Lake Area and Volume Mapping: A Remote Sensing Perspective. [...]

### Fields of interest

Hydrogeology; Hydrology/Water Resources; Physical Geography

### Target groups

Research

### Product category

Monograph

Due January 2014

2014. I, 199 p. 227 illus., 172 in color. Hardcover  
► \*€ (D) 181,89 | € (A) 186,99 | sFr 226,50  
► € 169,99 | £153.00  
ISBN 978-3-319-02719-7



9 783319 027197

T. Rashid, University of Dhaka, Dhaka, Bangladesh

## Holocene Sea-level Scenarios in Bangladesh

This Brief deals with the reconstruction of Holocene paleoenvironment in the central part of Bangladesh in relation to relative sea-level (RSL) changes which is 200 km north from the present coastline. Lithofacies characteristics, mangal peat, diatom and paleophysiological evidences were considered to reconstruct the past position and C-14 ages were used to determine the time of formation of the relative sea-level during the Holocene. With standard reference datum the required m.s.l. at the surface of five sections are calculate and the RSL curve suggests that Bangladesh has experienced two mid Holocene RSL transgressions punctuated by regressions. The abundant marine diatom and mangrove pollens indicates that the highest RSL transgression in Bangladesh is around 6000 cal BP which is attained at least 4.5 to 5m higher than the modern m.s.l. After this phase, the relative sea-level started to fall and consequently a freshwater peat developed around 5980 5700 cal BP. The abundant mangrove pollens in salt-marsh succession shows the regression around 5500 cal BP and, the height was 1 2 m higher than the modern sea level. These and more interesting findings are discussed in this Brief.

### Contents

Introduction.- Sea level study: Methods and techniques.- Global Sea-level scenarios during the Holocene.- Landforms development in Bangladesh.- Holocene Sea-level Changes in Bangladesh.- Discussion and Conclusion.

### Fields of interest

Oceanography; Physical Geography; Coastal Sciences

### Target groups

Research

### Product category

Brief

Due March 2014

2014. 70 p. 31 illus., 6 in color. (SpringerBriefs in Oceanography) Softcover  
► approx. \*€ (D) 53,49 | € (A) 54,99 | sFr 67,00  
► approx. € 49,99 | £44.99  
ISBN 978-981-4560-98-6



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V. P. Sati, Mizoram University, Aizawl, India

## Towards Sustainable Livelihoods and Ecosystems in Mountain Regions

Sustainable livelihoods and ecosystems are far-reaching and burning issues in the wake of high growth of population, low production and per ha yield of crops and depletion of biodiversity resources. Mountainous regions of the world are facing the menace of poverty, food insecurity and malnutrition. Further, tremendous growth in population and slow pace of development have together forced most of the population to live below poverty line. Traditionally depending upon cultivating subsistence crops for food requirement, the people living in mountainous region are unable to produce sufficient food grains to run their livelihood smoothly.

### Features

► Unique in terms of enhancing livelihoods in the mountain region in general and the Himalaya mountains in particular ► No similar work on this issue in the Himalayan region ► Gives a comprehensive picture of the Indian Central Himalayan Region and its livelihood enhancement. It is a valuable resource for all stakeholders working for the provision of sustainable livelihood in the Himalayas

### Contents

Geo-Environmental Setting.- Socio-Economy and Population Profile.- Sustainable Livelihoods: Diversification and Enhancement.- Livelihood Analysis.- Development of Tourism and Hydro-electricity.- Case Studies.- Mountain Ecosystem.- Sustainable Mountain Development: Challenges and Opportunities.

### Fields of interest

Environmental Science and Engineering; Regional and Cultural Studies; Sustainable Development

### Target groups

Research

### Product category

Monograph

Due January 2014

2014. XI, 169 p. 54 illus., 41 in color. (Environmental Science and Engineering / Environmental Science) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50  
► € 99,99 | £90.00

ISBN 978-3-319-03532-1

V. Surkov, Moscow, Russia; M. Hayakawa, The University of Electro-Communications, Tokyo, Japan

## Ultra and Extremely Low Frequency Electromagnetic Fields

The major emphasis of this book is on physical mechanisms and sources of the ULF/ELF natural electromagnetic fields noises. In the course of this text, some of these mechanisms of magnetospheric origin will be treated in detail and other in a more sketchy fashion while the global electromagnetic resonances excited by lightning activity and other sources are the priority. The interested reader is referred to the books cited in the text for details about the ULF/ELF fields of the magnetospheric origin.

### Features

► Designed for broad geophysical community, scientists, lecturers, post- and undergraduates ► Tries to give readers some insights into how different sources and physical mechanisms affect ULF/ELF effects ► Investigates non seismic prediction of impending natural disasters such as earthquakes, volcano eruptions and tsunamis

### Contents

Scope and Goals of the Text.- The Earth's Magnetic Field.- The Ionosphere and the Atmosphere.- Earth-Ionosphere Cavity Resonator.- Ionospheric Alfvén Resonator.- Magnetospheric MHD Resonances and ULF pulsations.- Monitoring of near-earth plasma.- Geomagnetic Perturbations.- Laboratory Study of Rock Deformation and Fracture.- Electrokinetic Effect in Water-Saturated Rock.- EM Effects Resulted From Natural Disasters.- Electromagnetic Effects Resulted From Underground Explosions.

### Fields of interest

Geophysics/Geodesy; Atmospheric Sciences; Geophysics and Environmental Physics

### Target groups

Research

### Product category

Monograph

Due June 2014

2014. 300 p. (Springer Geophysics) Hardcover

► approx. \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50  
► approx. € 99,95 | £90.00

ISBN 978-4-431-54366-4

Y. Tang, J. Zhou, X. Ren, Q. Yang, Tongji University, Shanghai, People's Republic of China

## Dynamic Response and Deformation Characteristic of Saturated Soft Clay under Subway Vehicle Loading

Involving several areas of geological engineering, geotechnical engineering and tunnel engineering, this book describes the soft soil deformation characteristics and dynamic responses induced by subway vibration load. Based on field monitoring and laboratory testing data, with both comprehensive micro- and macroanalysis, the authors present dynamic characteristics and deformation settlement of saturated soft clay surrounding subway tunnels using dynamic and static methodology. Mechanism of deformation, failure in microstructure of soft clay soil, dynamic response, macro deformation and settlement are all discussed and analyzed thoroughly and systematically.

### Features

► First book concentrated on dynamic responses and deformation characteristics of soft clay soils induced by subway vehicle load ► Provides huge data sets obtained from many field monitoring and laboratory tests ► Offers thorough and systematical analysis of the complex and subtle deformation mechanism of soft clay surrounding subway tunnels

### Contents

Introduction.- Field test.- Laboratory tests.- Microstructure of soil.- Theoretical analysis and numerical simulation.- Settlement predictions for soil around subway tunnels.

### Fields of interest

Geotechnical Engineering & Applied Earth Sciences; Civil Engineering; Transportation

### Target groups

Research

### Product category

Monograph

Due December 2013

Jointly published with Science Press Ltd., Beijing, China

Distribution rights of the print version for China: Science Press Ltd., Beijing, China

2014. XII, 250 p. 130 illus., 82 in color. (Springer Environmental Science and Engineering) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50  
► € 99,99 | £90.00

ISBN 978-3-642-41986-7



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## New Series Disaster Risk Reduction

Series editor: R. Shaw

Disaster risk reduction is a process, which leads to the safety of community and nations. After the 2005 World Conference on Disaster Reduction, held in Kobe, Japan, the Hyogo Framework for Action [HFA] was adopted as a framework of risk reduction. The academic research and higher education in disaster risk reduction has made / is making gradual shift from pure basic research to applied, implementation oriented research. More emphasis is given on the multi-stakeholder collaboration and multi-disciplinary research. Emerging university networks in Asia, Europe, Africa and Americas have urged for the process-oriented research in disaster risk reduction field. Keeping this in mind, this new series will promote the outputs of action research on disaster risk reduction, which will be useful for a wider range of stakeholders including academicians, professionals, practitioners, and students and researchers in the related field. The series will focus on some of emerging needs in the risk reduction field, starting from climate change adaptation, urban ecosystem, coastal risk reduction, education for sustainable development, community based practices, risk communication, human security etc. Through academic review, this series will encourage young researchers and practitioners to analyze field practices, and link it to theory and policies with logic, data and evidences. Thus, the series emphasizes evidence based risk reduction methods, approaches and practices.

R. Shaw, Kyoto University, Kyoto, Japan (Ed)

## Community Practices for Disaster Risk Reduction in Japan

### Features

► Constitutes the first book on innovative approaches of community practices of Japan ► Links academic research and field practices ► Highlights, in the post-disaster scenario of Japan, the key aspects of community-based risk reduction

### Contents

Disaster Risk Reduction and Community Approaches.- Kobe Earthquake: Turning Point of Community-based Risk Reduction in Japan.- Typhoon, Flood and Landslide Related Disasters in Japan: Role of Communities.- Social Capital in Disaster Recovery in Japan: An Overview.- Concepts and Approaches of School-centered Disaster Resilient Communities.- Building Disaster Resilient Community through Healthcare Networking.- Roles of Community Radio in Disaster Management: Reflections from Japan.- Community Development and Disaster Preparedness in a Depopulated Society: Case of Tosashimizu City, Kochi Prefecture.- Traditional Community-based Disaster Management in World Heritage Site of Shirakawa Village.- Community Practices of Transmitting Daily and Disaster Information in Reihoku Area.- Community Resilience after Chuetsu Earthquake in 2004: Extinction or Relocation?.- Issues and Challenges of Temporary Housing in Post 3.11 Kesenuma.- Adapting Fisheries to Climate Change: Community-based and Scientific-oriented Fisheries Management of Saroma Lake, Hokkaido.

### Fields of interest

Natural Hazards; Sustainable Development

### Target groups

Graduate

### Product category

Monograph

J. Tanimoto, Kyushu University, Hakata, Japan

## Mathematical Analysis of Environmental System

This book is for all graduate students who are specializing in any environmental issue and who wish to grasp the fundamentals of physics that are required in various fields of science and engineering. The book provides the structural concept of the system state equation and its dynamics, which can be applicable to numerical solutions in several important areas such as heat and mass transfer and fluid dynamics. As a first step, there is a description of how to solve a linear system by conducting an analysis of temperature distribution in an infinite soil as a practical example. This exercise helps readers to fully understand what time and space discretizations are, and how actual numerical solutions should work. Because the concept of the system state equation relies on a vector-matrix form, the book shows how that particular form is applicable to other practical procedures: linear multi regression analysis, the least square method, and others.

### Features

► Systematic explanation on how a reader obtains his/her result by mentioning from theory to practical numerical procedure ► Numerous colorful figures hand-drawn by the author help readers' intuitive understanding ► Exercises help comprehensive understanding of the readers, and also support their self-learning

### Contents

Environmental Systems and Analysis Methods.- Linear Systems Analysis Methods.- Applications of Vector Matrix Operations.- Dynamics of Non-Linear Systems.

### Fields of interest

Earth System Sciences; Environmental Physics; Renewable and Green Energy

### Target groups

Graduate

### Product category

Monograph

Due December 2013

2014. X, 236 p. 57 illus., 38 in color. (Disaster Risk Reduction) Hardcover

► \*€ (D) 106,99 | € (A) 109,99 | sFr 133,50

► € 99,99 | £90.00

ISBN 978-4-431-54245-2



9 784431 542452

Due December 2013

2014. XV, 94 p. 70 illus., 62 in color. Softcover

► \*€ (D) 53,49 | € (A) 54,99 | sFr 67,00

► € 49,99 | £44.99

ISBN 978-4-431-54621-4



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