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KEY=REGRESSION - CARNEY WILSON

COMPUTATIONAL AND EXPERIMENTAL SIMULATIONS IN ENGINEERING

PROCEEDINGS OF ICCES 2020. VOLUME 1

Springer Nature This book gathers the latest advances, innovations, and applications in the field of computational engineering, as presented by leading international researchers and engineers at the 26th International Conference on Computational & Experimental Engineering and Sciences (ICCES), held in Phuket, Thailand on January 6-10, 2021. ICCES covers all aspects of applied sciences and engineering: theoretical, analytical, computational, and experimental studies and solutions of problems in the physical, chemical, biological, mechanical, electrical, and mathematical sciences. As such, the book discusses highly diverse topics, including composites; bioengineering & biomechanics; geotechnical engineering; offshore & arctic engineering; multi-scale & multi-physics fluid engineering; structural integrity & longevity; materials design & simulation; and computer modeling methods in engineering. The contributions, which were selected by means of a rigorous international peer-review process, highlight numerous exciting ideas that will spur novel research directions and foster multidisciplinary collaborations.

COMPUTER ANIMATION AND SOCIAL AGENTS

33RD INTERNATIONAL CONFERENCE ON COMPUTER ANIMATION AND SOCIAL AGENTS, CASA 2020, BOURNEMOUTH, UK, OCTOBER 13-15, 2020, PROCEEDINGS

Springer Nature This book constitutes the revised selected papers of the 33rd International Conference on Computer Animation and Social Agents, CASA 2020, held in Bournemouth, UK*, in October 2020. The 1 full paper and 13 short papers presented were carefully reviewed and selected from a total of 86 submissions. The papers are organized in topical sections of modelling, animation and simulation; virtual reality; image processing and computer vision. *The conference was held virtually due to the COVID-19 pandemic.

COMPUTATIONAL MECHANICS WITH NEURAL NETWORKS

Springer Nature This book shows how neural networks are applied to computational mechanics. Part I presents the fundamentals of neural networks and other machine learning method in computational mechanics. Part II highlights the applications of neural networks to a variety of problems of computational mechanics. The final chapter gives perspectives to the applications of the deep learning to computational mechanics.

WATER ENGINEERING MODELING AND MATHEMATIC TOOLS

Elsevier Water Engineering Modeling and Mathematic Tools provides an informative resource for practitioners who want to learn more about different techniques and models in water engineering and their practical applications and case studies. The book provides modelling theories in an easy-to-read format verified with on-site models for specific regions and scenarios. Users will find this to be a significant contribution to the development of mathematical tools, experimental techniques, and data-driven models that support modern-day water engineering applications. Civil engineers, industrialists, and water management experts should be familiar with advanced techniques that can be used to improve existing systems in water engineering. This book provides key ideas on recently developed machine learning methods and AI modelling. It will serve as a common platform for practitioners who need to become familiar with the latest developments of computational techniques in water engineering. Includes firsthand experience about artificial intelligence models, utilizing case studies Describes biological, physical and chemical techniques for the treatment of surface water, groundwater, sea water and rain/snow Presents the application of new instruments in water engineering

FOREST-WATER INTERACTIONS

Springer Nature The United Nations has declared 2018-2028 as the International Decade for Action on Water for Sustainable Development. This is a timely designation. In an increasingly thirsty world, the subject of forest-water interactions is of critical importance to the achievement of sustainability goals. The central underlying tenet of this book is that the hydrologic community can conduct better science and make a more meaningful impact to the world's

water crisis if scientists are: (1) better equipped to utilize new methods and harness big data from either or both high-frequency sensors and long-term research watersheds; and (2) aware of new developments in our process-based understanding of the hydrological cycle in both natural and urban settings. Accordingly, this forward-looking book delves into forest-water interactions from multiple methodological, statistical, and process-based perspectives (with some chapters featuring data sets and open-source R code), concluding with a chapter on future forest hydrology under global change. Thus, this book describes the opportunities of convergence in high-frequency sensing, big data, and open source software to catalyze more comprehensive understanding of forest-water interactions. The book will be of interest to researchers, graduate students, and advanced undergraduates in an array of disciplines, including hydrology, forestry, ecology, botany, and environmental engineering.

CONSTRUCTING AND TESTING LOGISTIC REGRESSION MODELS FOR BINARY DATA

APPLICATIONS TO THE NATIONAL FIRE DANGER RATING SYSTEM

COMPUTATIONAL SCIENCE AND ITS APPLICATIONS - ICCSA 2022 WORKSHOPS

MALAGA, SPAIN, JULY 4-7, 2022, PROCEEDINGS, PART III

Springer Nature The eight-volume set LNCS 13375 - 13382 constitutes the proceedings of the 22nd International Conference on Computational Science and Its Applications, ICCSA 2022, which was held in Malaga, Spain during July 4 - 7, 2022. The first two volumes contain the proceedings from ICCSA 2022, which are the 57 full and 24 short papers presented in these books were carefully reviewed and selected from 279 submissions. The other six volumes present the workshop proceedings, containing 285 papers out of 815 submissions. These six volumes includes the proceedings of the following workshops: Advances in Artificial Intelligence Learning Technologies: Blended Learning, STEM, Computational Thinking and Coding (AAILT 2022); Workshop on Advancements in Applied Machine-learning and Data Analytics (AAMDA 2022); Advances in information Systems and Technologies for Emergency management, risk assessment and mitigation based on the Resilience (ASTER 2022); Advances in Web Based Learning (AWBL 2022); Blockchain and Distributed Ledgers: Technologies and Applications (BDLTA 2022); Bio and Neuro inspired Computing and Applications (BIONCA 2022); Configurational Analysis For Cities (CA Cities 2022); Computational and Applied Mathematics (CAM 2022), Computational and Applied Statistics (CAS 2022); Computational Mathematics, Statistics and Information Management (CMSIM); Computational Optimization and Applications (COA 2022); Computational Astrochemistry (CompAstro 2022); Computational methods for porous geomaterials (CompPor 2022); Computational Approaches for Smart, Conscious Cities (CASCC 2022); Cities, Technologies and Planning (CTP 2022); Digital Sustainability and Circular Economy (DiSCE 2022); Econometrics and Multidimensional Evaluation in Urban Environment (EMEUE 2022); Ethical AI applications for a human-centered cyber society (EthicAI 2022); Future Computing System Technologies and Applications (FiSTA 2022); Geographical Computing and Remote Sensing for Archaeology (GCRSArcheo 2022); Geodesign in Decision Making: meta planning and collaborative design for sustainable and inclusive development (GDM 2022); Geomatics in Agriculture and Forestry: new advances and perspectives (GeoForAgr 2022); Geographical Analysis, Urban Modeling, Spatial Statistics (Geog-An-Mod 2022); Geomatics for Resource Monitoring and Management (GRMM 2022); International Workshop on Information and Knowledge in the Internet of Things (IKIT 2022); 13th International Symposium on Software Quality (ISSQ 2022); Land Use monitoring for Sustainability (LUMS 2022); Machine Learning for Space and Earth Observation Data (MALSEOD 2022); Building multi-dimensional models for assessing complex environmental systems (MES 2022); MOdels and indicators for assessing and measuring the urban settlement deVELOPMENT in the view of ZERO net land take by 2050 (MOVEto0 2022); Modelling Post-Covid cities (MPCC 2022); Ecosystem Services: nature's contribution to people in practice. Assessment frameworks, models, mapping, and implications (NC2P 2022); New Mobility Choices For Sustainable and Alternative Scenarios (NEMOB 2022); 2nd Workshop on Privacy in the Cloud/Edge/IoT World (PCEIoT 2022); Psycho-Social Analysis of Sustainable Mobility in The Pre- and Post-Pandemic Phase (PSYCHE 2022); Processes, methods and tools towards RESilient cities and cultural heritage prone to SOD and ROD disasters (RES 2022); Scientific Computing Infrastructure (SCI 2022); Socio-Economic and Environmental Models for Land Use Management (SEMLUM 2022); 14th International Symposium on Software Engineering Processes and Applications (SEPA 2022); Ports of the future - smartness and sustainability (SmartPorts 2022); Smart Tourism (SmartTourism 2022); Sustainability Performance Assessment: models, approaches and applications toward interdisciplinary and integrated solutions (SPA 2022); Specifics of smart cities development in Europe (SPEED 2022); Smart and Sustainable Island Communities (SSIC 2022); Theoretical and Computational Chemistry and its Applications (TCCMA 2022); Transport Infrastructures for Smart Cities (TISC 2022); 14th International Workshop on Tools and Techniques in Software Development Process (TTSDP 2022); International Workshop on Urban Form Studies (UForm 2022); Urban Regeneration: Innovative Tools and Evaluation Model (URITEM 2022); International Workshop on Urban Space and Mobilities (USAM 2022); Virtual and Augmented Reality and Applications (VRA 2022); Advanced and Computational Methods for Earth Science Applications (WACM4ES 2022); Advanced Mathematics and Computing Methods in Complex Computational Systems (WAMCM 2022).

HIGH PERFORMANCE COMPUTING

ISC HIGH PERFORMANCE 2020 INTERNATIONAL WORKSHOPS, FRANKFURT, GERMANY, JUNE 21-25, 2020, REVISED SELECTED PAPERS

Springer Nature This book constitutes the refereed post-conference proceedings of 10 workshops held at the 35th

International ISC High Performance 2020 Conference, in Frankfurt, Germany, in June 2020: First Workshop on Compiler-assisted Correctness Checking and Performance Optimization for HPC (C3PO); First International Workshop on the Application of Machine Learning Techniques to Computational Fluid Dynamics Simulations and Analysis (CFDML); HPC I/O in the Data Center Workshop (HPC-IODC); First Workshop "Machine Learning on HPC Systems" (MLHPCS); First International Workshop on Monitoring and Data Analytics (MODA); 15th Workshop on Virtualization in High-Performance Cloud Computing (VHPC). The 25 full papers included in this volume were carefully reviewed and selected. They cover all aspects of research, development, and application of large-scale, high performance experimental and commercial systems. Topics include high-performance computing (HPC), computer architecture and hardware, programming models, system software, performance analysis and modeling, compiler analysis and optimization techniques, software sustainability, scientific applications, deep learning.

NUCLEAR POWER PLANT EQUIPMENT PROGNOSTICS AND HEALTH MANAGEMENT BASED ON DATA-DRIVEN METHODS

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ADVANCES IN THE EXPLORATION AND DEVELOPMENT OF UNCONVENTIONAL OIL AND GAS: FROM THE INTEGRATION OF GEOLOGY AND ENGINEERING

Frontiers Media SA

BIG EARTH DATA INTELLIGENCE FOR ENVIRONMENTAL MODELING

Frontiers Media SA

FUNCTIONAL DIVERSITY OF AQUATIC MICROORGANISMS AND THEIR ROLES IN WATER QUALITY

Frontiers Media SA

COASTS UNDER CHANGING CLIMATE: OBSERVATIONS AND MODELING

Frontiers Media SA

COMPARISON OF FOREST WATER AND ENERGY EXCHANGE MODELS

Elsevier Comparison of Forest Water and Energy Exchange Models includes results of comparisons and tests on micrometeorological and hydrological models against independent field data gathered from an International Union of Forestry Research Organizations workshop. The comparisons are made using the SWECON computer by means of the ECODATA program package and the SIMP simulation package. This book is divided into four sections, covering data and computer facilities; atmospheric exchange and radiation models; soil water and interception models; and comparison of models. The first part includes discussion on the climatic data and databases; evapotranspiration measurements; instrumentation; data gathering and processing; the storage, retrieval and analysis of continuously recorded ecosystems data; and the SIMP-interactive mini-computer package for simulating dynamic and static models. The second part presents the MICROWEATHER simulation model that is applied to a forest; the energy exchange model of a pine forest canopy; the simulation of the quality and quantity of short-wave radiation within and above canopies; and the physical model to simulate energy exchange of plant canopies. The third part offers the model HEJMDAL, which simulates water state and flow in the soil-plant-atmosphere system; the water regime of forests and meadow model; the annual energy and water flow in a layered soil model; and the model ETFORREST for the calculation of the actual evapotranspiration. The last section presents a comparison of radiation models, energy exchange models, and interception models.

REMOTE SENSING TECHNOLOGY APPLICATIONS IN FORESTRY AND REDD+

MDPI Advances in close-range and remote sensing technologies are driving innovations in forest resource assessments and monitoring on varying scales. Data acquired with airborne and spaceborne platforms provide high(er) spatial resolution, more frequent coverage, and more spectral information. Recent developments in ground-based sensors have advanced 3D measurements, low-cost permanent systems, and community-based monitoring of forests. The UNFCCC REDD+ mechanism has advanced the remote sensing community and the development of forest geospatial products that can be used by countries for the international reporting and national forest monitoring. However, an urgent need remains to better understand the options and limitations of remote and close-range sensing techniques in the field of forest degradation and forest change. Therefore, we invite scientists working on remote sensing technologies, close-range sensing, and field data to contribute to this Special Issue. Topics of interest include: (1) novel remote sensing applications that can meet the needs of forest resource information and REDD+ MRV, (2) case studies of applying remote sensing data for REDD+ MRV, (3) timeseries algorithms and methodologies for forest resource assessment on different spatial scales varying from the tree to the national level, and (4) novel close-range sensing applications that can support sustainable forestry and REDD+ MRV. We particularly welcome submissions on data fusion.

USE OF A PRECIPITATION-RUNOFF MODEL FOR SIMULATING EFFECTS OF FOREST MANAGEMENT ON

STREAMFLOW IN 11 SMALL DRAINAGE BASINS, OREGON COAST RANGE

LANDSLIDES: THEORY, PRACTICE AND MODELLING

Springer This book, with contributions from international landslide experts, presents in-depth knowledge of theories, practices, and modern numerical techniques for landslide analysis. Landslides are a reoccurring problem across the world and need to be properly studied for their mitigation and control. Due to increased natural and anthropogenic activities, chances of landslide occurrence and associated hazards have increased. The book focuses on landslide dynamics, mechanisms and processes along with hazard mitigation using geo-engineering, structural, geophysical and numerical tools. The book contains a wealth of the latest information on all aspects of theory, practices and modelling tools and techniques involved in prediction, prevention, monitoring, mitigation and risk analysis of landslide hazards. This book will bring the reader up to date on the latest trends in landslide studies and will help planners, engineers, scientists and researchers working on landslide engineering.

SPATIAL MODELING IN GIS AND R FOR EARTH AND ENVIRONMENTAL SCIENCES

Elsevier Spatial Modeling in GIS and R for Earth and Environmental Sciences offers an integrated approach to spatial modelling using both GIS and R. Given the importance of Geographical Information Systems and geostatistics across a variety of applications in Earth and Environmental Science, a clear link between GIS and open source software is essential for the study of spatial objects or phenomena that occur in the real world and facilitate problem-solving. Organized into clear sections on applications and using case studies, the book helps researchers to more quickly understand GIS data and formulate more complex conclusions. The book is the first reference to provide methods and applications for combining the use of R and GIS in modeling spatial processes. It is an essential tool for students and researchers in earth and environmental science, especially those looking to better utilize GIS and spatial modeling. Offers a clear, interdisciplinary guide to serve researchers in a variety of fields, including hazards, land surveying, remote sensing, cartography, geophysics, geology, natural resources, environment and geography Provides an overview, methods and case studies for each application Expresses concepts and methods at an appropriate level for both students and new users to learn by example

APPLICATIONS OF COMPUTATIONAL INTELLIGENCE IN CONCRETE TECHNOLOGY

CRC Press Computational intelligence (CI) in concrete technology has not yet been fully explored worldwide because of some limitations in data sets. This book discusses the selection and separation of data sets, performance evaluation parameters for different types of concrete and related materials, and sensitivity analysis related to various CI techniques. Fundamental concepts and essential analysis for CI techniques such as artificial neural network, fuzzy system, support vector machine, and how they work together for resolving real-life problems, are explained. Features: It is the first book on this fast-growing research field. It discusses the use of various computation intelligence techniques in concrete technology applications. It explains the effectiveness of the methods used and the wide range of available techniques. It integrates a wide range of disciplines from civil engineering, construction technology, and concrete technology to computation intelligence, soft computing, data science, computer science, and so on. It brings together the experiences of contributors from around the world who are doing research in this field and explores the different aspects of their research. The technical content included is beneficial for researchers as well as practicing engineers in the concrete and construction industry.

FUTURE CLIMATE SCENARIOS: REGIONAL CLIMATE MODELLING AND DATA ANALYSIS

Frontiers Media SA

SELECTED WATER RESOURCES ABSTRACTS

MACHINE LEARNING AND DATA MINING IN AEROSPACE TECHNOLOGY

Springer This book explores the main concepts, algorithms, and techniques of Machine Learning and data mining for aerospace technology. Satellites are the 'eagle eyes' that allow us to view massive areas of the Earth simultaneously, and can gather more data, more quickly, than tools on the ground. Consequently, the development of intelligent health monitoring systems for artificial satellites - which can determine satellites' current status and predict their failure based on telemetry data - is one of the most important current issues in aerospace engineering. This book is divided into three parts, the first of which discusses central problems in the health monitoring of artificial satellites, including tensor-based anomaly detection for satellite telemetry data and machine learning in satellite monitoring, as well as the design, implementation, and validation of satellite simulators. The second part addresses telemetry data analytics and mining problems, while the last part focuses on security issues in telemetry data.

NATURAL HAZARDS GIS-BASED SPATIAL MODELING USING DATA MINING TECHNIQUES

Springer This edited volume assesses capabilities of data mining algorithms for spatial modeling of natural hazards in different countries based on a collection of essays written by experts in the field. The book is organized on different hazards including landslides, flood, forest fire, land subsidence, earthquake, and gully erosion. Chapters were peer-reviewed by recognized scholars in the field of natural hazards research. Each chapter provides an overview on the topic, methods applied, and discusses examples used. The concepts and methods are explained at a level that allows undergraduates to understand and other readers learn through examples. This edited volume is shaped and structured

to provide the reader with a comprehensive overview of all covered topics. It serves as a reference for researchers from different fields including land surveying, remote sensing, cartography, GIS, geophysics, geology, natural resources, and geography. It also serves as a guide for researchers, students, organizations, and decision makers active in land use planning and hazard management.

FOREST GROWTH AND TIMBER QUALITY

CROWN MODELS AND SIMULATION METHODS FOR SUSTAINABLE FOREST MANAGEMENT : PROCEEDINGS OF AN INTERNATIONAL CONFERENCE : PORTLAND, OR, USA, AUGUST 7-10, 2007

DIANE Publishing Explores the relationships between forest management activities and timber quality. Sessions were organized to explore models and simulation methodologies that contribute to an understanding of tree development over time and the ways that management and harvesting activities can influence the quality of timber products recovered from those trees. Five keynote addresses, 29 plenary presentations, and 16 poster presentations covered the full breadth of forest growth and timber quality issues related to forest management. These proceedings comprise 19 papers based on presentations and posters, plus 28 abstracts for presentations. Also includes abstracts and slides from the presentations prepared by three keynote speakers. Illustrations.

BIBLIOGRAPHY OF AGRICULTURE

NON-POINT WATER QUALITY MODELING IN WILDLAND MANAGEMENT

A STATE-OF-THE-ART ASSESSMENT

GEO-INFORMATICS IN RESOURCE MANAGEMENT AND SUSTAINABLE ECOSYSTEM

INTERNATIONAL SYMPOSIUM, GRMSE 2013, WUHAN, CHINA, NOVEMBER 8-10, 2013, PROCEEDINGS, PART II

Springer This two volume set (CCIS 398 and 399) constitutes the refereed proceedings of the International Symposium on Geo-Informatics in Resource Management and Sustainable Ecosystem, GRMSE 2013, held in Wuhan, China, in November 2013. The 136 papers presented, in addition to 4 keynote speeches and 5 invited sessions, were carefully reviewed and selected from 522 submissions. The papers are divided into 5 sessions: smart city in resource management and sustainable ecosystem, spatial data acquisition through RS and GIS in resource management and sustainable ecosystem, ecological and environmental data processing and management, advanced geospatial model and analysis for understanding ecological and environmental process, applications of geo-informatics in resource management and sustainable ecosystem.

PREDICTIVE MODELLING FOR ENERGY MANAGEMENT AND POWER SYSTEMS ENGINEERING

Elsevier Predictive Modeling for Energy Management and Power Systems Engineering introduces readers to the cutting-edge use of big data and large computational infrastructures in energy demand estimation and power management systems. The book supports engineers and scientists who seek to become familiar with advanced optimization techniques for power systems designs, optimization techniques and algorithms for consumer power management, and potential applications of machine learning and artificial intelligence in this field. The book provides modeling theory in an easy-to-read format, verified with on-site models and case studies for specific geographic regions and complex consumer markets. Presents advanced optimization techniques to improve existing energy demand system Provides data-analytic models and their practical relevance in proven case studies Explores novel developments in machine-learning and artificial intelligence applied in energy management Provides modeling theory in an easy-to-read format

SELECTED WATER RESOURCES ABSTRACTS

Springer Nature

ADVANCED ENGINEERING AND TECHNOLOGY II

PROCEEDINGS OF THE 2ND ANNUAL CONGRESS ON ADVANCED ENGINEERING AND TECHNOLOGY (CAET 2015), HONG KONG, 4-5 APRIL 2015

CRC Press Advanced Engineering and Technology II collects recent essential ideas and advanced techniques to overcome the current engineering issues in civil engineering, environmental engineering, water science and hydraulic engineering, energy and chemical engineering, and other related fields. The 60 technical papers from the 2nd Annual Congress on Advance

WATER-RESOURCES INVESTIGATIONS REPORT

1983-1994

BROADENING THE USE OF MACHINE LEARNING IN HYDROLOGY

Frontiers Media SA

APPLICATION OF THE CHINA METEOROLOGICAL ASSIMILATION DRIVING DATASETS FOR THE SWAT MODEL (CMADS) IN EAST ASIA

MDPI To promote scientific understanding of surface processes in East Asia, we have published details of the CMADS dataset in the journal, *Water*, and expect that users around the world will learn about CMADS datasets while promoting the development of hydrometeorological disciplines in East Asia. We hope and firmly believe that scientific development in East Asia and our understanding of this typical region will be further advanced.

COMPREHENSIVE FOODOMICS

Elsevier Comprehensive Foodomics offers a definitive collection of over 150 articles that provide researchers with innovative answers to crucial questions relating to food quality, safety and its vital and complex links to our health. Topics covered include transcriptomics, proteomics, metabolomics, genomics, green foodomics, epigenetics and noncoding RNA, food safety, food bioactivity and health, food quality and traceability, data treatment and systems biology. Logically structured into 10 focused sections, each article is authored by world leading scientists who cover the whole breadth of Omics and related technologies, including the latest advances and applications. By bringing all this information together in an easily navigable reference, food scientists and nutritionists in both academia and industry will find it the perfect, modern day compendium for frequent reference. List of sections and Section Editors: Genomics - Olivia McAuliffe, Dept of Food Biosciences, Moorepark, Fermoy, Co. Cork, Ireland Epigenetics & Noncoding RNA - Juan Cui, Department of Computer Science & Engineering, University of Nebraska-Lincoln, Lincoln, NE Transcriptomics - Robert Henry, Queensland Alliance for Agriculture and Food Innovation, The University of Queensland, St Lucia, Australia Proteomics - Jens Brockmeyer, Institute of Biochemistry and Technical Biochemistry, University Stuttgart, Germany Metabolomics - Philippe Schmitt-Kopplin, Research Unit Analytical BioGeoChemistry, Neuherberg, Germany Omics data treatment, System Biology and Foodomics - Carlos Leon Canseco, Visiting Professor, Biomedical Engineering, Universidad Carlos III de Madrid Green Foodomics - Elena Ibanez, Foodomics Lab, CIAL, CSIC, Madrid, Spain Food safety and Foodomics - Djuro Josić, Professor Medicine (Research) Warren Alpert Medical School, Brown University, Providence, RI, USA & Sandra Kraljević Pavelić, University of Rijeka, Department of Biotechnology, Rijeka, Croatia Food Quality, Traceability and Foodomics - Daniel Cozzolino, Centre for Nutrition and Food Sciences, The University of Queensland, Queensland, Australia Food Bioactivity, Health and Foodomics - Miguel Herrero, Department of Bioactivity and Food Analysis, Foodomics Lab, CIAL, CSIC, Madrid, Spain Brings all relevant foodomics information together in one place, offering readers a 'one-stop,' comprehensive resource for access to a wealth of information Includes articles written by academics and practitioners from various fields and regions Provides an ideal resource for students, researchers and professionals who need to find relevant information quickly and easily Includes content from high quality authors from across the globe

INTELLIGENT DATA ANALYTICS FOR DECISION-SUPPORT SYSTEMS IN HAZARD MITIGATION

THEORY AND PRACTICE OF HAZARD MITIGATION

Springer Nature This book highlights cutting-edge applications of machine learning techniques for disaster management by monitoring, analyzing, and forecasting hydro-meteorological variables. Predictive modelling is a consolidated discipline used to forewarn the possibility of natural hazards. In this book, experts from numerical weather forecast, meteorology, hydrology, engineering, agriculture, economics, and disaster policy-making contribute towards an interdisciplinary framework to construct potent models for hazard risk mitigation. The book will help advance the state of knowledge of artificial intelligence in decision systems to aid disaster management and policy-making. This book can be a useful reference for graduate student, academics, practicing scientists and professionals of disaster management, artificial intelligence, and environmental sciences.

SPATIAL INTERPOLATION FOR CLIMATE DATA

THE USE OF GIS IN CLIMATOLOGY AND METEOROLOGY

John Wiley & Sons This title gives an authoritative look at the use of Geographical Information Systems (GIS) in climatology and meteorology. GIS provides a range of strategies, from traditional methods, such as those for hydromet database analysis and management, to new developing methods. As such, this book will provide a useful reference tool in this important aspect of climatology and meteorology study.

MODERN MECHANICS AND APPLICATIONS

SELECT PROCEEDINGS OF ICOMMA 2020

Springer Nature This proceedings book includes a selection of refereed papers presented at the International Conference on Modern Mechanics and Applications (ICOMMA) 2020, which took place in Ho Chi Minh City, Vietnam, on December 2-4, 2020. The contributions highlight recent trends and applications in modern mechanics. Subjects covered include biological systems; damage, fracture, and failure; flow problems; multiscale multi-physics problems; composites and hybrid structures; optimization and inverse problems; lightweight structures; mechatronics; dynamics; numerical methods and intelligent computing; additive manufacturing; natural hazards modeling. The book is intended for academics, including graduate students and experienced researchers interested in recent trends in modern mechanics and application.

PARAMETER ESTIMATION AND UNCERTAINTY QUANTIFICATION IN WATER RESOURCES MODELING

Frontiers Media SA Numerical models of flow and transport processes are heavily employed in the fields of surface, soil, and groundwater hydrology. They are used to interpret field observations, analyze complex and coupled processes, or to support decision making related to large societal issues such as the water-energy nexus or sustainable water management and food production. Parameter estimation and uncertainty quantification are two key features of modern science-based predictions. When applied to water resources, these tasks must cope with many degrees of freedom and large datasets. Both are challenging and require novel theoretical and computational approaches to handle complex models with large number of unknown parameters.

ADVANCED REMOTE SENSING

TERRESTRIAL INFORMATION EXTRACTION AND APPLICATIONS

Academic Press Advanced Remote Sensing is an application-based reference that provides a single source of mathematical concepts necessary for remote sensing data gathering and assimilation. It presents state-of-the-art techniques for estimating land surface variables from a variety of data types, including optical sensors such as RADAR and LIDAR. Scientists in a number of different fields including geography, geology, atmospheric science, environmental science, planetary science and ecology will have access to critically-important data extraction techniques and their virtually unlimited applications. While rigorous enough for the most experienced of scientists, the techniques are well designed and integrated, making the book's content intuitive, clearly presented, and practical in its implementation. Comprehensive overview of various practical methods and algorithms Detailed description of the principles and procedures of the state-of-the-art algorithms Real-world case studies open several chapters More than 500 full-color figures and tables Edited by top remote sensing experts with contributions from authors across the geosciences