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Structural Design Optimization Considering Uncertainties Multiscale Optimization and Material Design Advanced cooperative control and optimization strategies for integrated energy systems Modeling, Simulation and Optimization of Complex Processes Data and Applications Security and Privacy XXXVI Advanced Concepts for Intelligent Vision Systems Intelligent Robotics and Applications Intelligent Computing & Optimization Development and Application of Nonlinear Dissipative Device in Structural Vibration Control Goal Oriented Methodology and Applications in Nuclear Power Plants Hybrid Intelligent Systems Optimization-Based Energy Management for Multi-energy Maritime Grids Practical Methods of Optimization Computational Optimization, Methods and Algorithms Optimal Scheduling of Combined Heat and Power Generation Considering Heating Grid Dynamics Proceedings of the Second International Conference on Structural Stability and Dynamics New and Advanced Materials Engineering Optimization 2014 Least-Squares Finite Element Methods Proceedings of the American Society for Composites 2014-Twenty-ninth Technical Conference on Composite Materials Mechatronics and Control Engineering Marine Design XIII Advances in Digital Cultural Heritage A New Family of CMOS Cascode-Free Amplifiers with High Energy-Efficiency and Improved Gain Advances in Design Automation, 1994: Robust design applications. Decomposition and design optimization. Optimization tools and applications Considering Climate Change in Hydropower Relicensing Proceedings of the International Field Exploration and Development Conference 2023 The SAGE Dictionary of Quantitative Management Research Machine Learning, Optimization, and Data Science Neural Computing for Advanced Applications Bridge Maintenance, Safety, Management, Life-Cycle Sustainability and Innovations Metaheuristics in Water, Geotechnical and Transport Engineering Advances in Civil Structures IV Control, operation and trading strategies of intermittent renewable energy in smart grids Ships and Offshore Structures XIX Search Algorithms for Engineering Optimization Fault-Diagnosis Systems Data-Driven Prediction for Industrial Processes and Their Applications Handbook of Markov Chain Monte Carlo Advances in Hydrologic Forecasts and Water Resources Management

Structural Design Optimization Considering Uncertainties

2008-02-07

uncertainties play a dominant role in the design and optimization of structures and infrastructures in optimum design of structural systems due to variations of the material manufacturing variations variations of the external loads and modelling uncertainty the parameters of a structure a structural system and its environment are not given fixed coefficients but random variables with a certain probability distribution the increasing necessity to solve complex problems in structural optimization structural reliability and probabilistic mechanics requires the development of new ideas innovative methods and numerical tools for providing accurate numerical solutions in affordable computing times this book presents the latest findings on structural optimization considering uncertainties it contains selected contributions dealing with the use of probabilistic methods for the optimal design of different types of structures and various considerations of uncertainties the first part is focused on reliability based design optimization and the second part on robust design optimization comprising twenty one self contained chapters by prominent authors in the field it forms a complete collection of state of the art theoretical advances and applications in the fields of structural optimization structural reliability and probabilistic computational mechanics it is recommended to researchers engineers and students in civil mechanical naval and aerospace engineering and to professionals working on complicated costs effective design problems

Multiscale Optimization and Material Design

2020-03-20

the book presents a set of novel efficient and systematic concurrent multiscale optimization methods by considering the distribution of the material in macro scale and the unit cell configuration design in micro scale simultaneously different from the traditional optimization method that is performed in a single scale the proposed methods could generate a great deal of improvements in structural performance through the multiscale structure material concurrent optimum design the proposed theory and methods are related to statics dynamics thermoelastics and the coupling of different physical fields therefore it provides a comprehensive designing scheme when multiple factors are taken into account for example the designing scheme can have a great significance on enhancing the structural performances under coupled multi physical fields such as load bearing capacity vibration resistance ability and safety under thermal stress and so on several numerical examples are highlighted in this unique volume based on practical engineering applications the examples collectively demonstrate drastically improved designs featuring excellent unit cell configuration and highly regular macroscale material distribution in a variety of industrial applications

Advanced cooperative control and optimization strategies for integrated energy systems

2023-02-24

this proceedings volume covers the broad interdisciplinary spectrum of scientific computing and presents recent advances in theory development of methods and applications in practice

Modeling, Simulation and Optimization of Complex Processes

2008-06-19

this book constitutes the refereed proceedings of the 36th annual ifip wg 11 3 conference on data and applications security and privacy dbsec 2022 held in newark nj usa in july 2022 the 12 full papers and 6 short papers presented were carefully reviewed and selected from 33 submissions the conference covers research in data and applications security and privacy

Data and Applications Security and Privacy XXXVI

2022-07-12

this book constitutes the refereed proceedings of the 17th international conference on advanced concepts for intelligent vision systems acivs 2016 held in lecce italy in october 2016 the 64 revised full papers presented in this volume were carefully selected from 137 submissions they deal with classical low level image processing techniques image and video compression 3d

security and forensics and evaluation methodologies

Advanced Concepts for Intelligent Vision Systems

2016-10-20

the 4 volume set lnai 13455 13458 constitutes the proceedings of the 15th international conference on intelligent robotics and applications icira 2022 which took place in harbin china during august 2022 the 284 papers included in these proceedings were carefully reviewed and selected from 442 submissions they were organized in topical sections as follows robotics mechatronics applications robotic machining medical engineering soft and hybrid robots human robot collaboration machine intelligence and human robot interaction

Intelligent Robotics and Applications

2022-08-03

this book includes the scientific results of the fourth edition of the international conference on intelligent computing and optimization which took place at december 30 31 2021 via zoom the conference objective was to celebrate compassion and wisdom with researchers scholars experts and investigators in intelligent computing and optimization worldwide to share knowledge experience innovation marvelous opportunity for discourse and mutuality by novel research invention and creativity this proceedings encloses the original and innovative scientific fields of optimization and optimal control renewable energy and sustainability artificial intelligence and operational research economics and management smart cities and rural planning meta heuristics and big data analytics cyber security and blockchains iots and industry 4 0 mathematical modelling and simulation health care and medicine

Intelligent Computing & Optimization

2021-12-30

this book is a printed edition of the special issue development and application of nonlinear dissipative device in structural vibration control that was published in applied sciences

Development and Application of Nonlinear Dissipative Device in Structural Vibration Control

2018-08-21

goal oriented methodology and applications in nuclear power plants a modern systems reliability approach presents the latest data and research on the modern system reliability approach by go methodology to improve the quality and reliability of nuclear power plants npp quality and reliability are two key factors which are critical to the economic success of npps hence this book provides a comprehensive and systematic analysis of the latest data and research illustrated through the provision of examples and solutions applications and problems to test comprehension authors xiao jian jian and hui na systematically illustrate reliability modeling analysis optimization allocation and assessment and their applications in npps this book without assuming prior knowledge presents all required information in an accessible and easily applied style it will be particularly valuable to engineering and reliability professionals nuclear engineering graduate students reliability engineering specialists and nuclear energy researchers presents the latest research and data in one resource eliminating the need to consult many diverse sources includes examples and solutions that provide practical applications combines principles applications and examples within npps to provide a very thorough understanding of the technological aspects presented

Goal Oriented Methodology and Applications in Nuclear Power Plants

2019-10-29

this book highlights the recent research on hybrid intelligent systems and their various practical applications it presents 97 selected papers from the 22nd international conference on hybrid intelligent systems his 2022 and 26 papers from the 18th international conference on information assurance and security which was held online from 13 to 15 december 2022 a premier conference in the field of artificial intelligence and machine learning applications his ias 2022 brought together researchers engineers and practitioners whose work involves intelligent systems network security and their applications in industry including

contributions by authors from over 35 countries the book offers a valuable reference guide for all researchers students and practitioners in the fields of computer science and engineering

Hybrid Intelligent Systems

2023-05-24

this open access book discusses the energy management for the multi energy maritime grid which is the local energy network installed in harbors ports ships ferries or vessels the grid consists of generation storage and critical loads it operates either in grid connected or in islanding modes under the constraints of both power system and transportation system with full electrification the future maritime grids such as all electric ships and seaport microgrids will become maritime multi energy system with the involvement of multiple energy i e electrical power fossil fuel and heating cooling power with various practical cases this book provides a cross disciplinary view of the green and sustainable shipping via the energy management of maritime grids in this book the concepts and definitions of the multi energy maritime grids are given after a comprehensive literature survey and then the global and regional energy efficiency policies for the maritime transportation are illustrated after that it presents energy management methods under different scenarios for all electric ships and electrified ports at last the future research roadmap are overviewed the book is intended for graduate students researchers and professionals who are interested in the energy management of maritime transportation

Optimization-Based Energy Management for Multi-energy Maritime Grids

2021-04-21

fully describes optimization methods that are currently most valuable in solving real life problems since optimization has applications in almost every branch of science and technology the text emphasizes their practical aspects in conjunction with the heuristics useful in making them perform more reliably and efficiently to this end it presents comparative numerical studies to give readers a feel for possibile applications and to illustrate the problems in assessing evidence also provides theoretical background which provides insights into how methods are derived this edition offers revised coverage of basic theory and standard techniques with updated discussions of line search methods newton and quasi newton methods and conjugate direction methods as well as a comprehensive treatment of restricted step or trust region methods not commonly found in the literature also includes recent developments in hybrid methods for nonlinear least squares an extended discussion of linear programming with new methods for stable updating of lu factors and a completely new section on network programming chapters include computer subroutines worked examples and study questions

Practical Methods of Optimization

1987

computational optimization is an important paradigm with a wide range of applications in virtually all branches of engineering and industry we almost always try to optimize something whether to minimize the cost and energy consumption or to maximize profits outputs performance and efficiency in many cases this search for optimality is challenging either because of the high computational cost of evaluating objectives and constraints or because of the nonlinearity multimodality discontinuity and uncertainty of the problem functions in the real world systems another complication is that most problems are often np hard that is the solution time for finding the optimum increases exponentially with the problem size the development of efficient algorithms and specialized techniques that address these difficulties is of primary importance for contemporary engineering science and industry this book consists of 12 self contained chapters contributed from worldwide experts who are working in these exciting areas the book strives to review and discuss the latest developments concerning optimization and modelling with a focus on methods and algorithms for computational optimization it also covers well chosen real world applications in science engineering and industry main topics include derivative free optimization multi objective evolutionary algorithms surrogate based methods maximum simulated likelihood estimation support vector machines and metaheuristic algorithms application case studies include aerodynamic shape optimization microwave engineering black box optimization classification economics inventory optimization and structural optimization this graduate level book can serve as an excellent reference for lecturers researchers and students in computational science engineering and industry

Computational Optimization, Methods and Algorithms

2011-06-17

as the share of renewable generation increases in electric grids the traditionally heat driven operation of combined heat and power plants chps reaches its limits thermal storage is required for a flexible operation of chps this work proposes three novel methods to use a heating grid as thermal storage by exploiting its thermal dynamics these include the first approach proving global optimality a novel linear formulation of grid dynamics and an easily real world applicable approach

Optimal Scheduling of Combined Heat and Power Generation Considering Heating Grid Dynamics

2021-02-26

icssd 2002 is the second in the series of international conferences on structural stability and dynamics which provides a forum for the exchange of ideas and experiences in structural stability and dynamics among academics engineers scientists and applied mathematicians held in the modern and vibrant city of singapore icssd 2002 provides a peep at the areas which experts on structural stability and dynamics will be occupied with in the near future from the technical sessions it is evident that well known structural stability and dynamic theories and the computational tools have evolved to an even more advanced stage many delegates from diverse lands have contributed to the icssd 2002 proceedings along with the participation of colleagues from the first asian workshop on meshfree methods and the international workshop on recent advances in experiments and computations on modeling of heterogeneous systems forming a valuable source for future reference the proceedings contain 153 papers including 3 keynote papers and 23 invited papers contributed by authors from all over the world who are working in advanced multi disciplinary areas of research in engineering all these papers are peer reviewed with excellent quality and cover the topics of structural stability structural dynamics computational methods wave propagation nonlinear analysis failure analysis inverse problems non destructive evaluation smart materials and structures vibration control and seismic responses the major features of the book are summarized as follows a total of 153 papers are included with many of them presenting fresh ideas and new areas of research all papers have been peer reviewed and are grouped into sections for easy reference wide coverage of research areas is provided and yet there is good linkage with the central topic of structural stability and dynamics the methods discussed include those that are theoretical analytical computational artificial evolutional and experimental the applications range from civil to mechanical to geo mechanical engineering and even to bioengineering

Proceedings of the Second International Conference on Structural Stability and Dynamics

2003

this work surveys the latest advances in and applications of biomaterials new functional materials hydrogen and fuel cell science engineering and technology environmental catalysis and environment friendly materials new energy materials polymeric materials mechanical behavior and fracture thin films etc it not only offers a broad overview of the latest advances but also provides a valuable summary and references for researchers in this field

New and Advanced Materials

2011-02-21

optimization methodologies are fundamental instruments to tackle the complexity of today s engineering processes engineering optimization 2014 is dedicated to optimization methods in engineering and contains the papers presented at the 4th international conference on engineering optimization engopt2014 lisbon portugal 8 11 september 2014 the book will be of interest to engineers applied mathematicians and computer scientists working on research development and practical applications of optimization methods in engineering

Engineering Optimization 2014

2014-09-26

since their emergence finite element methods have taken a place as one of the most versatile and powerful methodologies for the approximate numerical solution of partial differential equations these methods are used in incompressible fluid flow heat transfer and other problems this book provides researchers and practitioners with a concise guide to the theory and practice of least square finite element methods their strengths and weaknesses established successes and open problems

Least-Squares Finite Element Methods

2009-04-28

new and not previously published u s and international research on composite and nanocomposite materialsfocus on health monitoring diagnosis multifunctionality self healing crashworthiness integrated computational materials engineering icme and moreapplications to aircraft armor bridges ships and civil structures this fully searchable cd rom contains 270 original research papers on all phases of composite materials presented by specialists from universities nasa and private corporations such as boeing the document is divided into the following sections aviation safety and aircraft structures armor and protection multifunctional composites effects of defects out of autoclave processing sustainable processing design and manufacturing stability and postbuckling crashworthiness impact and dynamic response natural biobased and green integrated computational materials engineering icme structural optimization uncertainty quantification nde and shm monitoring progressive damage modeling molecular modeling marine composites simulation tools interlaminar properties civil structures textiles the cd rom displays figures and illustrations in articles in full color along with a title screen and main menu screen each user can link to all papers from the table of contents and author index and also link to papers and front matter by using the global bookmarks which allow navigation of the entire cd rom from every article search features on the cd rom can be by full text including all key words article title author name and session title the cd rom has autorun feature for windows 2000 or higher products and can also be used with macintosh computers the cd includes the program for adobe acrobat reader with search 11 0 one year of technical support is included with your purchase of this product

Proceedings of the American Society for Composites 2014-Twenty-ninth Technical Conference on Composite Materials

2014-09-17

collection of selected peer reviewed papers from the 2013 asian pacific conference on mechatronics and control engineering apcmce 2013 march 26 27 2013 hong kong the 142 papers are grouped as follows chapter 1 mechatronics robotics and control systems chapter 2 computers and communication applied computational technologies chapter 3 researches and design in mechanical engineering chapter 4 energy and power engineering chapter 5 construction chapter 6 materials and chemical engineering chapter 7 geology and environment chapter 8 related topics

Mechatronics and Control Engineering

2013-07-15

marine design xiii collects the contributions to the 13th international marine design conference imdc 2018 espoo finland 10 14 june 2018 the aim of this imdc series of conferences is to promote all aspects of marine design as an engineering discipline the focus is on key design challenges and opportunities in the area of current maritime technologies and markets with special emphasis on challenges in merging ship design and marine applications of experience based industrial design digitalisation as technological enabler for stronger link between efficient design operations and maintenance in future emerging technologies and their impact on future designs cruise ship and icebreaker designs including fleet compositions to meet new market demands to reflect on the conference focus marine design xiii covers the following research topic series state of art ship design principles education design methodology structural design hydrodynamic design cutting edge ship designs and operations ship concept design risk and safety arctic design autonomous ships energy efficiency and propulsions energy efficiency hull form design propulsion equipment design wider marine designs and practices navy ships offshore and wind farms and production marine design xiii contains 2 state of the art reports on design methodologies and cruise ships design and 4 keynote papers on new directions for vessel design practices and tools digital maritime traffic naval ship designs and new tanker design for arctic marine design xiii will be of interest to academics and professionals in maritime technologies and marine design

Marine Design XIII

2018-06-11

this book constitutes the papers of the international workshop on analysis in digital cultural heritage 2017 held in funchal madeira portugal in june 2017 the 16 full and 19 poster papers were carefully reviewed and selected from 93 submissions the main objective of the workshop was to present recent developments and applications of it technologies for cultural heritage preservation namely demonstration of the advantages of new generation of equipment for mapping digital survey and

documentation of heritage assets and sites presentation of technologies for digitalization optimal documentation and information sharing on cultural heritage tools and procedures for social interaction enhancing fostering awareness and participation rising of the knowledge level in domain of it applications for cultural heritage preservation usage of virtual reality for better understanding and learning on cultural heritage

Advances in Digital Cultural Heritage

2018-02-15

this book addresses the need for energy efficient amplifiers providing gain enhancement strategies suitable to run in parallel with lower supply voltages by introducing a new family of single stage cascode free amplifiers with proper design optimization fabrication and experimental evaluation the authors describe several topologies using the umc 130 nm cmos technology node with standard vt devices for proof of concept achieving results far beyond what is achievable with a classic single stage folded cascode amplifier readers will learn about a new family of circuits with a broad range of applications together with the familiarization with a state of the art electronic design automation methodology used to explore the design space of the proposed circuit family

A New Family of CMOS Cascode-Free Amplifiers with High Energy-Efficiency and Improved Gain

2018-08-10

electronic inspection copy available for instructors here a must have reference resource for quantitative management researchers the dictionary contains over 100 entries covering the fundamentals of quantitative methodologies covering both analysis and implementation and examples of use as well as detailed graphics to aid understanding every entry features an introduction to the topic key relevant features a worked example a concise summary and a selection of further reading suggestions cross references to associated concepts within the dictionary

Advances in Design Automation, 1994: Robust design applications. Decomposition and design optimization. Optimization tools and applications

1994

this book constitutes the post conference proceedings of the 4th international conference on machine learning optimization and data science lod 2018 held in volterra italy in september 2018 the 46 full papers presented were carefully reviewed and selected from 126 submissions the papers cover topics in the field of machine learning artificial intelligence reinforcement learning computational optimization and data science presenting a substantial array of ideas technologies algorithms methods and applications

Considering Climate Change in Hydropower Relicensing

2019

this book presents refereed proceedings of the first international conference on neural computing for advanced applications ncaa 2020 held in july 2020 due to the covid 19 pandemic the conference was held online the 36 full papers and 7 short papers were thoroughly reviewed and selected from a total of 113 qualified submissions the papers present resent research on such topics as neural network theory and cognitive sciences machine learning data mining data security privacy protection and data driven applications computational intelligence nature inspired optimizers and their engineering applications cloud edge fog computing the internet of things vehicles iot iov and their system optimization control systems network synchronization system integration and industrial artificial intelligence fuzzy logic neuro fuzzy systems decision making and their applications in management sciences computer vision image processing and their industrial applications and natural language processing machine translation knowledge graphs and their applications

Proceedings of the International Field Exploration and Development

Conference 2023

2011-02-09

bridge maintenance safety management life cycle sustainability and innovations contains lectures and papers presented at the tenth international conference on bridge maintenance safety and management iabmas 2020 held in sapporo hokkaido japan april 11 15 2021 this volume consists of a book of extended abstracts and a usb card containing the full papers of 571 contributions presented at iabmas 2020 including the t y lin lecture 9 keynote lectures and 561 technical papers from 40 countries the contributions presented at iabmas 2020 deal with the state of the art as well as emerging concepts and innovative applications related to the main aspects of maintenance safety management life cycle sustainability and technological innovations of bridges major topics include advanced bridge design construction and maintenance approaches safety reliability and risk evaluation life cycle management life cycle sustainability standardization analytical models bridge management systems service life prediction maintenance and management strategies structural health monitoring non destructive testing and field testing safety resilience robustness and redundancy durability enhancement repair and rehabilitation fatigue and corrosion extreme loads and application of information and computer technology and artificial intelligence for bridges among others this volume provides both an up to date overview of the field of bridge engineering and significant contributions to the process of making more rational decisions on maintenance safety management life cycle sustainability and technological innovations of bridges for the purpose of enhancing the welfare of society the editors hope that these proceedings will serve as a valuable reference to all concerned with bridge structure and infrastructure systems including engineers researchers academics and students from all areas of bridge engineering

The SAGE Dictionary of Quantitative Management Research

2019-02-16

due to an ever decreasing supply in raw materials and stringent constraints on conventional energy sources demand for lightweight efficient and low cost structures has become crucially important in modern engineering design this requires engineers to search for optimal and robust design options to address design problems that are often large in scale and highly nonlinear making finding solutions challenging in the past two decades metaheuristic algorithms have shown promising power efficiency and versatility in solving these difficult optimization problems this book examines the latest developments of metaheuristics and their applications in water geotechnical and transport engineering offering practical case studies as examples to demonstrate real world applications topics cover a range of areas within engineering including reviews of optimization algorithms artificial intelligence cuckoo search genetic programming neural networks multivariate adaptive regression swarm intelligence genetic algorithms ant colony optimization evolutionary multiobjective optimization with diverse applications in engineering such as behavior of materials geotechnical design flood control water distribution and signal networks this book can serve as a supplementary text for design courses and computation in engineering as well as a reference for researchers and engineers in metaheursitics optimization in civil engineering and computational intelligence provides detailed descriptions of all major metaheuristic algorithms with a focus on practical implementation develops new hybrid and advanced methods suitable for civil engineering problems at all levels appropriate for researchers and advanced students to help to develop their work

Machine Learning, Optimization, and Data Science

2020-08-12

collection of selected peer reviewed papers from the 2014 international conference on civil architechture and building materials ceabm 2014 may 24 25 2014 haikou china the 312 papers are grouped as follows chapter 1 structural engineering chapter 2 monitoring and control of structures chapter 3 structural rehabilitation retrofitting and strengthening chapter 4 reliability and durability of structures

Neural Computing for Advanced Applications

2021-04-20

this three volume work presents the proceedings from the 19th international ship and offshore structures congress held in cascais portugal on 7th to 10th september 2015 the international ship and offshore structures congress issc is a forum for the exchange of information by experts undertaking and applying marine structural research the aim of

Bridge Maintenance, Safety, Management, Life-Cycle Sustainability and Innovations

2012-09

heuristic search is an important sub discipline of optimization theory and finds applications in a vast variety of fields including life science and engineering search methods have been useful in solving tough engineering oriented problems that either could not be solved any other way or solutions take a very long time to be computed this book explores a variety of applications for search methods and techniques in different fields of electrical engineering by organizing relevant results and applications this book will serve as a useful resource for students researchers and practitioners to further exploit the potential of search methods in solving hard optimization problems that arise in advanced engineering technologies such as image and video processing issues detection and resource allocation in telecommunication systems security and harmonic reduction in power generation systems as well as redundancy optimization problem and search fuzzy learning mechanisms in industrial applications

Metaheuristics in Water, Geotechnical and Transport Engineering

2014-07-04

with increasing demands for efficiency and product quality plus progress in the integration of automatic control systems in high cost mechatronic and safety critical processes the field of supervision or monitoring fault detection and fault diagnosis plays an important role the book gives an introduction into advanced methods of fault detection and diagnosis fdd after definitions of important terms it considers the reliability availability safety and systems integrity of technical processes then fault detection methods for single signals without models such as limit and trend checking and with harmonic and stochastic models such as fourier analysis correlation and wavelets are treated this is followed by fault detection with process models using the relationships between signals such as parameter estimation parity equations observers and principal component analysis the treated fault diagnosis methods include classification methods from bayes classification to neural networks with decision trees and inference methods from approximate reasoning with fuzzy logic to hybrid fuzzy neuro systems several practical examples for fault detection and diagnosis of dc motor drives a centrifugal pump automotive suspension and tire demonstrate applications

Advances in Civil Structures IV

2023-04-17

this book presents modeling methods and algorithms for data driven prediction and forecasting of practical industrial process by employing machine learning and statistics methodologies related case studies especially on energy systems in the steel industry are also addressed and analyzed the case studies in this volume are entirely rooted in both classical data driven prediction problems and industrial practice requirements detailed figures and tables demonstrate the effectiveness and generalization of the methods addressed and the classifications of the addressed prediction problems come from practical industrial demands rather than from academic categories as such readers will learn the corresponding approaches for resolving their industrial technical problems although the contents of this book and its case studies come from the steel industry these techniques can be also used for other process industries this book appeals to students researchers and professionals within the machine learning and data analysis and mining communities

Control, operation and trading strategies of intermittent renewable energy in smart grids

2015-09-03

since their popularization in the 1990s markov chain monte carlo mcmc methods have revolutionized statistical computing and have had an especially profound impact on the practice of bayesian statistics furthermore mcmc methods have enabled the development and use of intricate models in an astonishing array of disciplines as diverse as fisherie

Ships and Offshore Structures XIX

2013-02-13

the impacts of climate change on water resource management as well as increasingly severe natural disasters over the last

decades have caught global attention reliable and accurate hydrological forecasts are essential for efficient water resource management and the mitigation of natural disasters while the notorious nonlinear hydrological processes make accurate forecasts a very challenging task it requires advanced techniques to build accurate forecast models and reliable management systems one of the newest techniques for modeling complex systems is artificial intelligence ai ai can replicate the way humans learn and has great capability to efficiently extract crucial information from large amounts of data to solve complex problems the fourteen research papers published in this special issue contribute significantly to the uncertainty assessment of operational hydrologic forecasting under changing environmental conditions and the promotion of water resources management by using the latest advanced techniques such as ai techniques the fourteen contributions across four major research areas 1 machine learning approaches to hydrologic forecasting 2 uncertainty analysis and assessment on hydrological modeling under changing environments 3 ai techniques for optimizing multi objective reservoir operation 4 adaption strategies of extreme hydrological events for hazard mitigation the papers published in this issue will not only advance water sciences but also help policymakers to achieve more sustainable and effective water resource management

Search Algorithms for Engineering Optimization

2006-01-16

Fault-Diagnosis Systems

2018-08-20

Data-Driven Prediction for Industrial Processes and Their Applications

2011-05-10

Handbook of Markov Chain Monte Carlo

2021-01-20

Advances in Hydrologic Forecasts and Water Resources Management

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