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Current Trends in Reliability, Availability, Maintainability and Safety
Innovative Computing Technology
Bearing Technology
Recent Developments in Mechatronics and Intelligent Robotics
Advances in Condition Monitoring of Machinery in Non-Stationary Operations
Artificial Intelligence Research and Development
Advances in Condition Monitoring of Machinery in Non-Stationary Operations
Fault Diagnosis and Detection
Advanced Intelligent Computing Theories and Applications
Proceedings of TEPEN 2022
Proceedings
Non-Destructive Testing and Condition Monitoring Techniques in Wind Energy
Fault Detection, Supervision and Safety of Technical Processes 2003 (SAFEPROCESS 2003)
Proceedings of the 5th International Conference on Electrical Engineering and Information Technologies for Rail Transportation (EITRT) 2021
Structural Health Monitoring Using Emerging Signal Processing Approaches with Artificial Intelligence Algorithms
Archives of Acoustics Quarterly
Engineering Asset Management
Recent Progress in the Boolean Domain
Advances in Neural Networks - ISNN 2004
Mechatronics and Intelligent Materials II

BREWER ROLAND

Time-frequency Analysis Academic Press
This book constitutes the proceedings of the First International Conference on Innovative Computing Technology, INCT 2011, held in Tehran, Iran, in December 2011. The 40 revised papers included in this book were carefully reviewed and selected from 121 submissions. The contributions are organized in topical sections on software; Web services and service architecture; computational intelligence; data modeling; multimedia and image segmentation; natural language processing; networks; cluster computing; and discrete systems.
Smart Wireless Acoustic Sensor Network Design for Noise Monitoring in Smart Cities John Wiley & Sons
Structural health monitoring is a powerful tool across civil, mechanical, automotive, and aerospace engineering, allowing the assessment and measurement of physical parameters in real time. Processing changes in the vibration signals of a dynamic system can detect, locate, and quantify any damage existing in the system. This book presents a comprehensive state-of-the-art review of the applications in time, frequency, and time-frequency domains of signal-processing techniques for damage perception, localization, and quantification in various structural systems. Experimental investigations are illustrated, including the development of a set of damage indices based on the signal features extracted through various signal-processing techniques to evaluate sensitivity in damage identification. Chapters summarize the application of the Hilbert–Huang transform based on three decomposition methods such as empirical mode decomposition, ensemble empirical mode decomposition, and complete ensemble empirical mode decomposition with adaptive noise. Also, the chapters assess the performance and sensitivity of different approaches, including multiple signal classification and empirical wavelet transform techniques in damage detection and quantification. Artificial neural networks for automated damage identification are introduced. This book suits students, engineers, and researchers who are investigating structural health monitoring, signal processing, and damage identification of structures.
Cyclostationarity: Theory and Methods III BoD – Books on Demand
This book provides readers with a snapshot of recent methods for non-stationary vibration analysis of machinery. It covers a broad range of advanced techniques in condition monitoring of machinery, such as mathematical models, signal processing and pattern recognition methods and artificial intelligence methods, and their practical applications to the analysis of nonstationarities. Each chapter, accepted after a rigorous peer-review process, reports on a selected, original piece of work presented and discussed at the International Conference on Condition Monitoring of Machinery in Non-Stationary Operations, CMMNO'2016, held on September 12 – 16, 2016, in Gliwice, Poland. The contributions cover advances in both theory and practice in a variety of subfields, such as: smart materials and structures; fluid-structure interaction; structural acoustics as well as computational vibro-acoustics and numerical methods. Further topics include: engines control, noise identification, robust design, flow-induced vibration and many others. By presenting state-of-the-art in predictive maintenance solutions and discussing important industrial issues the book offers a valuable resource to both academics and professionals and is expected to facilitate communication and collaboration between the two groups.
Sensors Fault Diagnosis Trends and Applications Springer
Containing selected papers from the ICRESH-ARMS 2015 conference in Lulea, Sweden, collected by editors with years of experiences in Reliability and maintenance modeling, risk assessment, and asset management, this work maximizes reader insights into the current trends in Reliability, Availability, Maintainability and Safety (RAMS) and Risk Management. Featuring a comprehensive analysis of the significance of the role of RAMS and Risk Management in the decision making process during the various phases of design, operation, maintenance, asset management and productivity in Industrial domains, these proceedings discuss key issues and challenges in the operation, maintenance and risk management of complex engineering systems and will serve as a valuable resource for those in the field.
Vibration-based Condition Monitoring BoD – Books on Demand
This book is a collection of proceedings of the International Conference on Mechatronics and Intelligent Robotics (ICMIR2018), held in Kunming, China during May 19–20, 2018. It consists of 155 papers, which have been categorized into 6 different sections: Intelligent Systems, Robotics, Intelligent Sensors & Actuators, Mechatronics, Computational Vision and Machine Learning, and Soft Computing. The volume covers the latest ideas and innovations both from the industrial and academic worlds, as well as shares the best practices in the fields of mechanical engineering, mechatronics, automatic control, IOT and its applications in industry, electrical engineering, finite element analysis and computational engineering. The volume covers key research outputs, which delivers a wealth of new ideas and food for thought to the readers.
Cyclostationary Processes and Time Series Springer
Fault diagnosis has always been a concern for industry. In general, diagnosis in complex systems requires the acquisition of information from sensors and the processing and extracting of required features for the classification or identification of faults. Therefore, fault diagnosis of sensors is clearly important as faulty information from a sensor may lead to misleading conclusions about the whole system. As engineering systems grow in size and complexity, it becomes more and more important to diagnose faulty behavior before it can lead to total failure. In the light of above issues, this book is dedicated to trends and applications in modern-sensor fault diagnosis.
Communications, Signal Processing, and Systems John Wiley & Sons
This volume gathers the latest advances, innovations and applications in the field of efficiency and performance engineering, as presented by leading international researchers and engineers at the 2022 conference of the Efficiency and Performance Engineering Network (TEPEN), held in Beijing and Baotou, China on August 18-21, 2022. Topics include vibro-

acoustics monitoring, condition-based maintenance, sensing and instrumentation, machine health monitoring, maintenance auditing and organization, non-destructive testing, reliability, asset management, condition monitoring, life-cycle cost optimisation, prognostics and health management, maintenance performance measurement, manufacturing process monitoring, and robot-based monitoring and diagnostics. The contributions, which were selected through a rigorous international peer-review process, share exciting ideas that will spur novel research directions and foster new multidisciplinary collaborations.

Structural Health Monitoring Springer

The Environmental Noise Directive (END) requires that a five-year updating of noise maps is carried out to check and report on the changes that have occurred during the reference period. The updating process is usually achieved using a standardized approach consisting of collecting and processing information through acoustic models to produce the updated noise maps. This procedure is time consuming and costly, and has a significant impact on the financial statement of the authorities responsible for providing the maps. Furthermore, the END requires that easy-to-read noise maps are made available to the public to provide information on noise levels and the subsequent actions to be undertaken by local and central authorities to reduce noise impacts. In order to update the noise maps more easily and in a more effective way, it is convenient to design an integrated system incorporating real-time noise measurement and signal processing to identify and analyze the noise sources present in the mapping area (e.g., road traffic noise, leisure noise, etc.) as well as to automatically generate and present the corresponding noise maps. This wireless acoustic sensor network design requires transversal knowledge, from accurate hardware design for acoustic sensors to network structure design and management of the information with signal processing to identify the origin of the measured noise and graphical user interface application design to present the results to end users. This book is collection in which several views of methodology and technologies required for the development of an efficient wireless acoustic sensor network from the first stages of its design to the tests conducted during deployment, its final performance, and possible subsequent implications for authorities in terms of the definition of policies. Contributions include several LIFE and H2020 projects aimed at the design and implementation of intelligent acoustic sensor networks with a focus on the publication of good practices for the design and deployment of intelligent networks in other locations.

Structural Health Monitoring (SHM) of Civil Structures Lulu.com

This book reflects the latest research trends, methods, and experimental results in the field of electrical and information technologies for rail transportation, which covers abundant state-of-the-art research theories and ideas. As a vital field of research that is highly relevant to current developments in a number of technological domains, the subjects it covered include intelligent computing, information processing, communication technology, automatic control, etc. The objective of the proceedings is to provide a major interdisciplinary forum for researchers, engineers, academicians, and industrial professionals to present the most innovative research and development in the field of rail transportation electrical and information technologies. Engineers and researchers in academia, industry, and government will also explore an insightful view of the solutions that combine ideas from multiple disciplines in this field. The volumes serve as an excellent reference work for researchers and graduate students working on rail transportation and electrical and information technologies.

Condition Monitoring with Vibration Signals MDPI

A three-volume work bringing together papers presented at 'SAFEPROCESS 2003', including four plenary papers on statistical, physical-model-based and logical-model-based approaches to fault detection and diagnosis, as well as 178 regular papers.

Advanced Practical Approaches to Web Mining Techniques and Application Springer Nature

POWER QUALITY MEASUREMENT AND ANALYSIS USING HIGHER-ORDER STATISTICS Help protect your network with this important reference work on cyber security Power quality (PQ) in electrotechnical systems refers to a set of characteristics related to the movement of energy and the delivery of voltage to consumers in the highest standard. As electricity networks change and adapt to new technologies and concepts of energy within a future Smart Grid, it has become clear that standardized methods by which stability and accuracy of electrical service along a network are currently measured are no longer enough to solve inherent issues in service and ensure established requirements are met. Power Quality Measurement and Analysis using Higher-Order Statistics reflects the latest information related to PQ (Power Quality) analysis solutions, particularly that related to the implementation of new quality indices in the domain of higher-order statistics (HOS). The authors—noted experts on the topic—carefully address the detection of PQ problems from two perspectives: the detection of specific events that occur on networks in isolation and continuous monitoring detection. In doing so, the authors demonstrate the use of HOS in current waveform models, enabling the characterization of different power circuit topologies and loads. This book thereby expertly explores the benefits of using HOS, bridging the gap between signal processing and power, and building a better understanding for readers. Power Quality Measurement and Analysis using Higher-Order Statistics readers will also find: A unique methodology for PQ analysis through its combination of HOS and PQ monitoring A proposal for new measurement solutions that can be easily implemented into modern instrumentation The detection of PQ problems from multiple perspectives The use of HOS in current waveform models, which enables the characterization of different power circuit topologies and loads Pitched at a specialized level, Power Quality Measurement and Analysis is an essential reference for researchers, academics, and industry insiders, as well as advanced students in this field.

Vibration-based Condition Monitoring Springer

This book constitutes the proceedings of the International Symposium on Neural N- works (ISNN 2004) held in Dalian, Liaoning, China during August 19–21, 2004. ISNN 2004 received over 800 submissions from authors in ?ve continents (Asia, Europe, North America, South America, and Oceania), and 23 countries and regions (mainland China, Hong Kong, Taiwan, South Korea, Japan, Singapore, India, Iran, Israel, Turkey, H- gary, Poland, Germany, France, Belgium, Spain, UK, USA, Canada, Mexico, Venezuela, Chile, and Australia). Based on reviews, the Program Committee selected 329 hi- quality papers for presentation at ISNN 2004 and publication in the proceedings. The papers are organized into many topical sections under 11 major categories (theore- cal analysis; learning and optimization; support vector machines; blind source sepa- tion, independent component analysis, and principal component analysis; clustering

and classi?cation; robotics and control; telecommunications; signal, image and time series processing; detection, diagnostics, and computer security; biomedical applications; and other applications) covering the whole spectrum of the recent neural network research and development. In addition to the numerous contributed papers, ?ve distinguished scholars were invited to give plenary speeches at ISNN 2004. ISNN 2004 was an inaugural event. It brought together a few hundred researchers, educators, scientists, and practitioners to the beautiful coastal city Dalian in northeastern China.

Condition Monitoring Using Computational Intelligence Methods IGI Global

The rapid increase of web pages has introduced new challenges for many organizations as they attempt to extract information from a massive corpus of web pages. Finding relevant information, eliminating irregular content, and retrieving accurate results has become extremely difficult in today's world where there is a surplus of information available. It is crucial to further understand and study web mining in order to discover the best ways to connect users with appropriate information in a timely manner. Advanced Practical Approaches to Web Mining Techniques and Application aims to illustrate all the concepts of web mining and fosters transformative, multidisciplinary, and novel approaches that introduce the practical method of analyzing various web data sources and extracting knowledge by taking into consideration the unique challenges present in the environment. Covering a range of topics such as data science and security threats, this reference work is ideal for industry professionals, researchers, academicians, practitioners, scholars, instructors, and students.

Condition Monitoring of Machinery in Non-Stationary Operations Cambridge Scholars Publishing

In the twenty-first century, bearings are expected to perform better in the form of various operating conditions, that is from low speed to extremely high speed and from low load to huge load applications. The expectations from the field of bearing technology are great. During the recent years, we have been witnessing the development of a new generation of mechanical systems that are highly miniaturized and very sophisticated, yet extremely robust. Technological progress creates increasingly arduous conditions for rolling mechanisms.

Proceedings of the TEPEN International Workshop on Fault Diagnostic and Prognostic John Wiley & Sons

Featuring traditional coverage as well as new research results that, until now, have been scattered throughout the professional literature, this book brings together—in simple language—the basic ideas and methods that have been developed to study natural and man-made signals whose frequency content changes with time—e.g., speech, sonar and radar, optical images, mechanical vibrations, acoustic signals, biological/biomedical and geophysical signals. Covers time analysis, frequency analysis, and scale analysis; time-bandwidth relations; instantaneous frequency; densities and local quantities; the short time Fourier Transform; time-frequency analysis; the Wigner representation; time-frequency representations; computation methods; the synthesis problem; spatial-spatial/frequency representations; time-scale representations; operators; general joint representations; stochastic signals; and higher order time-frequency distributions. Illustrates each concept with examples and shows how the methods have been extended to other variables, such as scale. For engineers, acoustic scientists, medical scientists and developers, mathematicians, physicists, and mangers working in the fields of acoustics, sonar, radar, image processing, biomedical devices, communication.

Power Quality Measurement and Analysis Using Higher-Order Statistics Springer

Vibration-based Condition Monitoring Stay up to date on the newest developments in machine condition monitoring with this brand-new resource from an industry leader The newly revised Second Edition of Vibration-based Condition Monitoring: Industrial, Automotive and Aerospace Applications delivers a thorough update to the most complete discussion of the field of machine condition monitoring. The distinguished author offers readers new sections on diagnostics of variable speed machines, including wind turbines, as well as new material on the application of cepstrum analysis to the separation of forcing functions, structural model properties, and the simulation of machines and faults. The book provides improved methods of order tracking based on phase demodulation of reference signals and new methods of determining instantaneous machine speed from the vibration response signal. Readers will also benefit from an insightful discussion of new methods of calculating the Teager Kaiser Energy Operator (TKEO) using Hilbert transform methods in the frequency domain. With a renewed emphasis on the newly realized possibility of making virtual instruments, readers of Vibration-based Condition Monitoring will benefit from the wide variety of new and updated topics, like: A comprehensive introduction to machine condition monitoring, including maintenance strategies, condition monitoring methods, and an explanation of the basic problem of condition monitoring An exploration of vibration signals from rotating and reciprocating machines, including signal classification and torsional vibrations An examination of basic and newly developed signal processing techniques, including statistical measures, Fourier analysis, Hilbert transform and demodulation, and digital filtering, pointing out the considerable advantages of non-causal processing, since causal processing gives no benefit for condition monitoring A discussion of fault detection, diagnosis and prognosis in rotating and reciprocating machines, in particular new methods using fault simulation, since "big data" cannot provide sufficient data for late-stage fault development Perfect for machine manufacturers who want to include a machine monitoring service with their product, Vibration-based Condition Monitoring: Industrial, Automotive and Aerospace Applications will also earn a place in university and research institute libraries where there is an interest in machine condition monitoring and diagnostics.

International Journal of Prognostics and Health Management Volume 2 (B&W) IOS Press

The book provides readers with a snapshot of recent research and technological trends in the field of condition monitoring of machinery working under a broad range of operating conditions. Each chapter, accepted after a rigorous peer-review process, reports on an original piece of work presented and discussed at the 4th International Conference on Condition Monitoring of Machinery in Non-stationary Operations, CMMNO 2014, held on December 15-16, 2014, in Lyon, France. The contributions have been grouped into three different sections according to the main subfield (signal processing, data mining or condition monitoring techniques) they are related to. The book includes both theoretical developments as well as a number of industrial case studies, in different areas including, but not limited to: noise and vibration; vibro-acoustic diagnosis; signal processing techniques; diagnostic data analysis; instantaneous speed identification;

monitoring and diagnostic systems; and dynamic and fault modeling. This book not only provides a valuable resource for both academics and professionals in the field of condition monitoring, it also aims at facilitating communication and collaboration between the two groups.

Proceedings of the UNIfied Conference of DAMAS, IncoME and TEPEN Conferences (UNIfied 2023) Springer

Artificial intelligence has become an indispensible part of our lives in recent years, affecting all aspects from business and leisure to transport and health care. This book presents the proceedings of the 23rd edition of the International Conference of the Catalan Association for Artificial Intelligence (CCIA), an annual event that serves as a meeting point for researchers in Artificial Intelligence in the area of the Catalan speaking territories and from around the world. The 2021 edition was held online as a virtual conference from 20 - 22 October 2021 due to the COVID-19 pandemic. The book contains 42 long papers and 9 short papers, carefully reviewed and selected. The papers cover all aspects of artificial intelligence and are divided under six section headings: combinatorial problem solving and logics for artificial intelligence; sentiment analysis and tekst analysis; data science and decision support systems; machine learning; computer vision; and explainability and argumentation. Abstracts of the 2 invited talks delivered at the conference by Prof. Patty Kostkova and Prof. João Marques-Silva are also included. Offering a state of the art overview of the subject from a regional perspective, the book will be of interest to all those working in the field of artificial intelligence.

Current Trends in Reliability, Availability, Maintainability and Safety John Wiley & Sons

Condition monitoring of machines in non-stationary operations (CMMNO) can be seen as the major challenge for research in the field of machinery diagnostics. Condition monitoring of machines in non-stationary operations is the title of the presented book and the title of the Conference held in Hammamet - Tunisia March 26 – 28, 2012. It is the second conference under this title, first took place in Wroclaw - Poland , March 2011. The subject CMMNO comes directly from industry needs and observation of real objects. Most monitored and diagnosed objects used in industry works in non-stationary operations condition. The non-stationary operations come from fulfillment of machinery tasks, for which they are designed for. All machinery used in different kind of mines, transport systems, vehicles like: cars, buses etc, helicopters, ships and battleships and so on work in non-stationary operations. The papers included in the book are shaped by the organizing board of the conference and authors of the papers. The papers are divided into five sections, namely: Condition monitoring of machines in non-stationary operations Modeling of dynamics and fault in systems Signal processing and Pattern recognition Monitoring and diagnostic systems Noise and vibration of machines The presented book gives the back ground to the main objective of the CMMNO 2012 conference that is to bring together scientific community to discuss the major advances in the field of machinery condition monitoring in non-stationary conditions.

Innovative Computing Technology Elsevier

This volume, in conjunction with the two volumes LNCS 4681 and LNAI 4682, constitutes the refereed proceedings of the Third International Conference on Intelligent Computing held in Qingdao, China, in August 2007. The conference sought to establish contemporary intelligent computing techniques as an integral method that underscores trends in advanced computational intelligence and links theoretical research with applications.