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KEY=APPLICATIONS - NEAL BROOKLYN

ANALYSIS OF MIXED DATA

METHODS & APPLICATIONS

CRC Press A comprehensive source on mixed data analysis, Analysis of Mixed Data: Methods & Applications summarizes the fundamental developments in the field. Case studies are used extensively throughout the book to illustrate interesting applications from economics, medicine and health, marketing, and genetics. Carefully edited for smooth readability and

METHODS AND APPLICATIONS OF SINGULAR PERTURBATIONS

BOUNDARY LAYERS AND MULTIPLE TIMESCALE DYNAMICS

Springer Science & Business Media Contains well-chosen examples and exercises A student-friendly introduction that follows a workbook type approach

ADVANCED METHODS, TECHNIQUES, AND APPLICATIONS IN MODELING AND SIMULATION

ASIA SIMULATION CONFERENCE 2011, SEOUL, KOREA, NOVEMBER 2011, PROCEEDINGS

Springer Science & Business Media This book is a compilation of research accomplishments in the fields of modeling, simulation, and their applications, as presented at AsiaSim 2011 (Asia Simulation Conference 2011). The conference, held in Seoul, Korea, November 16–18, was organized by ASIASIM (Federation of Asian Simulation Societies), KSS (Korea Society for Simulation), CASS (Chinese Association for System Simulation), and JSST (Japan Society for Simulation Technology). AsiaSim 2011 provided a forum for scientists, academicians, and professionals from the Asia-Pacific region and other parts of the world to share their latest exciting research findings in modeling and simulation methodologies, techniques, and their tools and applications in military, communication network, industry, and general engineering problems.

DATA MINING METHODS AND APPLICATIONS

CRC Press With today's information explosion, many organizations are now able to access a wealth of valuable data. Unfortunately, most of these organizations find they are ill-equipped to organize this information, let alone put it to work for them. Gain a Competitive Advantage Employ data mining in research and forecasting Build models with data management tools and methodology optimization Gain sophisticated breakdowns and complex analysis through multivariate, evolutionary, and neural net methods Learn how to classify data and maintain quality Transform Data into Business Acumen Data Mining Methods and Applications supplies organizations with the data management tools that will allow them to harness the critical facts and figures needed to improve their bottom line. Drawing from finance, marketing, economics, science, and healthcare, this forward thinking volume: Demonstrates how the transformation of data into business intelligence is an essential aspect of strategic decision-making Emphasizes the use of data mining concepts in real-world scenarios with large database components Focuses on data mining and forecasting methods in conducting market research

NEW METHODS AND APPLICATIONS IN MULTIPLE ATTRIBUTE DECISION MAKING (MADM)

Springer Nature This book presents 27 methods of the Multiple Attribute Decision Making (MADM), which are not discussed in the existing books, nor studied in details, using more applications. Nowadays,

decision making is one of the most important and fundamental tasks of management as an organizational goal achievement that depends on its quality. Decision making includes the correct expression of objectives, determining different and possible solutions, evaluating their feasibility, assessing the consequences, and the results of implementing each solution, and finally, selecting and implementing the solution. Multiple Criteria Decision Making (MCDM) is sum of the decision making techniques. MCDM is divided into the Multiple Objective Decision Making (MODM) for designing the best solution and MADM for selecting the best alternative. Given that the applications of MADM are mostly more than MODM, wide various techniques have been developed for MADM by researchers over the last 60 years, and the current book introduces some of the other new MADM methods.

STATISTICS

METHODS AND APPLICATIONS : A COMPREHENSIVE REFERENCE FOR SCIENCE, INDUSTRY, AND DATA MINING

StatSoft, Inc. This - one of a kind - book offers a comprehensive, almost encyclopedic presentation of statistical methods and analytic approaches used in science, industry, business, and data mining, written from the perspective of the real-life practitioner ("consumer") of these methods.

PROPENSITY SCORE METHODS AND APPLICATIONS

SAGE Publications A concise, introductory text, Propensity Score Methods and Applications describes propensity score methods (PSM) and how they are used to balance the distributions of observed covariates between treatment conditions as a means to reduce selection bias. This new QASS title specifically focuses on the procedures of implementing PSM for research in social sciences, instead of merely demonstrating the effectiveness of the method. Using succinct and approachable language to introduce the basic concepts of PSM, authors Haiyan Bai and M. H. Clark present basic concepts, assumptions, procedures, available software packages, and step-by-step examples for implementing PSM using real-world data, with exercises at the end of each chapter allowing readers to replicate examples on their own.

MULTI-GRID METHODS AND APPLICATIONS

Springer Science & Business Media Multi-grid methods are the most efficient tools for solving elliptic boundary value problems. The reader finds here an elementary introduction to multi-grid algorithms as well as a comprehensive convergence analysis. One section describes special applications (convection-diffusion equations, singular perturbation problems, eigenvalue problems, etc.). The book also contains a complete presentation of the multi-grid method of the second kind, which has important applications to integral equations (e.g. the "panel method") and to numerous other problems. Readers with a practical interest in multi-grid methods will benefit from this book as well as readers with a more theoretical interest.

METHODS AND APPLICATIONS OF SAMPLE SIZE CALCULATION AND RECALCULATION IN CLINICAL TRIALS

Springer Nature This book provides an extensive overview of the principles and methods of sample size calculation and recalculation in clinical trials. Appropriate calculation of the required sample size is crucial for the success of clinical trials. At the same time, a sample size that is too small or too large is problematic due to ethical, scientific, and economic reasons. Therefore, state-of-the art methods are required when planning clinical trials. Part I describes a general framework for deriving sample size calculation procedures. This enables an understanding of the common principles underlying the numerous methods presented in the following chapters. Part II addresses the fixed sample size design, where the required sample size is determined in the planning stage and is not changed afterwards. It covers sample size calculation methods for superiority, non-inferiority, and equivalence trials, as well as comparisons between two and more than two groups. A wide range of further topics is discussed, including sample size calculation for multiple comparisons, safety assessment, and multi-regional trials. There is often some uncertainty about the assumptions to be made when calculating the sample size upfront. Part III presents methods that allow to modify the initially specified sample size based on new information that becomes available during the ongoing trial. Blinded sample size recalculation procedures for internal pilot study designs are considered, as well as methods for sample size reassessment in adaptive designs that use unblinded data from interim analyses. The application is illustrated using numerous clinical trial examples, and software code implementing the methods is provided. The book offers theoretical background and practical advice for biostatisticians and clinicians from the pharmaceutical industry and academia who are involved in clinical trials. Covering basic as well as more advanced and recently developed methods, it is suitable for beginners, experienced applied statisticians, and practitioners. To gain maximum benefit, readers should be familiar with introductory statistics. The content of this book has been successfully used for courses on the topic.

DISTANCE SAMPLING: METHODS AND APPLICATIONS

Springer In this book, the authors cover the basic methods and advances within distance sampling that are most valuable to practitioners and in ecology more broadly. This is the fourth book dedicated to

distance sampling. In the decade since the last book published, there have been a number of new developments. The intervening years have also shown which advances are of most use. This self-contained book covers topics from the previous publications, while also including recent developments in method, software and application. Distance sampling refers to a suite of methods, including line and point transect sampling, in which animal density or abundance is estimated from a sample of distances to detected individuals. The book illustrates these methods through case studies; data sets and computer code are supplied to readers through the book's accompanying website. Some of the case studies use the software Distance, while others use R code. The book is in three parts. The first part addresses basic methods, the design of surveys, distance sampling experiments, field methods and data issues. The second part develops a range of modelling approaches for distance sampling data. The third part describes variations in the basic method; discusses special issues that arise when sampling different taxa (songbirds, seabirds, cetaceans, primates, ungulates, butterflies, and plants); considers advances to deal with failures of the key assumptions; and provides a check-list for those conducting surveys.

SOIL SCIENCE

METHODS AND APPLICATIONS

REGRESSION ANALYSIS

THEORY, METHODS, AND APPLICATIONS

Springer Science & Business Media An up-to-date, rigorous, and lucid treatment of the theory, methods, and applications of regression analysis, and thus ideally suited for those interested in the theory as well as those whose interests lie primarily with applications. It is further enhanced through real-life examples drawn from many disciplines, showing the difficulties typically encountered in the practice of regression analysis. Consequently, this book provides a sound foundation in the theory of this important subject.

ESSENTIALS OF NURSING RESEARCH

METHODS AND APPLICATIONS

Lippincott Williams & Wilkins

PCR PROTOCOLS

A GUIDE TO METHODS AND APPLICATIONS

Academic Press The correct procedures you need for frustration-free PCR methods and applications are contained in this complete, step-by-step, clearly written, inexpensive manual. Avoid contamination--with specific instructions on setting up your lab Avoid cumbersome molecular biological techniques Discover new applications

VARIATIONAL METHODS WITH APPLICATIONS IN SCIENCE AND ENGINEERING

Cambridge University Press This book reflects the strong connection between calculus of variations and the applications for which variational methods form the foundation.

RHEOLOGY

CONCEPTS, METHODS & APPLICATIONS

ChemTec Publishing There are few comprehensive books on the market on the subject of rheology - the complex science dealing with flow and deformation of matter - and these are several years old. At last there is now a book that explains the meaning of a science that many scientists need to use but only a few can fully grasp. It does so by striking the balance between oversimplification and overload of theory in a very compelling and readable manner. The author's systematic presentation enables the authors to include all components of rheology in one volume. The first four chapters of this book discuss various aspects of theoretical rheology and, by examples of many studies, show how particular theory, model, or equation can be used in solving different problems. The main emphasis is on liquids, but solid materials are discussed in one full chapter as well. Methods of measurement and raw data treatment are included in one large chapter which constitutes more than one quarter of the

book. Eight groups of methods are discussed giving many choices for experimentation and guidance on where and how to use them properly. The final chapter shows how to use rheological methods in different groups of products and methods of their manufacture. Usefulness of chemorheological (rheokinetic) measurements is also emphasized. This chapter continues with examples of purposeful applications in practical matters.

GEOMETRIC METHODS AND APPLICATIONS

FOR COMPUTER SCIENCE AND ENGINEERING

Springer Science & Business Media As an introduction to fundamental geometric concepts and tools needed for solving problems of a geometric nature using a computer, this book fills the gap between standard geometry books, which are primarily theoretical, and applied books on computer graphics, computer vision, or robotics that do not cover the underlying geometric concepts in detail. Gallier offers an introduction to affine, projective, computational, and Euclidean geometry, basics of differential geometry and Lie groups, and explores many of the practical applications of geometry. Some of these include computer vision, efficient communication, error correcting codes, cryptography, motion interpolation, and robot kinematics. This comprehensive text covers most of the geometric background needed for conducting research in computer graphics, geometric modeling, computer vision, and robotics and as such will be of interest to a wide audience including computer scientists, mathematicians, and engineers.

HANDBOOK OF RESEARCH METHODS AND APPLICATIONS IN HAPPINESS AND QUALITY OF LIFE

Edward Elgar Publishing Offering a thorough assessment of recent developments in the economic literature on happiness and quality of life, this major research Handbook astutely considers both methods of estimation and policy application. Luigino Bruni and Pier Luigi Porta's refreshing, and constructively critical, approach emphasizes the subject's integral impact on latter-day capitalism. Expert contributors critically present in-depth research on a wide range of topics including: • the history of the idea of quality of life and the impact of globalization • links between happiness and health • comparisons between hedonic and eudaimonic well-being • the relational and emotional side of human life, including subjective indicators of well-being • genetic and environmental contributions to life satisfaction • the impact of culture, fine arts and new media. Accessible and far-reaching, the Handbook of Research Methods and Applications in Happiness and Quality of Life will prove an invaluable resource for students and scholars of welfare and economics as well as practicing psychologists and researchers.

STOCK ASSESSMENT

QUANTITATIVE METHODS AND APPLICATIONS FOR SMALL SCALE FISHERIES

CRC Press Stock Assessment: Quantitative Methods and Applications for Small Scale Fisheries is a book about stock assessment as it is practiced. It focuses on applications for small scale or artisanal fisheries in developing countries, however it is not limited in applicability to tropical waters and should also be considered a resource for students of temperate fishery management problems. It incorporates a careful sample design, various mathematical models as a basis for predicting consequences for stock exploitation, and discusses the impact of exploitation on non-targeted species. This was a unique concept involving a collaborative effort between U.S. and host country scientists to address issues of regional and global concern through innovative research. Unlike other books on stock assessment that show mathematical models, this is the only book of its kind that discusses how an assessment is carried out. It looks at the field as a whole and includes sampling, age determination and acoustics. The book represents the culmination of a nine-year program financed by the United States Agency for International Development to provide new or improved methods of stock assessment for artisanal fisheries.

ENTREPRENEURIAL COMPLEXITY

METHODS AND APPLICATIONS

CRC Press Entrepreneurial Complexity: Methods and Applications deals with theoretical and practical results of Entrepreneurial Sciences and Management (ESM), emphasising qualitative and quantitative methods. ESM has been a modern and exciting research field in which methods from various disciplines have been applied. However, the existing body of literature lacks the proper use of mathematical and formal models; individuals who perform research in this broad interdisciplinary area have been trained differently. In particular, they are not used to solving business-oriented problems mathematically. This book utilises formal techniques in ESM as an advantage for developing theories and models which are falsifiable. Features Discusses methods for defining and measuring complexity

in entrepreneurial sciences Summarises new technologies and innovation-based techniques in entrepreneurial sciences Outlines new formal methods and complexity-models for entrepreneurship To date no book has been dedicated exclusively to use formal models in Entrepreneurial Sciences and Management

OPTIMIZATION METHODS AND APPLICATIONS

IN HONOR OF IVAN V. SERGIENKO'S 80TH BIRTHDAY

Springer Researchers and practitioners in computer science, optimization, operations research and mathematics will find this book useful as it illustrates optimization models and solution methods in discrete, non-differentiable, stochastic, and nonlinear optimization. Contributions from experts in optimization are showcased in this book showcase a broad range of applications and topics detailed in this volume, including pattern and image recognition, computer vision, robust network design, and process control in nonlinear distributed systems. This book is dedicated to the 80th birthday of Ivan V. Sergienko, who is a member of the National Academy of Sciences (NAS) of Ukraine and the director of the V.M. Glushkov Institute of Cybernetics. His work has had a significant impact on several theoretical and applied aspects of discrete optimization, computational mathematics, systems analysis and mathematical modeling.

ARTIFICIAL INTELLIGENCE: METHODS AND APPLICATIONS

8TH HELLENIC CONFERENCE ON AI, SETN 2014, IOANNINA, GREECE, MAY, 15-17, 2014, PROCEEDINGS

Springer This book constitutes the proceedings of the 8th Hellenic Conference on Artificial Intelligence, SETN 2014, held in Ioannina, Greece, in May 2014. There are 34 regular papers out of 60 submissions, in addition 5 submissions were accepted as short papers and 15 papers were accepted for four special sessions. They deal with emergent topics of artificial intelligence and come from the SETN main conference as well as from the following special sessions on action languages: theory and practice; computational intelligence techniques for bio signal Analysis and evaluation; game artificial intelligence; multimodal recommendation systems and their applications to tourism.

ADVANCES IN METHODS AND APPLICATIONS OF QUANTUM SYSTEMS IN CHEMISTRY, PHYSICS, AND BIOLOGY

Springer Nature This book reviews the most significant advances in concepts, methods, and applications of quantum systems in a broad variety of problems in modern chemistry, physics, and biology. In particular, it discusses atomic, molecular, and solid structure, dynamics and spectroscopy, relativistic and correlation effects in quantum chemistry, topics of computational chemistry, physics and biology, as well as applications of theoretical chemistry and physics in advanced molecular and nano-materials and biochemical systems. The book contains peer-reviewed contributions written by leading experts in the fields and based on the presentations given at the Twenty-Fourth International Workshop on Quantum Systems in Chemistry, Physics, and Biology held in Odessa, Ukraine, in August 2019. This book is aimed at advanced graduate students, academics, and researchers, both in university and corporation laboratories, interested in state-of-the-art and novel trends in quantum chemistry, physics, biology, and their applications.

ANALYTICAL CHEMISTRY

METHODS AND APPLICATIONS

CRC Press This collection presents a broad selection of recent research on analytical chemistry, including methods of determination and analysis as applied to plants, pharmaceuticals, foods, proteins, and more. Analytical chemistry is the study of what chemicals are present and in what amount in natural and artificial materials. Because these understandings are fundamental in just about every chemical inquiry, analytical chemistry is used to obtain information, ensure safety, and solve problems in many different chemical areas, and is essential in both theoretical and applied chemistry. Analytical chemistry is driven by new and improved instrumentation.

NOVEL METHODS AND APPLICATIONS FOR MINERAL EXPLORATION

MDPI This special volume offers a snapshot of the latest developments in mineral exploration, in particular, geophysical, geochemical, and computational methods. It reflects the cutting-edge applications of geophysics and geochemistry, as well as novel technologies, such as in artificial intelligence and hyperspectral exploration, methods that have profoundly changed how exploration is conducted. This special volume is a representation of these cutting-edge and pioneering methods to consider and conduct exploration, and should serve both as a valuable compendium of the most innovative exploration methodologies available and as a foreshadowing of the form of future exploration. As such, this volume is of significant importance and would be useful to any exploration geologist and company

BOOTSTRAP METHODS AND THEIR APPLICATION

Cambridge University Press Statistical methods book, with code on supporting website.

HANDBOOK OF RESEARCH METHODS AND APPLICATIONS IN EMPIRICAL FINANCE

Edward Elgar Publishing This impressive Handbook presents the quantitative techniques that are commonly employed in empirical finance research together with real-world, state-of-the-art research examples. Written by international experts in their field, the unique approach describes a question or issue in finance and then demonstrates the methodologies that may be used to solve it. All of the techniques described are used to address real problems rather than being presented for their own sake, and the areas of application have been carefully selected so that a broad range of methodological approaches can be covered. The Handbook is aimed primarily at doctoral researchers and academics who are engaged in conducting original empirical research in finance. In addition, the book will be useful to researchers in the financial markets and also advanced Masters-level students who are writing dissertations.

RESEARCH ANTHOLOGY ON MACHINE LEARNING TECHNIQUES, METHODS, AND APPLICATIONS

IGI Global Machine learning continues to have myriad applications across industries and fields. To ensure this technology is utilized appropriately and to its full potential, organizations must better understand exactly how and where it can be adapted. Further study on the applications of machine learning is required to discover its best practices, challenges, and strategies. The Research Anthology on Machine Learning Techniques, Methods, and Applications provides a thorough consideration of the innovative and emerging research within the area of machine learning. The book discusses how the technology has been used in the past as well as potential ways it can be used in the future to ensure industries continue to develop and grow. Covering a range of topics such as artificial intelligence, deep learning, cybersecurity, and robotics, this major reference work is ideal for computer scientists, managers, researchers, scholars, practitioners, academicians, instructors, and students.

METHODS AND APPLICATIONS OF STATISTICS IN THE LIFE AND HEALTH SCIENCES

John Wiley & Sons "Data collection holds an essential part in dictating the future of health sciences and public health, as the compilation of statistics allows researchers and medical practitioners to monitor trends in health status, identify health problems, and evaluate the impact of health policies and programs. Methods and Applications of Statistics in the Life and Health Sciences serves as a single, one-of-a-kind resource on the wide range of statistical methods, techniques, and applications that are applied in modern life and health sciences in research. Specially designed to present encyclopedic content in an accessible and self-contained format, this book outlines thorough coverage of the underlying theory and standard applications to research in related disciplines such as biology, epidemiology, clinical trials, and public health. Uniquely combining established literature with cutting-edge research, this book contains classical works and more than twenty-five new articles and completely revised contributions from the acclaimed Encyclopedia of Statistical Sciences, Second Edition. The result is a compilation of more than eighty articles that explores classic methodology and new topics."-- Publisher's description.

RECENT ADVANCES IN NUMERICAL METHODS AND APPLICATIONS II

World Scientific This volume contains the proceedings of the 4th International Conference on Numerical Methods and Applications. The major topics covered include: general finite difference, finite volume, finite element and boundary element methods, general numerical linear algebra and parallel computations, numerical methods for nonlinear problems and multiscale methods, multigrid and domain decomposition methods, CFD computations, mathematical modeling in structural mechanics, and environmental and engineering applications. The volume reflects the current research trends in the specified areas of numerical methods and their applications. Contents: Computational Issues in Large Scale Eigenvalue Problems Combustion Modeling in Industrial Furnaces Monte Carlo Methods Multilevel Methods for Incompressible Viscous Flows Approximation of Nonlinear and Functional PDEs Solving Linear Systems with Error Control Regular Numerical Methods for Inverse and Ill-Posed Problems Multifield Problems Parallel and Distributed Numerical Computing with Applications Parameter-Robust Numerical Methods for Singularly Perturbed and Convection-Dominated Problems Finite Difference Methods Finite Element Methods Finite Volume Methods Boundary Element Methods Numerical Linear Algebra Numerical Methods for Nonlinear Problems Numerical Methods for Multiscale Problems Multigrid and Domain Decomposition Computational Fluid Dynamics Mathematical Modelling in Structural Mechanics Environmental Modelling Engineering Applications Readership: Researchers in applied mathematics and computational physics. Keywords: Numerical Methods and Applications; General Finite Difference; General Numerical Linear Algebra; Parallel Computations; Nonlinear Problems and Multiscale Methods

QUANTITATIVE METHODS AND APPLICATIONS IN GIS

CRC Press Quantitative Methods and Applications in GIS integrates GIS, spatial analysis, and quantitative methods to address various issues in socioeconomic studies and public policy. Methods range from

basic regression analysis to advanced topics such as linear programming and system of equations. Applications vary from typical themes in urban and regional

PROGRAMMABLE LOGIC CONTROLLERS: PROGRAMMING METHODS AND APPLICATIONS (WITH CD)

Pearson Education India

STATISTICAL METHODS AND APPLICATIONS IN INSURANCE AND FINANCE

CIMPA SCHOOL, MARRAKECH AND KELAAT M'GOUNA, MOROCCO, APRIL 2013

Springer This book is the outcome of the CIMPA School on Statistical Methods and Applications in Insurance and Finance, held in Marrakech and Kelaat M'gouna (Morocco) in April 2013. It presents two lectures and seven refereed papers from the school, offering the reader important insights into key topics. The first of the lectures, by Frederic Viens, addresses risk management via hedging in discrete and continuous time, while the second, by Boualem Djehiche, reviews statistical estimation methods applied to life and disability insurance. The refereed papers offer diverse perspectives and extensive discussions on subjects including optimal control, financial modeling using stochastic differential equations, pricing and hedging of financial derivatives, and sensitivity analysis. Each chapter of the volume includes a comprehensive bibliography to promote further research.

ELECTROPHORESIS; THEORY, METHODS, AND APPLICATIONS

METHODS AND APPLICATIONS OF LONGITUDINAL DATA ANALYSIS

Elsevier *Methods and Applications of Longitudinal Data Analysis* describes methods for the analysis of longitudinal data in the medical, biological and behavioral sciences. It introduces basic concepts and functions including a variety of regression models, and their practical applications across many areas of research. Statistical procedures featured within the text include: descriptive methods for delineating trends over time linear mixed regression models with both fixed and random effects covariance pattern models on correlated errors generalized estimating equations nonlinear regression models for categorical repeated measurements techniques for analyzing longitudinal data with non-ignorable missing observations Emphasis is given to applications of these methods, using substantial empirical illustrations, designed to help users of statistics better analyze and understand longitudinal data. *Methods and Applications of Longitudinal Data Analysis* equips both graduate students and professionals to confidently apply longitudinal data analysis to their particular discipline. It also provides a valuable reference source for applied statisticians, demographers and other quantitative methodologists. From novice to professional: this book starts with the introduction of basic models and ends with the description of some of the most advanced models in longitudinal data analysis Enables students to select the correct statistical methods to apply to their longitudinal data and avoid the pitfalls associated with incorrect selection Identifies the limitations of classical repeated measures models and describes newly developed techniques, along with real-world examples.

TIME SERIES ANALYSIS

METHODS AND APPLICATIONS

Elsevier The field of statistics not only affects all areas of scientific activity, but also many other matters such as public policy. It is branching rapidly into so many different subjects that a series of handbooks is the only way of comprehensively presenting the various aspects of statistical methodology, applications, and recent developments. The *Handbook of Statistics* is a series of self-contained reference books. Each volume is devoted to a particular topic in statistics, with Volume 30 dealing with time series. The series is addressed to the entire community of statisticians and scientists in various disciplines who use statistical methodology in their work. At the same time, special emphasis is placed on applications-oriented techniques, with the applied statistician in mind as the primary audience. *Comprehensively presents the various aspects of statistical methodology Discusses a wide variety of diverse applications and recent developments Contributors are internationally renowned experts in their respective areas*

MIXED FINITE ELEMENT METHODS AND APPLICATIONS

Springer Science & Business Media Non-standard finite element methods, in particular mixed methods, are central to many applications. In this text the authors, Boffi, Brezzi and Fortin present a general framework, starting with a finite dimensional presentation, then moving on to formulation in Hilbert spaces and finally considering approximations, including stabilized methods and eigenvalue problems. This book also provides an introduction to standard finite element approximations, followed by the construction of elements for the approximation of mixed formulations in $H(\text{div})$ and $H(\text{curl})$. The general

theory is applied to some classical examples: Dirichlet's problem, Stokes' problem, plate problems, elasticity and electromagnetism.

RELIABILITY ENGINEERING

METHODS AND APPLICATIONS

CRC Press Over the last 50 years, the theory and the methods of reliability analysis have developed significantly. Therefore, it is very important to the reliability specialist to be informed of each reliability measure. This book will provide historical developments, current advancements, applications, numerous examples, and many case studies to bring the reader up-to-date with the advancements in this area. It covers reliability engineering in different branches, includes applications to reliability engineering practice, provides numerous examples to illustrate the theoretical results, and offers case studies along with real-world examples. This book is useful to engineering students, research scientist, and practitioners working in the field of reliability.

NATURAL SELECTION

METHODS AND APPLICATIONS

CRC Press This book summarizes the knowledge in the field of methods to identify signatures of natural selection. A number of mathematical models and methods have been designed to identify the fingerprints of natural selection on genes and genomes. Such methods are provided in a simple and direct way so that students of different disciplines can navigate through molecular fitness landscapes using complex methods with a basic knowledge on bioinformatics. A collection of the main methods to detect selection in protein-coding genes and amino acid sequences is given at different levels of complexity, from nucleotides to proteins and molecular networks. The importance of identifying natural selection in genes and genomes through the methods described in this book transcends the bioinformatics and computational biology fields, presenting applications for experimental biologists in a straightforward and understandable way.

ENGINEERING CONDITION MONITORING

PRACTICE, METHODS AND APPLICATIONS

Longman Publishing Group Maintenance can account for an extremely large proportion of the operating costs of machinery. Additionally, the downtime caused by machine breakdowns can severely affect the productivity of factories or the safety of products. Thus, it is becoming increasingly important for companies to consider the monitoring of their equipment 'in situ' in order to reduce the number of breakdowns experienced and to avoid the unnecessary cost and delay caused by repairs. Engineering Condition Monitoring provides an overview of all aspects of this important technique paying special attention to the vibration analysis of rotating machines. The text will be suitable for industrial practitioners and managers along with postgraduate students involved in mechanical and manufacturing engineering. The authors have used their vast collective experience both in industry and as academic teachers to produce a broad, descriptive text, concentrating on practical aspects, that will be invaluable to anyone involved in the operation or sub-contracting of condition monitoring methods.