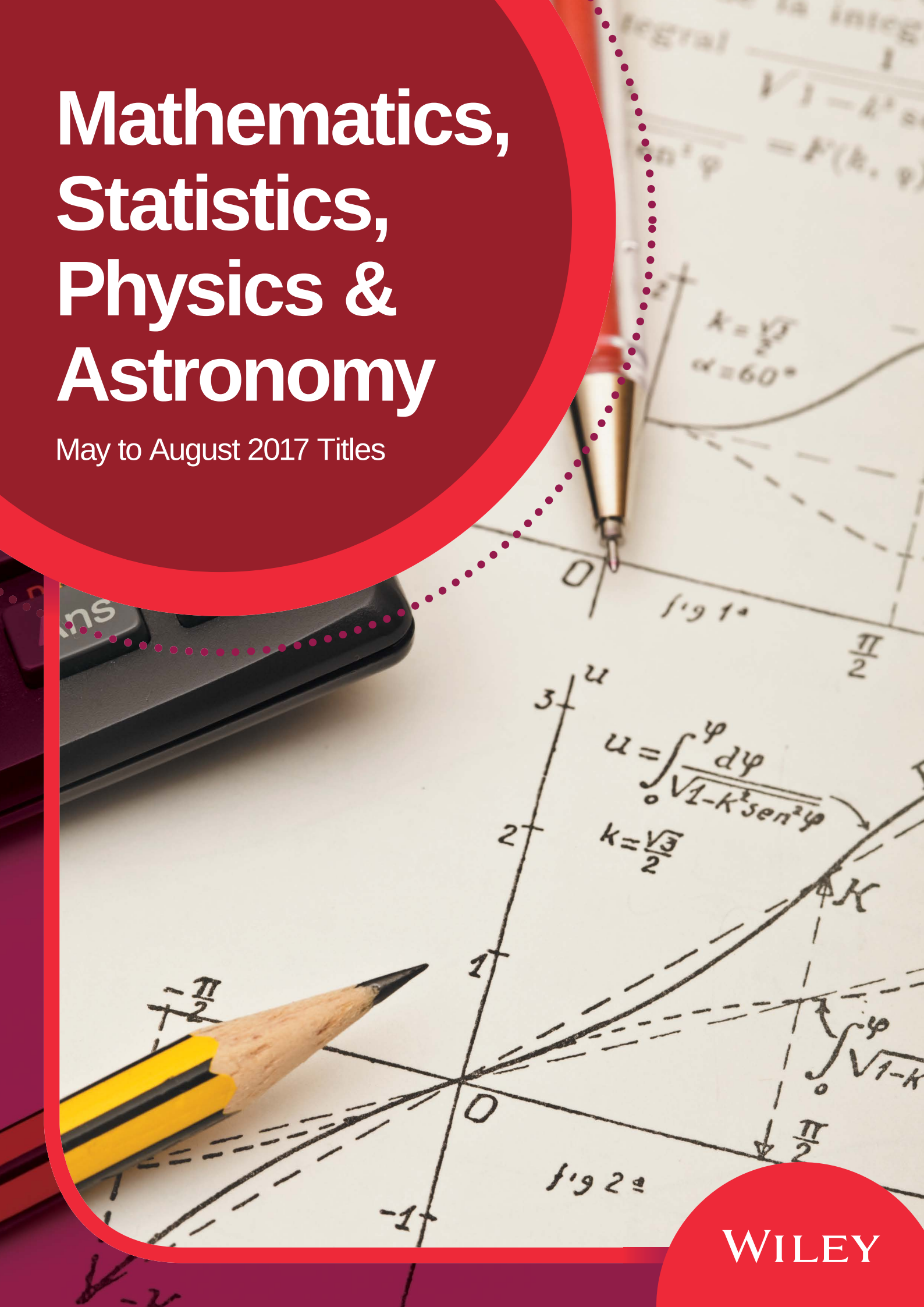


Mathematics, Statistics, Physics & Astronomy

May to August 2017 Titles

The background of the cover features a collage of mathematical and scientific elements. It includes a close-up of a pen writing on a graph, a calculator, and various mathematical formulas and diagrams. A prominent graph shows a curve with labels $k = \frac{\sqrt{3}}{2}$ and $\alpha = 60^\circ$. Another graph shows a curve with the equation $u = \int_0^\varphi \frac{d\varphi}{\sqrt{1-k^2 \sin^2 \varphi}}$ and $k = \frac{\sqrt{3}}{2}$. A yellow pencil is also visible in the lower left corner.

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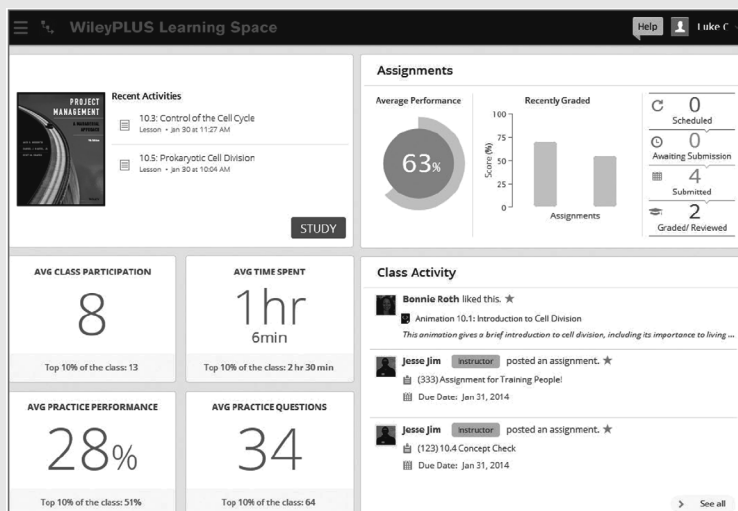
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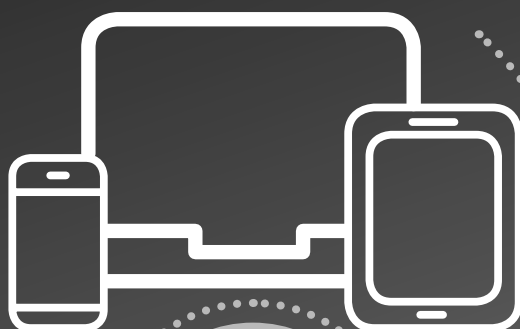
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Applied Mathematics

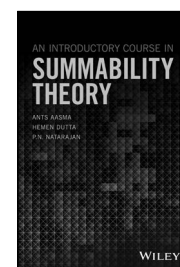
An Introductory Course in Summability Theory

Ants Aasma, Hemen Dutta & P. N. Natarajan

An Introductory Course in Summability Theory is the ideal first text in summability theory for graduate students, especially those having a good grasp of real and complex analysis. It is also a valuable reference for mathematics researchers and for physicists and engineers who work with Fourier series, Fourier transforms, or analytic continuation.

- Discusses results on matrix transforms of several matrix methods
- The only English-language textbook describing the notions of convergence, boundedness, and summability with speed, as well as their applications in approximation theory
- Compares the approximation orders of Fourier expansions in Banach spaces by different matrix methods
- Matrix transforms of summability domains of regular perfect matrix methods are examined
- Each chapter contains several solved examples and end-of-chapter exercises, including hints for solutions

Print ISBN: 978-1-119-39769-4 (Cloth) US\$129.95 • Jun 2017 • 224PP



Differential Equations

Spline Collocation Methods for Partial Differential Equations

With Applications in R

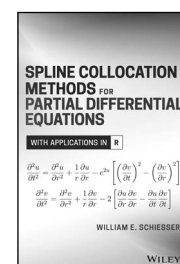
William E. Schiesser

Spline Collocation Methods for Partial Differential Equations combines the collocation analysis of partial differential equations (PDEs) with the method of lines (MOL) in order to simplify the solution process.

Appropriate for scientists, engineers, and applied mathematicians, *Spline Collocation Methods for Partial Differential Equations*:

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- Employs R to illustrate accurate and efficient solutions of the PDE models
- Presents spline collocation as a comprehensive approach to the numerical integration of PDEs and a valuable alternative to other, well established methods
- Discusses how to reproduce and extend the presented numerical solutions
- Identifies the use of selected algorithms, such as the solution of nonlinear equations and banded or sparse matrix processing

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Stochastic Differential Equations

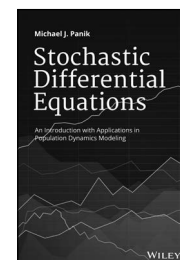
An Introduction with Applications in Population Dynamics Modeling

Michael J. Panik

Designed to be accessible to readers who have had only a few courses in calculus and statistics, this book offers a comprehensive review of the mathematical essentials needed to understand and apply stochastic growth models.

- Provides precise definitions of many important terms and concepts and provides many solved example problems
- Highlights the interpretation of results and does not rely on a theorem-proof approach
- Features comprehensive chapters addressing any background deficiencies readers may have and offers a comprehensive review for those who need a mathematics refresher
- Emphasizes solution techniques for SDEs and their practical application to the development of stochastic population models

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Astronomy & Astrophysics

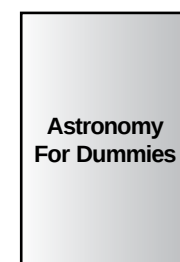
Astronomy For Dummies

4th Edition

Stephen P. Maran

- Includes updated schedules of coming eclipses of the Sun and Moon and a revised planetary appendix
- Covers recent discoveries in space, such as water on the Moon and Pluto's demotion from "planet" status
- Collects new websites, lists of telescope motels, sky-watching guides, and suggestions for beginner's telescopes and suppliers
- Provides free online access to chapter quizzes to help you understand the content

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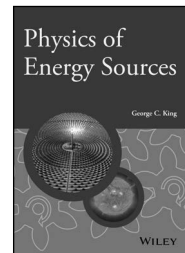
Semiconductor Physics

Physics of Energy Sources

George C. King

A comprehensive textbook for undergraduates, post-graduates and researchers of the underlying physics behind energy sources.

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- Provides in depth analyses into the physical principles and thermodynamics of conventional and unconventional renewable energy sources and techniques, including: nuclear, solar, wind, water and hydroelectric/geothermal power
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- Includes well-informed estimates of future global energy requirements and consumption, including efficiency levels of power production, energy transportation and storage relative to the function of time
- Includes worked examples, sets of problems and worked solutions suitable for undergraduates and postgraduates of physics, chemistry and engineering and professionals in the field

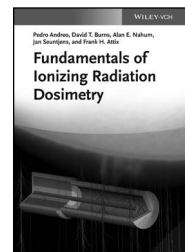


Print ISBN: 978-1-119-96167-3 (Cloth) US\$160.00 / 978-1-119-96168-0 (Paper) US\$60.00 • May 2017 • 424PP

Medical & Health Physics

Fundamentals of Ionizing Radiation Dosimetry

Pedro Andreo, David T. Burns, Alan E. Nahum, Jan Seuntjens & Frank H. Attix (Previously Announced)



- A new, comprehensively updated edition of the acclaimed textbook by F.H. Attix (*Introduction to Radiological Physics and Radiation Dosimetry*) taking into account the substantial developments in dosimetry since its first edition
- This monograph covers charged and uncharged particle interactions at a level consistent with the advanced use of the Monte Carlo method in dosimetry; radiation quantities, macroscopic behaviour and the characterization of radiation fields and beams are covered in detail
- A number of chapters include addenda presenting derivations and discussions that offer new insight into established dosimetric principles and concepts
- The theoretical aspects of dosimetry are given in the comprehensive chapter on cavity theory, followed by the description of primary measurement standards, ionization chambers, chemical dosimeters and solid state detectors
- The topics are presented in a logical, easy-to-follow sequence and the text is supplemented by numerous illustrative diagrams, tables and appendices

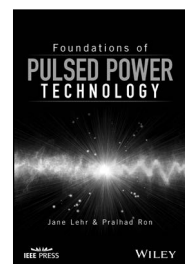


Print ISBN: 978-3-527-40921-1 (Cloth) US\$180.00 • May 2017 • 992PP

Nuclear & High Energy Physics

Foundations of Pulsed Power Technology

Janet Lehr & Pralhad Ron



- This book is written as a reference book for practicing engineers as well as a teaching text. Since the authors are active researchers, the book contains relevant design equations in a single reference
- This book contains thorough explanations of the science of the electrical breakdown process in gaseous, liquid and solid dielectrics
- Every chapter contains Design Examples. A frequent complaint of Professors teaching courses in pulsed power is the lack of examples and homework problems
- This book is extensively illustrated and referenced

Print ISBN: 978-1-118-62839-3 (Cloth) US\$144.95 • Aug 2017 • 500PP



Polymer Physics

Photomechanical Materials, Composites, and Systems

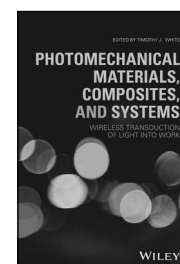
Wireless Transduction of Light into Work

Timothy J. White

An exhaustive review of the history, current state, and future opportunities for harnessing light to accomplish useful work in materials, this book describes the chemistry, physics, and mechanics of light-controlled systems.

- Describes photomechanical materials and mechanisms, along with key applications
- Exceptional collection of leading authors, internationally recognized for their work in this growing area
- Covers the full scope of photomechanical materials: polymers, crystals, ceramics, and nanocomposites
- Deals with an interdisciplinary coupling of mechanics, materials, chemistry, and physics
- Emphasizes application opportunities in creating adaptive surface features, shape memory devices, and actuators; while assessing future prospects for utility in optics and photonics and soft robotics

Print ISBN: 978-1-119-12330-9 (Cloth) US\$194.95 • Jun 2017 • 432PP



Quantum Physics & Field Theory

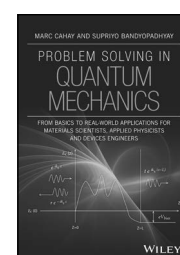
Problem Solving in Quantum Mechanics

From Basics to Real-World Applications for Materials Scientists, Applied Physicists and Devices Engineers (Previously Announced)

Marc Cahay & Supriyo Bandyopadhyay

- This topical and timely textbook is a collection of problems for students, researchers, and practitioners interested in state-of-the-art material and device applications in quantum mechanics
- Most problems are relevant either to a new device or a device concept or to current research topics which could spawn new technology. It deals with the practical aspects of the field, presenting a broad range of essential topics currently at the leading edge of technological innovation
- *Problem Solving in Quantum Mechanics: From Basics to Real-World Applications for Materials Scientists, Applied Physicists and Devices Engineers* is an ideal companion to engineering, condensed matter physics or materials science curricula. It appeals to future and present engineers, physicists, and materials scientists, as well as professionals in these fields needing more in-depth understanding of nanotechnology and nanoscience

Print ISBN: 978-1-118-98875-6 (Paper) US\$80.00 • May 2017 • 416PP



Applied Probability & Statistics

Markov Chains

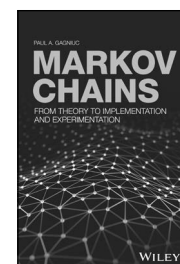
From Theory to Implementation and Experimentation

Paul A. Gagniuc

This unique guide to Markov chains approaches the subject along the four convergent lines of mathematics, implementation, simulation, and experimentation. It introduces readers to the art of stochastic modeling, shows how to design computer implementations, and provides extensive worked examples with case studies.

- Fascinating historical notes shed light on the key ideas that led to the development of the Markov model and its variants
- Various configurations of Markov Chains and their limitations are explored at length
- Numerous examples—from basic to complex—are presented in a comparative manner using a variety of color graphics
- All algorithms presented can be analyzed in either Visual Basic, Java Script, or PHP
- Designed to be useful to professional statisticians as well as readers without extensive knowledge of probability theory

Print ISBN: 978-1-119-38755-8 (Cloth) US\$119.95 • Jun 2017 • 240PP



Applied Probability & Statistics - Models

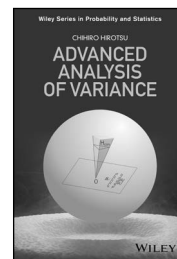
Advanced Analysis of Variance

Chihiro Hirotsu

In this important book, internationally acclaimed statistician, Chihiro Hirotsu, goes beyond evolutionary biologist Ronald Fisher's analysis of variance (ANOVA) model to offer a unified theory and advanced techniques for the statistical analysis of experimental data.

- Written in an expository style which will encourage readers to explore applications for AANOVA techniques in their own research
- Focuses on dealing with real data, providing real-world examples drawn from the fields of statistical quality control, clinical trials, and drug testing
- Describes advanced methods developed and refined by the author over the course of his long career as research engineer and statistician
- Introduces advanced technologies for AANOVA data analysis that build upon the basic ANOVA principles and practices

Print ISBN: 978-1-119-30333-6 (Paper) US\$124.95 • Aug 2017 • 416PP



Statistics for Finance, Business & Economics

Advances in DEA Theory and Applications

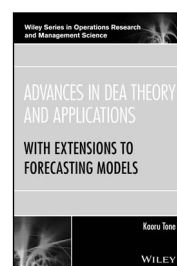
With Extensions to Forecasting Models (Previously Announced)

Kaoru Tone

Advances in DEA Theory and Applications provides a necessary framework for assessing the performance of competing entities including forecasting models and enables the reader to choose the most appropriate methodology and make the right implementation decisions. This book provides an account of the latest advances in DEA theory and applications to the field of forecasting.

- Explores the latest developments in DEA frameworks for the performance evaluation of entities such as public or private organizational branches or departments, economic sectors, technologies and stocks, illustrated with examples/case studies
- Presents a novel area of application for DEA; namely, the performance evaluation of forecasting models
- Promotes the use of DEA to assess the performance of forecasting models in a wide area of applications
- Illustrated with related examples/case studies

Print ISBN: 978-1-118-94562-9 (Cloth) US\$110.00 • Jun 2017 • 600PP



Data Mining Statistics

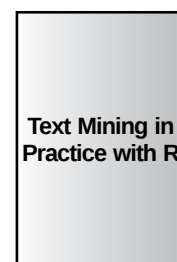
Text Mining in Practice with R

Edward Kwartler

Excavating actionable business insights from data is a complex undertaking, and that complexity is magnified by an order of magnitude when the focus is on documents and other text information. This book takes a practical, hands-on approach to teaching you a reliable, cost-effective approach to mining the vast, untold riches buried within all forms of text using R.

- Identify actionable social media posts to improve customer service
- Use text mining in HR to identify candidate perceptions of an organisation, match job descriptions with resumes, and more
- Extract priceless information from virtually all digital and print sources, including the news media, social media sites, PDFs, and even JPEG and GIF image files
- Make text mining an integral component of marketing in order to identify brand evangelists, impact customer propensity modelling, and much more

Print ISBN: 978-1-119-28201-3 (Cloth) US\$80.00 • Jul 2017 • 312PP



Quality, Productivity & Reliability

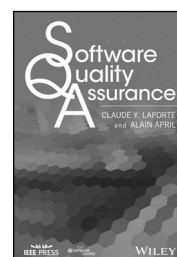
Software Quality Assurance

Claude Y. Laporte & Alain April

This book introduces Software Quality Assurance (SQA) and provides an overview of standards used to implement SQA. It defines ways to assess the effectiveness of how one approaches software quality across key industry sectors such as telecommunications, transport, defense, and aerospace.

- Includes supplementary website with an instructor's guide and solutions
- Applies IEEE software standards as well as the Capability Maturity Model Integration for Development (CMMI)
- Illustrates the application of software quality assurance practices through the use of practical examples, quotes from experts, and tips from the authors

Print ISBN: 978-1-118-50182-5 (Cloth) US\$104.95 • Jun 2017 • 450PP



Mathematics, Statistics, Physics & Astronomy

May to August 2017 New Titles

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Foundations of Pulsed Power Technology	Lehr, Ron	978-1-118-62839-3	2	144.95	Cloth	
Fundamentals of Ionizing Radiation Dosimetry	Andreo, Burns, Nahum, Seuntjens, Attix	978-3-527-40921-1	2	180.00	Cloth	
Markov Chains: From Theory to Implementation and Experimentation	Gagniuc	978-1-119-38755-8	3	119.95	Cloth	
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Software Quality Assurance	Laporte, April	978-1-118-50182-5	4	104.95	Cloth	
Spline Collocation Methods for Partial Differential Equations: With Applications in R	Schiesser	978-1-119-30103-5	1	124.95	Cloth	
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Text Mining in Practice with R	Kwartler	978-1-119-28201-3	4	80.00	Cloth	

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