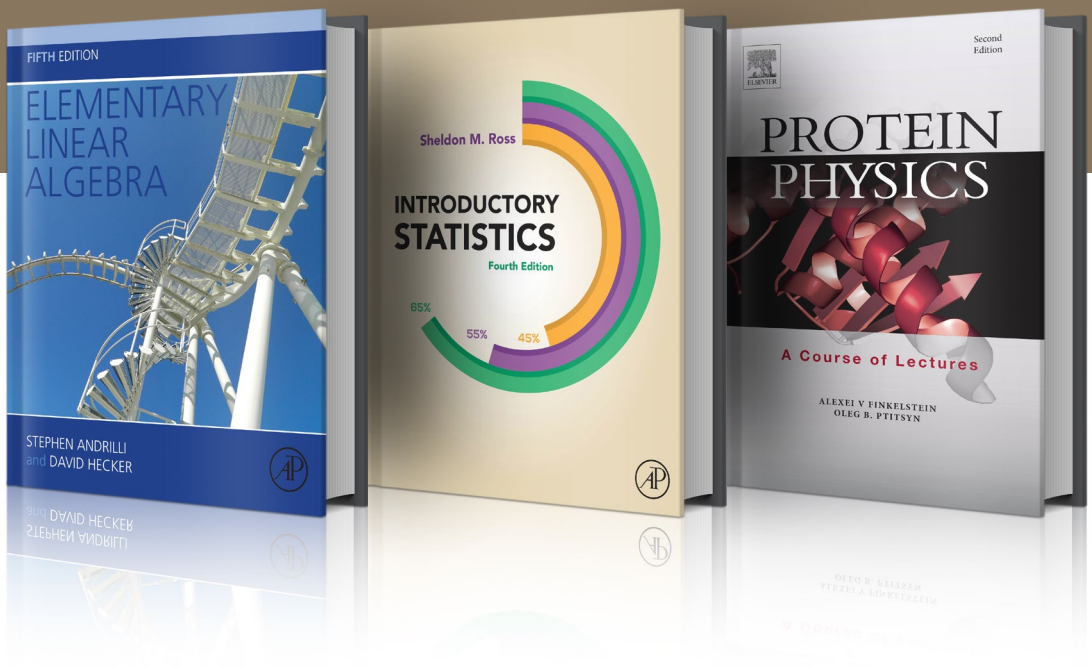
MATHEMATICS & PHYSICS

2017 CATALOG



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The European Research Management Handbook

Jan Andersen Senior Executive Advisor, Science Research and Innovation,University of Copenhagen, Frederiksberg, Denmark
Kristel Toom Vice Head and Researcher, Estonian Academy of Security Sciences, Tallinn, Estonia
Susi Poli Doctoral EdD Candidate at UCL Institute of Education, London, UK
Pamela F. Miller Director, Sponsored Projects Office, University of California at Berkeley, Berkeley, CA, U.S.A.

Provides frameworks, insight, and guidance on research management and research administration

ISBN: 978-0-12-805059-0
PUB DATE: June 2017
FORMAT: Paperback
PAGES: c. 304
TRIM: 6w x 9h

AUDIENCE

Professional research administrators and support staff in universities and research institutions, Researchers and research groups, and university management as well as those interested in exploring a career in research management or research administration

KEY FEATURES

- Offers a deeper understanding of the research management and administrative landscape through single and collective definitions and experiences
- Provides an overview of the research environment and explores the international research arena
- Discusses some of the most complex issues in research management and administration by covering topics such as ethics, innovation, research impact, organizational structures, and processes for the project life cycle

DESCRIPTION

The European Research Management Handbook addresses the myriad of responsibilities related to research management and administration. The book incorporates narratives from those working in the field to provide insight into the profession. The book also offers a unique perspective on the topic by incorporating global perspectives to address the growing interdisciplinary nature of research collaboration.

The European Research Management Handbook outlines practical advice for those in the research management and administration profession at all levels of experience. It is also a useful tool that research institutions and research groups can use to assist in planning and streamlining their research support.

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ReSearch

A Career Guide for Scientists

Teresa M. Evans PhD, Director, the Office of Career Development, Graduate School of Biomedical Sciences, University of Texas Health and Science Center at San Antonio, San Antonio, TX, USA
Natalie Lundsteen PhD, Director of Graduate Career Development, Graduate School of Biomedical Sciences, University of Texas Southwestern Medical Center, Dallas, TX, USA
Nathan L. Vanderford PhD, MBA, Assistant Professor, Department of Toxicology and Cancer Biology; Assistant Dean for Academic Development, College of Medicine; Assistant Director for Research, Markey Cancer Center, University of Kentucky, Lexington, KY, USA

Inside knowledge on how to effectively leverage skill sets to take that next step in your career

ISBN: 978-0-12-804297-7
PUB DATE: June 2017
FORMAT: Paperback
PAGES: c. 288
TRIM: 6w x 9h

AUDIENCE

Graduate, medical, and postdoctoral students across the Sciences as well as faculty, advisors, industry professionals, societies, and other organizations who are involved in career counselling, science education programs, and/or mentorship programs. Graduates and professionals in other STEM areas

KEY FEATURES

- Fills the knowledge gap in career planning practices for students and early career researchers in the STEM fields, particularly those in the sciences
- Provides global perspectives on seeking career opportunities outside of the United States
- Includes strategies for how to market your transferable skill sets, network, and maximize informational interviews

DESCRIPTION

ReSearch is a career planning guide and practical tool for graduate students and postdocs in the pursuit of any career. This book provides step-by-step processes for the assessment of career goals and the actions that can be taken in order to achieve them. *ReSearch* includes chapters on the basics of career planning, determining unique selling points, and navigating work-life concerns. This book also includes narratives from a number of perspectives to showcase the variety of career options available.

ReSearch is written by experts with inside knowledge of how to effectively leverage skills in order to take that next step in your career, whether you are a recent graduate or are interested in transitioning into something new. This book is also a valuable resource for advisors and careers counselors who mentor students and postdocs about their career plans.

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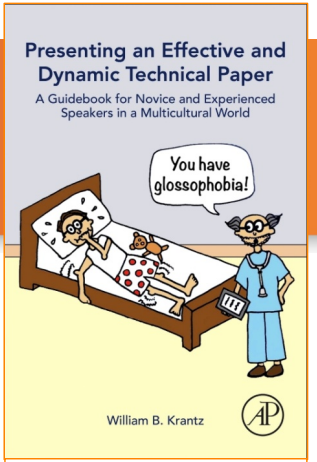

Presenting an Effective and Dynamic Technical Paper

A Guidebook for Novice and Experienced Speakers in a Multicultural World

William B. Krantz President's Teaching Scholar and Professor Emeritus, University of Colorado, Boulder, CO, USA; Rieveschl Ohio Eminent Scholar and Professor Emeritus, University of Cincinnati, Cincinnati,OH, USA

A practical, compact guidebook covering the 'nuts and bolts' of effective public speaking from a cross-cultural perspective

ISBN: 978-0-12-805418-5

PUB DATE: November 2016

FORMAT: Paperback

PAGES: c. 96

TRIM: 6w x 9h

AUDIENCE

Students and researchers across the sciences interested in improving their oral communication skills; in particular non-native English speakers

KEY FEATURES

- Discusses best practices in putting together an effective talk
- Focuses on leveraging the speaker's existing skillsets to develop the delivery style that works best for that individual
- Features one-page quick reference guides for giving both formal oral and informal poster presentations
- Addresses cross-cultural communication, as well as particular concerns for non-native English speakers
- Includes a companion site with tools and video examples of formal and informal presentations for further self-guidance

DESCRIPTION

Presenting an Effective and Dynamic Technical Paper: A Guidebook for Novice and Experienced Speakers in a Multicultural World is intended for inexperienced speakers as well as those aspiring to improve their communication skills in making either formal or informal presentations on a technical subject.

The book focuses on how to make presentations to a cross-cultural audience, including such tactics as how to list the names of the co-authors on your presentation, how to handle eye contact and use humor, both of which can differ across the global spectrum of cultures. The cross-cultural focus of this book relates not only to the audience, but also to the speaker. This book also includes helpful tips for non-native English speakers.

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Creating a Culture of Accessibility in the Sciences

Mahadeo A. Sukhai Research Fellow and Team Leader, University Health Network, Princess Margaret Hospital, Ontario Cancer Institute, Toronto, ON, Canada
Chelsea E. Mohler Research Consultant, National Educational Association of Disabled Students, Ottawa, ON, Canada

As a comprehensive guide, this book provides insights and advice on integrating students with disabilities into the STEM fields, with each chapter featuring research and best practices that are interwoven with experiential narratives

ISBN: 978-0-12-804037-9
PUB DATE: December 2016
FORMAT: Paperback
PAGES: c. 316
TRIM: 6w x 9h

AUDIENCE

University faculty, academic administrators, disability office staff, students with disabilities, and industry professionals in STEM and related disciplines. Additional markets include related academic and professional organizations as well as those involved in professional development training and workshops

KEY FEATURES

- Offers a global perspective on making research or work spaces accessible for students with disabilities in the STEM fields
- Discusses best practices on accommodating and supporting students and demonstrates how these practices can be translated across disciplines
- Enhances faculty knowledge of inclusive teaching practices, adaptive equipment, accessibility features, and accommodations in science laboratories, which would enable the safe participation of students with disabilities
- Provides advice for students with disabilities on disclosure and mentoring

DESCRIPTION

Creating a Culture of Accessibility in the Sciences provides insights and advice on integrating students with disabilities into the STEM fields. Each chapter features research and best practices that are interwoven with experiential narratives.

The book is reflective of the diversity of STEM disciplines (life and physical sciences, engineering, and mathematics), and is also reflective of cross-disability perspectives (physical, sensory, learning, mental health, chronic medical and developmental disabilities).

It is a useful resource for STEM faculty and university administrators working with students with disabilities, as well as STEM industry professionals interested in accommodating employees with disabilities.

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Technical Career Survival Handbook

100 Things You Need To Know

Peter Burke P.E, Consulting Engineer, Self-Employed

This practical guide provides the information needed to survive a technical career, enabling prospective candidates and those currently in technical careers to explore all technical education possibilities, industries, disciplines, and specialties

KEY FEATURES

- Offers insights on how to pursue and navigate a technical career
- Discusses job searches, interviews, offers, and counteroffers
- Includes day-to-day, in the trenches, job situations that may arise and best practices on how to address them

DESCRIPTION

Technical Career Survival Handbook: 100 Things You Need To Know provides the information needed to survive a technical career, enabling prospective technical career candidates and those currently in technical careers to explore all technical education possibilities, industries, disciplines, and specialties.

This handbook better equips the reader to deal with the tough situations and decisions they have to make throughout their career. Topics include preparing for the workforce, employment challenges, and dealing with on the job situations. This book is a practical guidebook for scientists, engineers, and technicians who apply the principles of science and mathematics to develop practical solutions to technical problems.

ISBN: 978-0-12-809372-6

PUB DATE: November 2016

FORMAT: Paperback

PAGES: c. 268

TRIM: 6w x 9h

AUDIENCE

Scientists, engineers, and technicians who apply the principles of science and mathematics to develop practical solutions to technical problems.

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Leadership Lessons for Health Care Providers

Frank James Lexa Chair, ACR Commission on Practice Leadership and Chairman of the Board, Radiology Leadership Institute Project Faculty, Spain; East Asia Regional Manager, the Global Consulting Practicum & Adjunct Professor of Marketing, The Wharton School, Philadelphia, PA, USA

This thought-provoking book provides a solid introduction to the nature of medical leadership, addressing common situations that physicians and allied health professionals encounter and providing tactics for handling common leadership conundrums and increasing leadership abilities

ISBN: 978-0-12-801866-8

PUB DATE: September 2016

FORMAT: Paperback

PAGES: c. 214

TRIM: 6w x 9h

AUDIENCE

Physicians and allied health professionals.Additional markets include related graduate and postgraduate programs, academic and professional organizations as well as those involved in professional development training and workshops

KEY FEATURES

- Discusses and offers practical advice on a number of leadership development topics including levels of leadership, different styles and techniques, dealing with conflict, making hard decisions, and setting priorities
- Includes valuable insight from leaders and specialists in the health care field
- Directs readers to additional leadership resources as next steps

DESCRIPTION

The rapid changes in health care including novel technologies as well as the changing economic, political, and social landscapes are all forcing physicians as well as most types of health care practitioners to re-think their role in leadership. This is particularly true in the US in recent years, but the same issues are widely prevalent affecting health care workers around the globe. Developing capable medical leaders who can navigate these challenges will be essential.

Physicians and other health care practitioners usually receive little or no leadership training in the course of their education. At the next steps in their training: internship, residency and fellowship, gaining clinical acumen takes precedence over developing other skills that are at the core of leadership training. *Leadership Lessons for Health Care Providers* will allow all types of health professionals to gain a better understanding of what leadership is, how to develop their skills while still early in their careers, how to understand and handle common leadership conundrums and chart a path towards increasing their leadership capabilities as they reach mid-career and beyond. This book will provide a great start for those who are interested in learning more about leadership and includes recommendations for next steps at all stages in leadership work.

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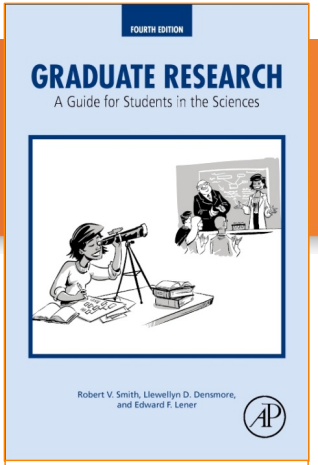

Graduate Research, 4e

A Guide for Students in the Sciences

Robert V. Smith Collaborative Brain Trust University Consulting (CBT UC), Sacramento, CA, USA
Llewellyn D. Densmore Department of Biological Sciences, Texas Tech University, Lubbock, TX, USA
Edward F. Lener University Libraries, Virginia Tech, Blacksburg, VA, USA

This newly revised go-to resource is for graduate researchers at all stages of study and covers a range of topics including writing and preparation of research proposals, developing and refining teaching skills, and ethics and compliance areas such as research involving human subjects and animals

ISBN: 978-0-12-803749-2

PREVIOUS EDITION ISBN: 9780295977058

PUB DATE: February 2016

FORMAT: Paperback

PAGES: c. 288

TRIM: 6w x 9h

AUDIENCE

Graduate student, graduate advisors, and mentors across the Sciences

KEY FEATURES

- Discusses a broad range of topics including time management, library and literature work, and grant support
- Includes a new chapter on career planning and development with advice on careers in academia, government, and the private sector
- Contains chapters that promote the development of a varied set of communication skills
- Greatly expanded treatment of graduate study and research in international settings

DESCRIPTION

Graduate Research is an all-in-one resource for prospective and matriculated graduate students in the sciences. The newly revised edition includes updates to every chapter. *Graduate Research* covers a range of topics including writing and preparation of research proposals, developing and refining teaching skills, and ethics and compliance areas such as research involving human subjects and animals.

Graduate Research helps readers navigate the multidimensional and interdisciplinary world of scientific research and it is an invaluable resource for graduate researchers as well as those in advising or mentoring roles.

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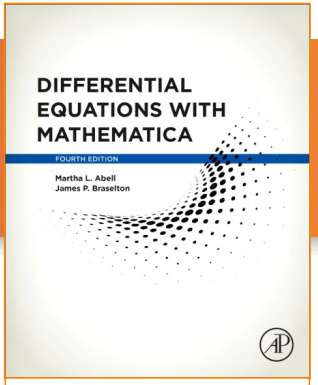


Differential Equations with Mathematica, 4e

Martha L. Abell Georgia Southern University, Statesboro, USA
James P. Braselton Georgia Southern University, Statesboro, USA

Extensive revision of this mammoth reference that updates all major classes of differential equations to the much-enhanced Mathematica 10.0 standard

ISBN: 978-0-12-804776-7
PREVIOUS EDITION ISBN: 9780471773160
PUB DATE: September 2016
FORMAT: Paperback
PAGES: c. 870
TRIM: 7.5w x 9.25h

AUDIENCE

All users of Mathematica who encounter differential equations in their research, in particular beginning users such as students, instructors, engineers, and professionals using Mathematica to solve and visualize solutions to differential equations

KEY FEATURES

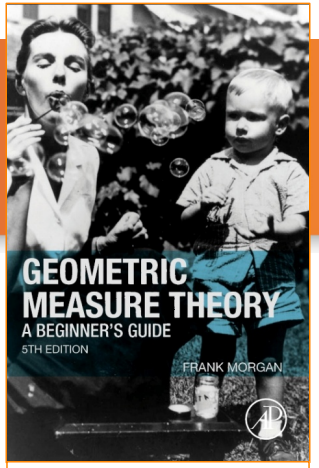
- Demonstrates how to take advantage of the advanced features of Mathematica 10
- Introduces the fundamental theory of ordinary and partial differential equations using Mathematica to solve typical problems of interest to students, instructors, scientists, and practitioners in many fields
- Showcases practical applications and case studies drawn from biology, physics, and engineering

DESCRIPTION

Differential Equations with Mathematica, Fourth Edition is a supplementing reference which uses the fundamental concepts of the popular platform to solve (analytically, numerically, and/or graphically) differential equations of interest to students, instructors, and scientists.

Mathematica's diversity makes it particularly well suited to performing calculations encountered when solving many ordinary and partial differential equations. In some cases, Mathematica's built-in functions can immediately solve a differential equation by providing an explicit, implicit, or numerical solution. In other cases, mathematica can be used to perform the calculations encountered when solving a differential equation.

Because one goal of elementary differential equations courses is to introduce students to basic methods and algorithms so that they gain proficiency in them, nearly every topic covered this book introduces basic commands, also including typical examples of their application. A study of differential equations relies on concepts from calculus and linear algebra, so this text also includes discussions of relevant commands useful in those areas. In many cases, seeing a solution graphically is most meaningful, so the book relies heavily on Mathematica's outstanding graphics capabilities.



Geometric Measure Theory, 5e

A Beginner's Guide

Frank Morgan Williams College, Williamstown, MA, USA

As a beautifully intuitive and fully illustrated introduction to the subject for newcomers, this book on geometric measure theory is ideal as the necessary 'big picture' primer to more advanced math.

KEY FEATURES

- Focuses on core geometry rather than proofs, paving the way to fast and efficient insight into an extremely complex topic in geometric structures
- Enables further study of more advanced topics and texts
- Demonstrates in the simplest possible way how to relate concepts of geometric analysis by way of algebraic or topological techniques
- Contains full topical coverage of The Log-Convex Density Conjecture
- Comprehensively updated throughout

DESCRIPTION

Geometric Measure Theory: A Beginner's Guide, Fifth Edition provides the framework readers need to understand the structure of a crystal, a soap bubble cluster, or a universe.

The book is essential to any student who wants to learn geometric measure theory, and will appeal to researchers and mathematicians working in the field. Brevity, clarity, and scope make this classic book an excellent introduction to more complex ideas from geometric measure theory and the calculus of variations for beginning graduate students and researchers.

Morgan emphasizes geometry over proofs and technicalities, providing a fast and efficient insight into many aspects of the subject, with new coverage to this edition including topical coverage of the Log Convex Density Conjecture, a major new theorem at the center of an area of mathematics that has exploded since its appearance in Perelman's proof of the Poincaré conjecture, and new topical coverage of manifolds taking into account all recent research advances in theory and applications.

ISBN: 978-0-12-804489-6

PREVIOUS EDITION ISBN: 978-0-12-374444-9

PUB DATE: April 2016

FORMAT: Hardback

PAGES: c. 264

TRIM: 6w x 9h

AUDIENCE

Graduate students and above with analysis backgrounds, researchers in differential geometry and geometric analysis.

MATHEMATICS & STATISTICS

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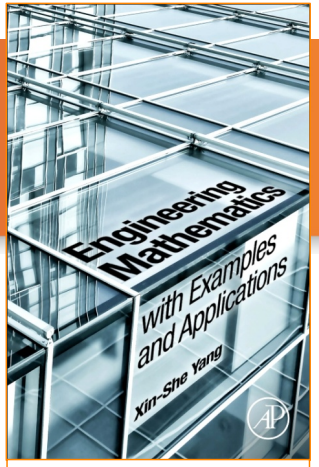


Engineering Mathematics with Examples and Applications

Xin-She Yang School of Science and Technology, Middlesex University, UK

A compact and highly accessible introduction to many of the most pertinent areas of applied mathematics relevant to the engineering profession

ISBN: 978-0-12-809730-4

PUB DATE: April 2017

FORMAT: Paperback

PAGES: c. 400

TRIM: 8.5w x 10.875h

AUDIENCE

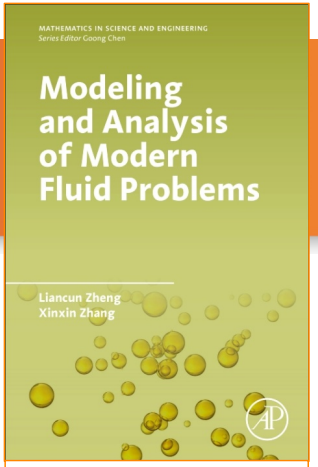
Undergraduates and graduates in all engineering disciplines (mech eng, electrical engineering, civil engineering, geotechnical, water and transport engineering), but also related applied sciences, computer science and management sciences researchers who require an understanding of key mathematical modeling techniques but are not themselves mathematicians

KEY FEATURES

- By using an informal, theorem-free approach, all fundamental topics have been presented to the right level so that readers in engineering can learn without worry too much about the rigorous proofs
- Readers will gain more insight by following step-by-step worked examples (of which 100+ feature in the work) and thus become more confident in understanding and problem-solving
- Emphasis on numerical methods such as root-finding algorithms, numerical integration and numerical methods of differential equations develops analytical mathematical skills
- Balances theory and practice, so that readers can learn the fundamentals of theory, but also conduct practical problem-solving in various context with applications

DESCRIPTION

Engineering Mathematics with Examples and Applications provides a compact and concise primer in the field, starting with the foundations and gradually developing to the advanced level of mathematics that is all necessary for all engineering disciplines. Therefore, this book aims for undergraduates to rapidly develop all the fundamental knowledge of engineering mathematics. It can also be used by graduates to review and refresh their mathematical skills. Step-by-step worked examples will help the students to gain more insight and build sufficient confidence in engineering mathematics and problem-solving. The main approach and style of this book is informal, theorem-free and practical. By using an informal and theorem-free approach, all fundamental mathematics topics required for engineering are covered, and readers can gain such basic knowledge of all important topics without worrying about rigorous (often boring) proofs. Some rigorous proof and derivatives will be presented in an informal way by direct, straightforward mathematical operations and calculations, and the students will gain the same level of fundamental knowledge without any tedious steps. In addition, the practical approach provides over 100 worked examples in this book so that students can see how each step of the mathematical problems can be derivative without any gap or jump in steps. Thus, readers can build their understanding and mathematical confidence gradually and in a step-by-step manner.



Modeling and Analysis of Modern Fluid Problems

Liancun Zheng University of Science and Technology, Beijing, China
Xinxin Zhang University of Science and Technology, Beijing, China

This work combines abstract and applied modern methods for solving nonlinear applied partial differential equations in modern multi-dimensional fluid and heat transfer problems

A Volume in the Mathematics in Science and Engineering Series.

KEY FEATURES

- Systematically describes powerful approximation methods to solve nonlinear equations in fluid problems
- Includes novel developments in fractional order differential equations with fractal theory applied to fluids
- Features new methods including Homotypy Approximation, embedded-parameter perturbation, and 3D models and analysis

DESCRIPTION

Modeling and Analysis of Modern Fluids helps researchers solve physical problems observed in fluid dynamics and related fields such as heat and mass transfer, boundary layer phenomena, and numerical heat transfer. These problems are characterized by nonlinearity and large system dimensionality, and 'exact' solutions are impossible to provide using the conventional mixture of theoretical and analytical analysis with purely numerical methods. To solve these complex problems, this work provides a toolkit of established and novel methods drawn from the literature across nonlinear approximation theory. It covers Padé approximation theory, embedded-parameters perturbation, Adomian decomposition, homotopy analysis, modified differential transformation, fractal theory, fractional calculus, fractional differential equations, as well as classical numerical techniques for solving nonlinear partial differential equations. 3D modeling and analysis are also covered in depth.

ISBN: 978-0-12-811753-8
PUB DATE: June 2017
FORMAT: Paperback
PAGES: c. 460
TRIM: 6w x 9h

AUDIENCE

Graduate students and 1st year PhDs studying applied mathematics, mathematical aspects of fluid dynamics, and thermal science. The work will also appeal to a smaller number of mathematical-inclined engineers working in fluid dynamics

MATHEMATICS & STATISTICS

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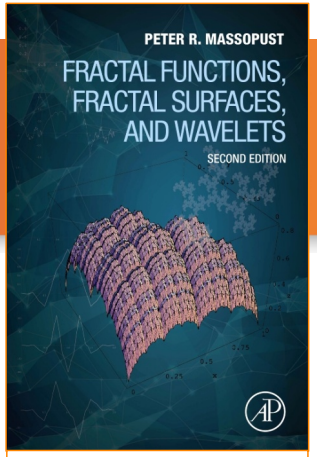


Fractal Functions, Fractal Surfaces, and Wavelets, 2e

Peter R. Massopust Centre of Mathematics, Technical University of Munich, Germany

This updated and expanded second edition is the first systematic exposition of the theory of local iterated function systems, local fractal functions and fractal surfaces, and their connections to wavelets and wavelet sets

KEY FEATURES

- Offers a comprehensive presentation of fractal functions and fractal surfaces
- Includes latest developments in fractal interpolation
- Connects fractal geometry with wavelet theory
- Includes pertinent application examples, further discusses local IFS and new fractal interpolation or fractal data, and further develops the connections to wavelets and wavelet sets
- Deepens and extends the pedagogical content

DESCRIPTION

Fractal Functions, Fractal Surfaces, and Wavelets, Second Edition, is the first systematic exposition of the theory of local iterated function systems, local fractal functions and fractal surfaces, and their connections to wavelets and wavelet sets. The book is based on Massopust's work on and contributions to the theory of fractal interpolation, and the author uses a number of tools—including analysis, topology, algebra, and probability theory—to introduce readers to this exciting subject.

Though much of the material presented in this book is relatively current (developed in the past decades by the author and his colleagues) and fairly specialized, an informative background is provided for those entering the field. With its coherent and comprehensive presentation of the theory of univariate and multivariate fractal interpolation, this book will appeal to mathematicians as well as to applied scientists in the fields of physics, engineering, biomathematics, and computer science. In this second edition, Massopust includes pertinent application examples, further discusses local IFS and new fractal interpolation or fractal data, further develops the connections to wavelets and wavelet sets, and deepens and extends the pedagogical content.

ISBN: 978-0-12-804408-7

PREVIOUS EDITION ISBN: 978-0-12-478840-4

PUB DATE: August 2016

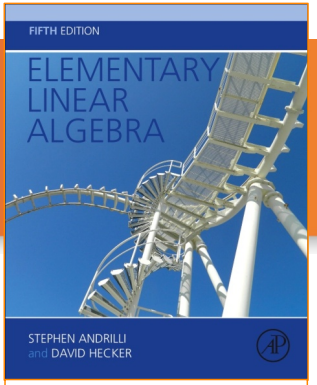
FORMAT: Hardback

PAGES: c. 406

TRIM: 6w x 9h

AUDIENCE

Mathematicians working or beginning to work in the broad field of fractal geometry; physicists and engineers researching or employing fractal models; biomathematicians and computer scientists modelling fractal phenomena



Elementary Linear Algebra, 5e

Stephen Andrilli LaSalle University, Philadelphia, PA, USA
David Hecker Saint Joseph's University, Philadelphia, PA, USA

ISBN: 978-0-12-800853-9

PREVIOUS EDITION ISBN: 9780123747518

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 780

TRIM: 7.5w x 9.25h

AUDIENCE

upper level undergrads in math, physical science and engineering

Bringing its well-known strengths and concepts to students, this book provides solid theoretical linear algebra and real-world applications, including mathematical proofs, worked out examples, and exercises for practical use

KEY FEATURES

- Builds a foundation for math majors in reading and writing elementary mathematical proofs as part of their intellectual/professional development to assist in later math courses
- Presents each chapter as a self-contained and thoroughly explained modular unit.
- Provides clearly written and concisely explained ancillary materials, including four appendices expanding on the core concepts of elementary linear algebra
- Prepares students for future math courses by focusing on the conceptual and practical basics of proofs

DESCRIPTION

Elementary Linear Algebra, 5th edition, by Stephen Andrilli and David Hecker, is a textbook for a beginning course in linear algebra for sophomore or junior mathematics majors. This text provides a solid introduction to both the computational and theoretical aspects of linear algebra. The textbook covers many important real-world applications of linear algebra, including graph theory, circuit theory, Markov chains, elementary coding theory, least-squares polynomials and least-squares solutions for inconsistent systems, differential equations, computer graphics and quadratic forms. Also, many computational techniques in linear algebra are presented, including iterative methods for solving linear systems, **LDU** Decomposition, the Power Method for finding eigenvalues, **QR** Decomposition, and Singular Value Decomposition and its usefulness in digital imaging.

The most unique feature of the text is that students are nurtured in the art of creating mathematical proofs using linear algebra as the underlying context. The text contains a large number of worked out examples, as well as more than 970 exercises (with over 2600 total questions) to give students practice in both the computational aspects of the course and in developing their proof-writing abilities. Every section of the text ends with a series of true/false questions carefully designed to test the students' understanding of the material. In addition, each of the first seven chapters concludes with a thorough set of review exercises and additional true/false questions. Supplements to the text include an Instructor's Manual with answers to all of the exercises in the text, and a Student Solutions Manual with detailed answers to the starred exercises in the text. Finally, there are seven additional web sections available on the book's website to instructors who adopt the text.

Riemannian Submersions, Riemannian Maps in Hermitian Geometry, and their Applications

Bayram Sahin Ege University, Turkey

A rich and self-contained exposition of new and recent developments in Riemannian maps relevant to complex geometry, focusing particularly on Hermitian manifolds

ISBN: 978-0-12-804391-2

PUB DATE: late February 2017

FORMAT: Hardback

PAGES: c. 342

TRIM: 6w x 9h

AUDIENCE

Graduate students and researchers who have good knowledge of Riemannian geometry and its submanifolds and interest in the Riemannian submersions and Riemannian maps, extending to applied mathematicians, mathematical physicists, mathematical statistics, mechanical engineers and mechatronic engineers

KEY FEATURES

- Systematically reviews and references modern literature in Riemannian maps
- Self-contained presentation supported by background information and references
- Rigorous mathematical theory with applications discussed in chapter length
- Accessible reading style with motivating examples helping the reader progress swiftly

DESCRIPTION

Riemannian Submersions, Riemannian Maps in Hermitian Geometry, and their Applications is a rich and self-contained exposition of recent developments in Riemannian submersions and Riemannian maps relevant to complex geometry, focusing particularly on novel submersions, Hermitian manifolds and K\"{a}hlerian manifolds.

Riemannian submersions have long been an effective tool to obtain new manifolds and compare certain manifolds within differential geometry. For complex cases, only holomorphic submersions function appropriately, as discussed at length in Falcitelli, Ianus and Pastore's classic 2004 book.

In this new book, Bayram Sahin extends the scope of complex cases with wholly new submersion types, including Anti-invariant submersions, Semi-invariant submersions, slant submersions, and Pointwise slant submersions, and extends their use in Riemannian maps. The work obtains new properties of the domain manifolds and target manifolds, and investigates the harmonicity and geodesicity conditions for such maps. It also relates these maps with discoveries in pseudo-harmonic maps. Results included in this volume should stimulate future research on Riemannian submersions and Riemannian maps.

Inequalities and Extremal Problems in Probability and Statistics

Selected Topics

Iosif Pinelis Professor, Department of Mathematical Sciences, Michigan Technological University, Houghton, Michigan, USA.; ***Victor H. de la Peña*** Professor, Department of Statistics, Columbia University, USA; ***Rustam Ibragimov*** Professor of Finance and Econometrics, Imperial College Business School, UK; ***Adam Adam Os?kowski*** Associate Professor at Faculty of Mathematics, Informatics and Mechanics, University of Warsaw, Poland.; ***Irina Shevtsova*** Moscow State University and Institute of Informatics Problems of the Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences, Russia.

Gain a broader understanding of the role and applications of inequalities and extremal problems

KEY FEATURES

- Understand useful inequalities
- Applicable across mathematics, sciences, and engineering
- Presented by a team of leading experts

DESCRIPTION

Usually, at the heart of a good limit theorem in probability or statistics is a good inequality – because, in applications, a topological neighbourhood is usually defined by inequalities. This fact needs to be much more widely appreciated. The proposed book aims to promote such appreciation, by presenting various kinds of useful inequalities, applicable in many areas of mathematics, sciences, and engineering. It is oftentimes desirable that the bound provided by the inequality in question be sharp (exact, optimal, best possible) in some sense; in other words, such a bound would present a solution to an extremal problem.

ISBN: 978-0-12-809818-9

PUB DATE: June 2017

FORMAT: Paperback

PAGES: c. 130

TRIM: 6w x 9h

AUDIENCE

Researchers and graduate students in probability, statistics, and econometrics; specialists working in sciences, engineering, financial mathematics, insurance, and mathematical modeling of large risks

MATHEMATICS & STATISTICS

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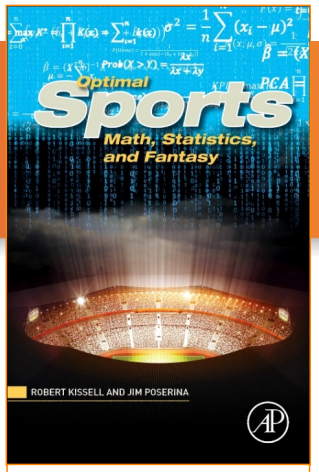


Optimal Sports, Math, Statistics, and Fantasy

Robert Kissell Executive Director, analytics product initiatives, UBS Direct Execution and UBS Portfolio Trading
James Poserina Application Developer, Information Technology Office, School of Arts and Sciences, Rutgers, the State University of New Jersey, New Brunswick, New Jersey

ISBN: 978-0-12-805163-4
PUB DATE: March 2017
FORMAT: Hardback
PAGES: c. 250
TRIM: 6w x 9h

AUDIENCE

sports fans in the US and abroad, professional and college coaches, general managers, scouts, and students seeking a career in the sports industry

Provides the underlying mathematical and statistical ingredients and modeling foundation needed to understand, develop, and customize appropriate quantitative team analysis

KEY FEATURES

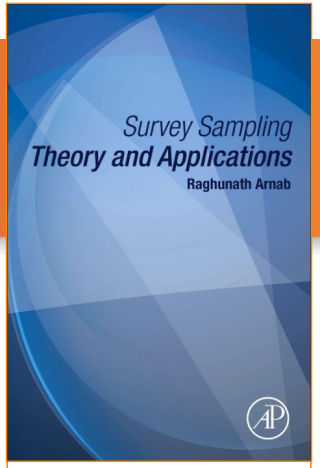
- Covers methods on the modeling of team rankings
- Discusses how mathematics and statistics are used in a variety of sports, such as football, basketball, and baseball
- Explains advanced applications, fantasy sports leagues, and hall of fame player evaluation

DESCRIPTION

Optimal Sports, Math, Statistics, and Fantasy provides the entire sports community—students, professionals, and casual sports fans alike—with the essential mathematics and statistics required to objectively analyze sports teams, evaluate player ability and performance, predict game outcomes, and create strategies for recreational activities, such as fantasy sports gaming and team management.

Additionally, the book provides the theoretical techniques and applications used to decode and demystify ranking schemes, such as the BCS computer rankings system used in college football, the elusive RPI college basketball rankings, FIFA national team rankings, and sports betting lines.

Currently, these methodologies are hidden, non-transparent approaches, not verifiable, and often lead to a lack of confidence in the process. This book teaches readers how to rank sports teams, compute the probability of victory, calculate expected win/loss margin and total points, and determine the set statistics that are most predictive of team strength (offensively & defensively) and player success.



Survey Sampling Theory and Applications

Raghunath Arnab Department of Statistics, University of Botswana, Botswana, and University of Kwa-Zulu Natal, South Africa

Provides a comprehensive on survey sampling for statisticians/mathematicians

KEY FEATURES

- Covers a wide spectrum of topics on survey, sampling and statistics
- An ideal test book for graduate students and researchers in survey sampling theory and applications

DESCRIPTION

This book provides comprehensive materials on survey sampling offering learners and researchers grounded basics and progressive issues in advanced essentials of sampling theory and practice while advanced students and colleagues in the field will find research-based reflections/ examples on emerging trends from the very beginning to the advanced level. Hence it will be useful for basic and advanced courses of Survey sampling. Some of the books are available for graduate students but do not contain material for the recent developments in the area of survey sampling.

The book covers a wide spectrum of topics on the subject and some of the topics e.g. Repetitive sampling over two occasions with varying probabilities, Ranked set sampling, Fays method for Balanced repeated replications, Mirror-Match bootstrap and Controlled sampling procedures discussed here are not available in other text books. In addition, some of the materials are discussed at an advanced level.

In each section, theories are illustrated with numerical examples. At the end of each chapter theoretical as well as numerical exercises are given which can help graduate students.

ISBN: 978-0-12-811848-1

PUB DATE: March 2017

FORMAT: Paperback

PAGES: c. 792

TRIM: 6w x 9h

AUDIENCE

Undergraduates and graduate students in statistics and mathematics; statisticians in Government and private sector organizations

MATHEMATICS & STATISTICS

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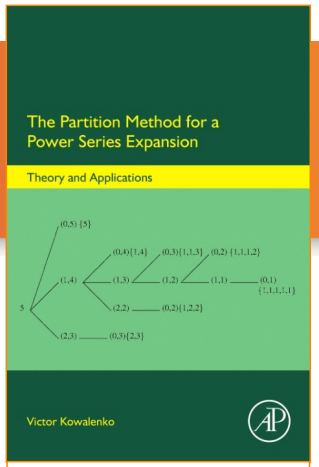

The Partition Method for a Power Series Expansion

Theory and Applications

Victor Kowalenko Department of Mathematics and Statistics, University of Melbourne, Australia

Discover the latest theory describing the partition method for a power series expansion and how the bivariate recursive central partition algorithm is incorporated into a programming methodology that makes the method more efficient

KEY FEATURES

- Explains the partition method by presenting elementary applications involving the Bernoulli, cosecant and reciprocal logarithm numbers
- Compares generating partitions via the BRCP algorithm with the standard lexicographic approaches
- Describes how to programme the partition method for a power series expansion and the BRCP algorithm

DESCRIPTION

This book explores how the method known as *the partition method for a power series expansion*, which has been developed by the author, can be applied to a host of previously intractable problems in mathematics and physics.

In particular, this book describes how the method can be used to determine the Bernoulli, cosecant and reciprocal logarithm numbers, which appear as the coefficients of the resulting power series expansions and then extends the method to more complicated situations where the coefficients become polynomials or mathematical functions. From these examples a general theory for the method is presented, which enables a programming methodology to be established.

Because the coefficients in the power series expansions require the compositions of all the partitions that sum to their order, this book also presents the bivariate recursive central partition (BRCP) algorithm, which is able to process the partitions more efficiently via a tree approach as opposed to standard lexicographic methods. Another advantage of the algorithm is its ability to solve diverse problems in the theory of partitions with minor modification. Finally, the programming techniques of previous chapters are used to derive power series expansions for complex generating functions arising in the theory of partitions and in lattice models of statistical mechanics.

ISBN: 978-0-12-804466-7
PUB DATE: February 2017
FORMAT: Hardback
PAGES: c. 310
TRIM: 6w x 9h

AUDIENCE

Mathematicians, theoretical physicists, computer scientists and software engineers

MATHEMATICS & STATISTICS

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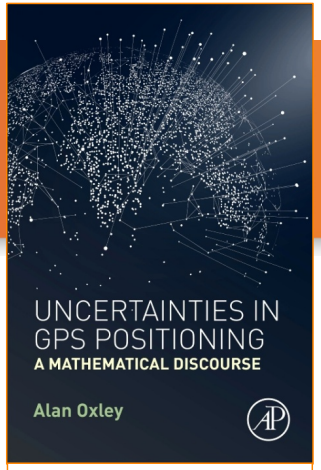

Uncertainties in GPS Positioning

A Mathematical Discourse

Alan Oxley Universiti Teknologi PETRONAS, Malaysia

Discusses the many different errors that can occur in GPS positioning, a rapidly evolving technology

KEY FEATURES

- Covers how a GPS receiver works and how the earth is modeled so position data can be calculated
- Discusses the different signals and clock speeds of the satellites, the receivers, and sources of inaccuracy
- Examines how the errors are distributed in the data and provides examples

DESCRIPTION

Uncertainties in GPS Positioning: A Mathematical Discourse describes the calculations performed by a GPS receiver and the problems associated with ensuring that the derived location is a close match to the actual location. Inaccuracies in calculating a location can have serious repercussions, so this book is a timely source for information on this rapidly evolving technology.

ISBN: 978-0-12-809594-2

PUB DATE: January 2017

FORMAT: Paperback

PAGES: c. 180

TRIM: 6w x 9h

AUDIENCE

Individuals interested in GPS. University students and researchers in maths related to GPS

MATHEMATICS & STATISTICS

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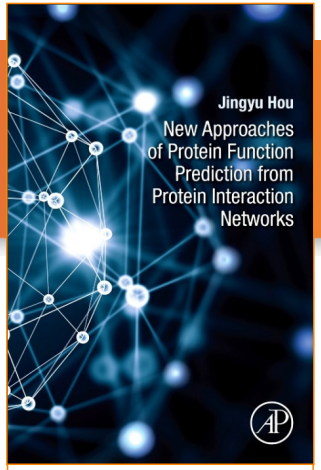

New Approaches of Protein Function Prediction from Protein Interaction Networks

Jingyu Hou School of Information Technology, Deakin University, Australia

Provides an overview of current trends in protein function prediction from protein interaction networks

KEY FEATURES

- Provides innovative approaches and new developments targeting key issues in protein function prediction
- Presents heuristic ideas for further research in this challenging area

DESCRIPTION

New Approaches of Protein Function Prediction from Protein Interaction Networks contains the critical aspects of PPI network based protein function prediction, including semantically assessing the reliability of PPI data, measuring the functional similarity between proteins, dynamically selecting prediction domains, predicting functions, and establishing corresponding prediction frameworks.

Functional annotation of proteins is vital to biological and clinical research and other applications due to the important roles proteins play in various biological processes. Although the functions of some proteins have been annotated via biological experiments, there are still many proteins whose functions are yet to be annotated due to the limitations of existing methods and the high cost of experiments. To overcome experimental limitations, this book helps users understand the computational approaches that have been rapidly developed for protein function prediction.

ISBN: 978-0-12-809814-1

PUB DATE: January 2017

FORMAT: Paperback

PAGES: c. 118

TRIM: 6w x 9h

AUDIENCE

Researchers in computational biology or bioinformatics, experimental biologists in universities, research institutes and commercial organizations

MATHEMATICS & STATISTICS

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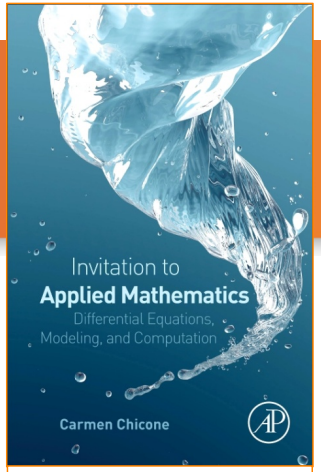


An Invitation to Applied Mathematics

Differential Equations, Modeling, and Computation

Carmen Chicone Professor of Mathematics, University of Missouri, USA

This engaging introduction to the methodology of modern applied mathematics is illustrated throughout with attractive physical problems

KEY FEATURES

- Presents an integrated wealth of modeling, analysis, and numerical methods in one volume
- Provides practical and comprehensible introductions to complex subjects, for example, conservation laws, ?CFD, SPH, BEM, and FEM
- Includes a rich set of applications, with more appealing problems and projects suggested

DESCRIPTION

An Invitation to Applied Mathematics: Differential Equations, Modeling, and Computation introduces the reader to the methodology of modern applied mathematics in modeling, analysis, and scientific computing with emphasis on the use of ordinary and partial differential equations. Each topic is introduced with an attractive physical problem, where a mathematical model is constructed using physical and constitutive laws arising from the conservation of mass, conservation of momentum, or Maxwell's electrodynamics.

Relevant mathematical analysis (which might employ vector calculus, Fourier series, nonlinear ODEs, bifurcation theory, perturbation theory, potential theory, control theory, or probability theory) or scientific computing (which might include Newton's method, the method of lines, finite differences, finite elements, finite volumes, boundary elements, projection methods, smoothed particle hydrodynamics, or Lagrangian methods) is developed in context and used to make physically significant predictions. The target audience is advanced undergraduates (who have at least a working knowledge of vector calculus and linear ordinary differential equations) or beginning graduate students.

Readers will gain a solid and exciting introduction to modeling, mathematical analysis, and computation that provides the key ideas and skills needed to enter the wider world of modern applied mathematics.

ISBN: 978-0-12-804153-6

PUB DATE: September 2016

FORMAT: Hardback

PAGES: c. 856

TRIM: 6w x 9h

AUDIENCE

Advanced undergraduates and beginning graduate students. Professionals in mathematics, engineering, or the other sciences looking for a useful introduction to thd subject. The reader should have mathematical maturity at the level of basic ordinary differential equations, vector calculus, and matrix theory. Previous knowledge of PDE and numerical methods is not assumed, but some experience with computers is.

Analysis for Time-to-Event Data under Censoring and Truncation

Hongsheng Dai Lecturer, University of Essex, UK.
Huan Wang Statistician and Epidemiologist, Dundee Epidemiology and Biostatistics Unit, Population Health Sciences, University of Dundee, UK

This book reviews the existing works on survival analysis for truncated data, mainly focusing on the estimation of univariate and bivariate survival function

ISBN: 978-0-12-805480-2
PUB DATE: September 2016
FORMAT: Paperback
PAGES: c. 96
TRIM: 8.5w x 10.875h

AUDIENCE

Researchers and postgraduate students in mathematical statistics, applied statistics, or epidemiology

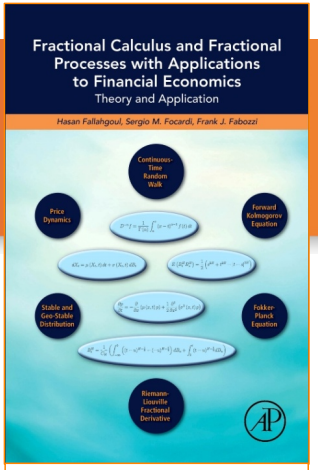
KEY FEATURES

- Assists statisticians, epidemiologists, medical researchers, and actuaries who need to understand the mechanism of selection bias
- Reviews existing works on survival analysis for truncated data, mainly focusing on the estimation of univariate and bivariate survival function
- Offers a guideline for analyzing truncated survival data

DESCRIPTION

Survival Analysis for Bivariate Truncated Data provides readers with a comprehensive review on the existing works on survival analysis for truncated data, mainly focusing on the estimation of univariate and bivariate survival function. The most distinguishing feature of survival data is known as censoring, which occurs when the survival time can only be exactly observed within certain time intervals. A second feature is truncation, which is often deliberate and usually due to selection bias in the study design.

Truncation presents itself in different ways. For example, left truncation, which is often due to a so-called late entry bias, occurs when individuals enter a study at a certain age and are followed from this delayed entry time. Right truncation arises when only individuals who experienced the event of interest before a certain time point can be observed. Analyzing truncated survival data without considering the potential selection bias may lead to seriously biased estimates of the time to event of interest and the impact of risk factors.



Fractional Calculus and Fractional Processes with Applications to Financial Economics

Theory and Application

Hassan Fallahgoul Post-Doctoral Researcher, Swiss Finance Institute, École polytechnique fédérale de Lausanne, Switzerland; ***Sergio Focardi*** Professor of Finance and Director of the Master in Investment, Banking and Risk Management, Researcher at the Finance Group, ESILV EMLV of the Pole Universitaire De Vinci, Paris, France; ***Frank Fabozzi*** Professor of Finance, EDHEC Business School and a member of the EDHEC Risk Institute, USA

A comprehensive, go-to reference that explains fractional calculus, fractional processes, and their applications to financial economics

KEY FEATURES

- Provides the necessary background for the book's content as applied to financial economics
- Analyzes the application of fractional calculus and fractional processes from deterministic and stochastic perspectives

DESCRIPTION

Fractional Calculus and Fractional Processes with Applications to Financial Economics presents the theory and application of fractional calculus and fractional processes to financial data. Fractional calculus dates back to 1695 when Gottfried Wilhelm Leibniz first suggested the possibility of fractional derivatives. Research on fractional calculus started in full earnest in the second half of the twentieth century. The fractional paradigm applies not only to calculus, but also to stochastic processes, used in many applications in financial economics such as modelling volatility, interest rates, and modelling high-frequency data. The key features of fractional processes that make them interesting are *long-range memory*, *path-dependence*, *non-Markovian properties*, *self-similarity*, *fractal paths*, and *anomalous diffusion behaviour*. In this book, the authors discuss how fractional calculus and fractional processes are used in financial modelling and finance economic theory. It provides a practical guide that can be useful for students, researchers, and quantitative asset and risk managers interested in applying fractional calculus and fractional processes to asset pricing, financial time-series analysis, stochastic volatility modelling, and portfolio optimization.

ISBN: 978-0-12-804248-9

PUB DATE: September 2016

FORMAT: Hardback

PAGES: c. 106

TRIM: 7.5w x 9.25h

AUDIENCE

Graduate students of mathematical finance, statistics and probability, and applied mathematics

MATHEMATICS & STATISTICS

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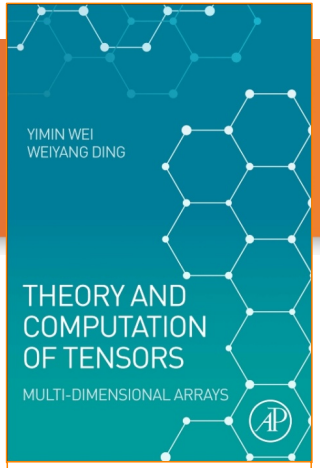

Theory and Computation of Tensors

Multi-Dimensional Arrays

Yimin Wei Professor,School of Mathematical Sciences, Fudan University, Shanghai, China
Weiyang Ding Ph.D student, School of Mathematical Sciences, Fudan University, Shanghai, P.R. of China

This timely book introduces tensors, or multi-dimensional arrays, and investigates theories and computations of tensors to broaden perspectives on matrices, including how to extend numerical linear algebra to numerical multi-linear algebra

ISBN: 978-0-12-803953-3
PUB DATE: August 2016
FORMAT: Paperback
PAGES: c. 138
TRIM: 6w x 9h

AUDIENCE

Researchers and students in applied and computational mathematics, computer science, linear algebra and engineering

KEY FEATURES

- Provides an introduction of recent results about tensors
- Investigates theories and computations of tensors to broaden perspectives on matrices
- Discusses how to extend numerical linear algebra to numerical multi-linear algebra
- Offers examples of how researchers and students can engage in research and the applications of tensors and multi-dimensional arrays

DESCRIPTION

Theory and Computation of Tensors: Multi-Dimensional Arrays investigates theories and computations of tensors to broaden perspectives on matrices. Data in the Big Data Era is not only growing larger but also becoming much more complicated. Tensors (multi-dimensional arrays) arise naturally from many engineering or scientific disciplines because they can represent multi-relational data or nonlinear relationships.

MATHEMATICS & STATISTICS

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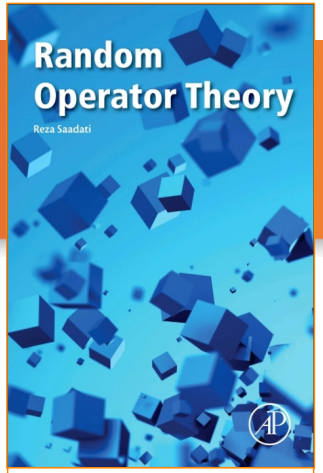

Random Operator Theory

Reza Saadati Researcher, Department of Mathematics, Iran University of Science and Technology

This book defines the random norm of random bounded linear operators and includes random norms of differentiation operators and integral operators

KEY FEATURES

- Explores random differentiation and random integral equations
- Delves into the study of random operator theory
- Discusses the concept of random Banach algebras and its applications

DESCRIPTION

Random Operator Theory provides a comprehensive discussion of the random norm of random bounded linear operators, also providing important random norms as random norms of differentiation operators and integral operators. After providing the basic definition of random norm of random bounded linear operators, the book then delves into the study of random operator theory, with final sections discussing the concept of random Banach algebras and its applications.

ISBN: 978-0-12-805346-1

PUB DATE: August 2016

FORMAT: Hardback

PAGES: c. 70

TRIM: 6w x 9h

AUDIENCE

Postgraduate students

MATHEMATICS & STATISTICS

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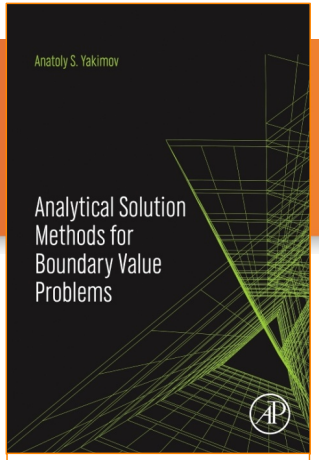


Analytical Solution Methods for Boundary Value Problems

A Yakimov Chair, Physical and Computational Mechanics, Tomsk State University, Tomsk, Russia

Extensively revised, this new English-language edition of the original 2011 Russian-language work provides deep analysis methods and exact solutions for mathematical physicists seeking to model germane linear and nonlinear boundary problems without using the theory of series

ISBN: 978-0-12-804289-2

PUB DATE: July 2016

FORMAT: Hardback

PAGES: c. 188

TRIM: 6w x 9h

AUDIENCE

Mathematicians and mathematical physicists interested in nonlinear boundary value problems, transport equation methods, and applied scientists and engineers interested in thermal protection

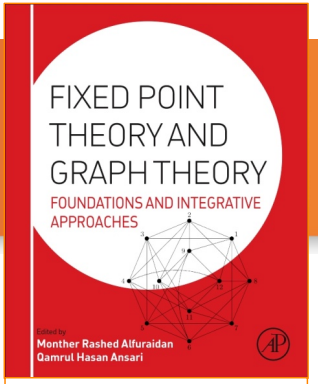
KEY FEATURES

- Discusses the theory and analytical methods for many differential equations appropriate for applied and computational mechanics researchers
- Addresses pertinent boundary problems in mathematical physics achieved without using the theory of series
- Includes results that can be used to address nonlinear equations in heat conductivity for the solution of conjugate heat transfer problems and the equations of telegraph and nonlinear transport equation
- Covers select method solutions for applied mathematicians interested in transport equations methods and thermal protection studies
- Features extensive revisions from the Russian original, with 115+ new pages of new textual content

DESCRIPTION

Analytical Solution Methods for Boundary Value Problems is an extensively revised, new English language edition of the original 2011 Russian language work, which provides deep analysis methods and exact solutions for mathematical physicists seeking to model germane linear and nonlinear boundary problems. Current analytical solutions of equations within mathematical physics fail completely to meet boundary conditions of the second and third kind, and are wholly obtained by the defunct theory of series. These solutions are also obtained for linear partial differential equations of the second order. They do not apply to solutions of partial differential equations of the first order and they are incapable of solving nonlinear boundary value problems.

Analytical Solution Methods for Boundary Value Problems attempts to resolve this issue, using quasi-linearization methods, operational calculus and spatial variable splitting to identify the exact and approximate analytical solutions of three-dimensional non-linear partial differential equations of the first and second order. The work does so uniquely using all analytical formulas for solving equations of mathematical physics without using the theory of series. Within this work, pertinent solutions of linear and nonlinear boundary problems are stated. On the basis of quasi-linearization, operational calculation and splitting on spatial variables, the exact and approached analytical solutions of the equations are obtained in private derivatives of the first and second order. Conditions of unequivocal resolvability of a nonlinear boundary problem are found and the estimation of speed of convergence of iterative process is given. On an example of trial functions results of comparison of the analytical solution are given which have been obtained on suggested mathematical technology, with the exact solution of boundary problems and with the numerical solutions on well-known methods.



Fixed Point Theory and Graph Theory

Foundations and Integrative Approaches

Edited by: ***Monther Alfuraidan*** King Fahd University, Saudi Arabia
Qamrul Ansari Aligarh Muslim University, India

This research monograph synthesizes and uniquely links research advances and applications between the otherwise isolated Metric Fixed Point Theory and Graph Theory domains, highly established theorems in mathematical analysis and discrete mathematics pertinent to applications

ISBN: 978-0-12-804295-3

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 424

TRIM: 7.5w x 9.25h

AUDIENCE

All academicians and PhD students in the field of fixed point or graph theory interested in applications.

KEY FEATURES

- Introduces both metric fixed point and graph theory in terms of their disparate foundations and common application environments
- Provides a unique integration of otherwise disparate domains that aids both students seeking to understand either area and researchers interested in establishing an integrated research approach
- Emphasizes solution methods for fixed points in non-linear problems such as variational inequalities, split feasibility, and hierarchical variational inequality problems that is particularly appropriate for engineering and core science applications

DESCRIPTION

Fixed Point Theory and Graph Theory provides an intersection between the theories of fixed point theorems that give the conditions under which maps (single or multivalued) have solutions and graph theory which uses mathematical structures to illustrate the relationship between ordered pairs of objects in terms of their vertices and directed edges.

This edited reference work is perhaps the first to provide a link between the two theories, describing not only their foundational aspects, but also the most recent advances and the fascinating intersection of the domains.

The authors provide solution methods for fixed points in different settings, with two chapters devoted to the solutions method for critically important non-linear problems in engineering, namely, variational inequalities, fixed point, split feasibility, and hierarchical variational inequality problems. The last two chapters are devoted to integrating fixed point theory in spaces with the graph and the use of retractions in the fixed point theory for ordered sets.

MATHEMATICS & STATISTICS

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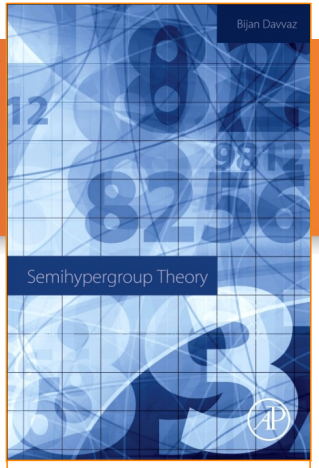

Semihypergroup Theory

Bijan Davvaz Department of Mathematics, Yazd University, Yazd, Iran

This first book devoted to the semihypergroup theory includes basic results concerning semigroup theory and algebraic hyperstructures, which represent the most general algebraic context in which reality can be modelled.

KEY FEATURES

- Offers the first book devoted to the semihypergroup theory
- Presents an introduction to recent progress in the theory of semihypergroups
- Covers most of the mathematical ideas and techniques required in the study of semihypergroups
- Employs the notion of fundamental relations to connect semihypergroups to semigroups

DESCRIPTION

Semihypergroup Theory is the first book devoted to the semihypergroup theory and it includes basic results concerning semigroup theory and algebraic hyperstructures, which represent the most general algebraic context in which reality can be modelled.

Hyperstructures represent a natural extension of classical algebraic structures and they were introduced in 1934 by the French mathematician Marty. Since then, hundreds of papers have been published on this subject.

ISBN: 978-0-12-809815-8

PUB DATE: June 2016

FORMAT: Paperback

PAGES: c. 156

TRIM: 6w x 9h

AUDIENCE

Theoreticians in pure and applied mathematics

MATHEMATICS & STATISTICS

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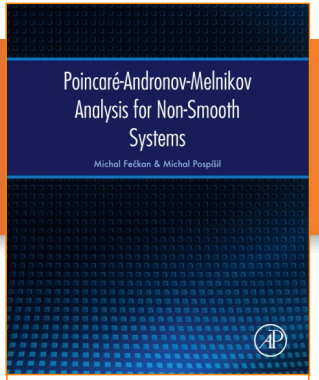


Poincaré-Andronov-Melnikov Analysis for Non-Smooth Systems

Michal Feckan Comenius University in Bratislava, Faculty of Mathematics, Physics and Informatics, Department of Mathematical Analysis and Numerical Mathematics, Bratislava, Slovak Republic
Michal Pospisil Slovak Academy of Sciences, Mathematical Institute, Bratislava, Slovakia

Reviewing real-world processes characterized by instantaneous changes in general spatial variables and parameters, this research monograph explores their asymptotical results for application in stability, instability, and hyperbolicity research and provides realistic models based on unsolved discontinuous problems from the literature and describes how Poincaré-Andronov-Melnikov analysis can be used to solve them

ISBN: 978-0-12-804294-6
PUB DATE: May 2016
FORMAT: Hardback
PAGES: c. 244
TRIM: 7.5w x 9.25h

AUDIENCE

Postgraduate students, mathematicians, physicists and theoretically inclined engineers either studying oscillations of nonlinear discontinuous mechanical systems or electrical circuits by applying the modern theory of bifurcation methods in dynamical systems

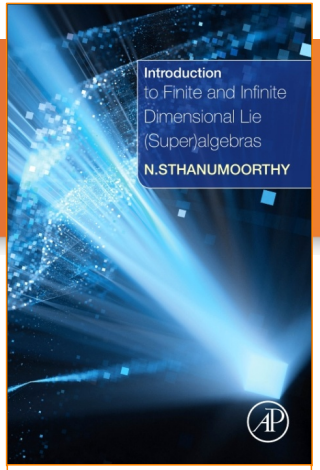
KEY FEATURES

- Extends Melnikov analysis of the classic Poincaré and Andronov staples, pointing to a general theory for freedom in dimensions of spatial variables and parameters as well as asymptotical results such as stability, instability, and hyperbolicity
- Presents a toolbox of critical theoretical techniques for many practical examples and models, including non-smooth dynamical systems
- Provides realistic models based on unsolved discontinuous problems from the literature and describes how Poincaré-Andronov-Melnikov analysis can be used to solve them
- Investigates the relationship between non-smooth systems and their continuous approximations

DESCRIPTION

Poincaré-Andronov-Melnikov Analysis for Non-Smooth Systems is devoted to the study of bifurcations of periodic solutions for general n-dimensional discontinuous systems. The authors study these systems under assumptions of transversal intersections with discontinuity-switching boundaries. Furthermore, bifurcations of periodic sliding solutions are studied from sliding periodic solutions of unperturbed discontinuous equations, and bifurcations of forced periodic solutions are also investigated for impact systems from single periodic solutions of unperturbed impact equations. In addition, the book presents studies for weakly coupled discontinuous systems, and also the local asymptotic properties of derived perturbed periodic solutions.

The relationship between non-smooth systems and their continuous approximations is investigated as well. Examples of 2-, 3- and 4-dimensional discontinuous ordinary differential equations and impact systems are given to illustrate the theoretical results. The authors use so-called discontinuous Poincaré mapping which maps a point to its position after one period of the periodic solution. This approach is rather technical, but it does produce results for general dimensions of spatial variables and parameters as well as the asymptotical results such as stability, instability, and hyperbolicity.



Introduction to Finite and Infinite Dimensional Lie (Super)algebras

Neelacanta Sthanumoorthy has 45 years of teaching and research experience. Formerly Professor and Professor Emeritus, Dr Sthanumoorthy is presently the Principal Investigator of a Book-Writing Project funded by "Science and Engineering Research Board - Department of Science and Technology, Government of India" in RIASM, University of Madras, India. He has published several research papers on topics closely related to the title of the present book, guided many Ph.D. scholars and evaluated several Ph.D. theses. He was an editor of Kac-Moody Lie Algebras and Related topics, which published as volume 343 of 'Contemporary Mathematics (AMS)', and he is a reviewer for Mathematical Reviews. He delivered lectures in many institutions in the USA, Germany, Italy, China, and India. Many awards and honors were also conferred on the author.

Including numerous exercises and worked examples, this research monograph systematically describes the formal relationship between Lie Theory and other areas of mathematics and mathematical physics where lie algebras, superalgebras, and other related structures naturally arise

ISBN: 978-0-12-804675-3

PUB DATE: April 2016

FORMAT: Hardback

PAGES: c. 500

TRIM: 6w x 9h

AUDIENCE

Upper graduate and postgraduate students interested in Lie algebras, Lie superalgebras, quantum groups, string theory, and mathematical physics.

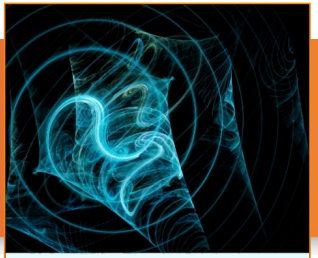
KEY FEATURES

- Discusses the fundamental structure and all root relationships of Lie algebras and Lie superalgebras and their finite and infinite dimensional representation theory
- Closely describes BKM Lie superalgebras, their different classes of imaginary root systems, their complete classifications, root-supermultiplicities, and related combinatorial identities
- Includes numerous tables of the properties of individual Lie algebras and Lie superalgebras
- Focuses on Kac-Moody algebras

DESCRIPTION

Lie superalgebras are a natural generalization of Lie algebras, having applications in geometry, number theory, gauge field theory, and string theory. *Introduction to Finite and Infinite Dimensional Lie Algebras and Superalgebras* introduces the theory of Lie superalgebras, their algebras, and their representations.

The material covered ranges from basic definitions of Lie groups to the classification of finite-dimensional representations of semi-simple Lie algebras. While discussing all classes of finite and infinite dimensional Lie algebras and Lie superalgebras in terms of their different classes of root systems, the book focuses on Kac-Moody algebras. With numerous exercises and worked examples, it is ideal for graduate courses on Lie groups and Lie algebras.



Theory of Approximate Functional Equations

In Banach Algebras, Inner Product Spaces and Amenable Groups

Madjid Eshaghi Gordji Department of Mathematics, Faculty of Mathematics, Statistics and Computer Sciences, Semnan University, Iran
Sadegh Abbaszadeh Department of Mathematics, Faculty of Mathematics, Statistics and Computer Sciences, Semnan University, Iran

Presents open problems and research directions for research mathematicians and those interested in Hyers-Ulam stability problems

KEY FEATURES

- A useful text for graduate seminars and of interest to a wide audience including mathematicians and applied researchers.
- Presents recent developments in the theory of approximate functional equations.
- Discusses the stability problem of functional equations in Banach algebras, inner product spaces and amenable groups.

DESCRIPTION

Presently no other book deals with the stability problem of functional equations in Banach algebras, inner product spaces and amenable groups. Moreover, in most stability theorems for functional equations, the completeness of the target space of the unknown functions contained in the equation is assumed. Recently, the question, whether the stability of a functional equation implies this completeness, has been investigated by several authors.

In this book the authors investigate these developments in the theory of approximate functional equations.

ISBN: 978-0-12-803920-5
PUB DATE: February 2016
FORMAT: Hardback
PAGES: c. 142
TRIM: 6w x 9h

AUDIENCE

Graduate students, mathematicians and applied researchers

MATHEMATICS & STATISTICS

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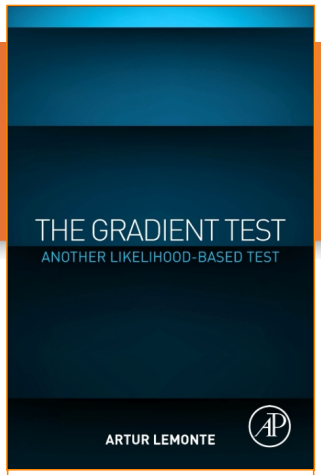


The Gradient Test

Another Likelihood-Based Test

Artur Lemonte Department of Statistics, Federal University of Pernambuco, Recife/PE, Brazil

This book provides a fast dissemination of the gradient test in statistics literature from around the world, presenting the latest information on this interesting alternative to the classical large-sample tests, namely the likelihood ratio (LR), Wald (W), and Rao score (S) tests

KEY FEATURES

- Covers the background of the gradient statistic and the different models
- Discusses The Bartlett-corrected gradient statistic
- Explains the algorithm to compute the gradient-type statistic

DESCRIPTION

The Gradient Test: Another Likelihood-Based Test presents the latest on the gradient test, a large-sample test that was introduced in statistics literature by George R. Terrell in 2002. The test has been studied by several authors, is simply computed, and can be an interesting alternative to the classical large-sample tests, namely, the likelihood ratio (LR), Wald (W), and Rao score (S) tests.

Due to the large literature about the LR, W and S tests, the gradient test is not frequently used to test hypothesis. The book covers topics on the local power of the gradient test, the Bartlett-corrected gradient statistic, the gradient statistic under model misspecification, and the robust gradient-type bounded-influence test.

ISBN: 978-0-12-803596-2

PUB DATE: February 2016

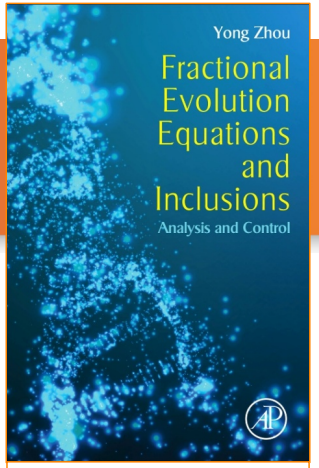
FORMAT: Paperback

PAGES: c. 142

TRIM: 6w x 9h

AUDIENCE

The short book regarding the gradient test can be used for a graduate course. Additionally, it can be used by researchers who are interested in developing research in likelihood-based theory. The short book will link theory and practice and hence a lot of researchers of many areas can use the book as a reference for the gradient test.



Fractional Evolution Equations and Inclusions

Analysis and Control

Yong Zhou Faculty of Mathematics and Computer Sciences, Zhejiang Normal University, P.R. China.

Systematizes the theory of fractional evolution inclusions within control systems, with the aim of providing more accurate modeling applications in physical phenomena that can be described stochastically

ISBN: 978-0-12-804277-9

PUB DATE: January 2016

FORMAT: Hardback

PAGES: c. 284

TRIM: 6w x 9h

AUDIENCE

Researchers and graduate students working in research, seminars, and advanced graduate courses in pure and applied mathematics, physics, mechanics, engineering, biology, and other applied sciences.

KEY FEATURES

- Systematic analysis of existence theory and topological structure of solution sets for fractional evolution inclusions and control systems
- Differential models with fractional derivative provide an excellent instrument for the description of memory and hereditary properties, and their description and working will provide valuable insights into the modelling of many physical phenomena suitable for engineers and physicists
- The book provides the necessary background material required to go further into the subject and explore the rich research literature
-

DESCRIPTION

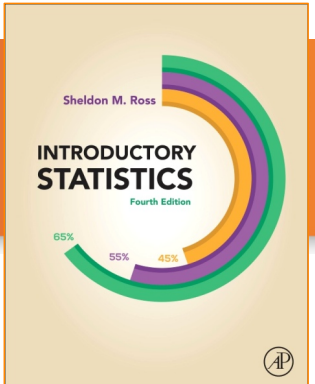
Fractional evolution inclusions are an important form of differential inclusions within nonlinear mathematical analysis. They are generalizations of the much more widely developed fractional evolution equations (such as time-fractional diffusion equations) seen through the lens of multivariate analysis. Compared to fractional evolution equations, research on the theory of fractional differential inclusions is however only in its initial stage of development.

This is important because differential models with the fractional derivative providing an excellent instrument for the description of memory and hereditary properties, and have recently been proved valuable tools in the modeling of many physical phenomena.

The fractional order models of real systems are always more adequate than the classical integer order models, since the description of some systems is more accurate when the fractional derivative is used. The advantages of fractional derivatization become evident in modeling mechanical and electrical properties of real materials, description of rheological properties of rocks and in various other fields. Such models are interesting for engineers and physicists as well as so-called pure mathematicians.

Phenomena investigated in hybrid systems with dry friction, processes of controlled heat transfer, obstacle problems and others can be described with the help of various differential inclusions, both linear and nonlinear.

Fractional Evolution Equations and Inclusions is devoted to a rapidly developing area of the research for fractional evolution equations & inclusions and their applications to control theory. It studies Cauchy problems for fractional evolution equations, and fractional evolution inclusions with Hille-Yosida operators. It discusses control problems for systems governed by fractional evolution equations. Finally it provides an investigation of fractional stochastic evolution inclusions in Hilbert spaces.



Introductory Statistics, 4e

Sheldon M. Ross University of Southern California, Los Angeles, USA

Presents the science of statistics, focusing on contemporary examples and applications from diverse areas, and an explanation of intuition and ideas behind each method

ISBN: 978-0-12-804317-2

PREVIOUS EDITION ISBN: 9780123743886

PUB DATE: January 2017

FORMAT: Hardback

PAGES: c. 812

TRIM: 8.5w x 10.875h

AUDIENCE

This text is written for the introductory non-calculus based statistics course offered in mathematics and/or statistics departments for undergraduate students of any major who take a semester course in basic Statistics or a year course in Probability and Statistics

KEY FEATURES

- Includes new section on Pareto distribution and the 80-20 rule, Benford's law, odds, joint distribution and correlation, logistic regression, A-B testing, and examples from the world of analytics and big data
- Comprehensive edition that includes the most commonly used statistical software packages (SAS, SPSS, Minitab), ISM, SSM, and an online graphing calculator manual
- Presents a unique, historical perspective, profiling prominent statisticians and historical events to motivate learning by including interest and context
- Provides exercises and examples that help guide the student towards indpendent learning using real issues and real data, e.g. stock price models, health issues, gender issues, sports, and scientific fraud

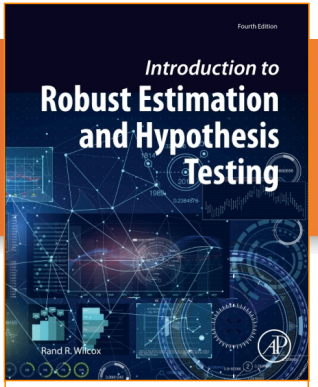
DESCRIPTION

Introductory Statistics, Fourth Edition, reviews statistical concepts and techniques in a manner that will teach students not only how and when to utilize the statistical procedures developed, but also how to understand why these procedures should be used. The text's main merits are the clarity of presentation, contemporary examples and applications from diverse areas, an explanation of intuition, and the ideas behind the statistical methods.

Concepts are motivated, illustrated, and explained in a way that attempts to increase one's intuition. To quote from the preface, it is only when a student develops a feel or intuition for statistics that she or he is really on the path toward making sense of data. Ross achieves this goal through a coherent mix of mathematical analysis, intuitive discussions, and examples.

Applications and examples refer to real-world issues, such as gun control, stock price models, health issues, driving age limits, school admission ages, use of helmets, sports, scientific fraud, and many others. Examples relating to data mining techniques using the number of Google queries or Twitter tweets are also considered.

For this fourth edition, new topical coverage includes sections on Pareto distribution and the 80-20 rule, Benford's law, added material on odds and joint distributions and correlation, logistic regression, A-B testing, and more modern (big data) examples and exercises.



Introduction to Robust Estimation and Hypothesis Testing, 4e

Rand R. Wilcox University of Southern California, USA

This work describes and illustrates modern robust methods for dealing with outliers, skewed distributions, heteroscedasticity and curvature for anyone dealing with methods for studying associations, comparing groups, or analyzing multivariate data

A Volume in the Statistical Modeling and Decision Science Series.

ISBN: 978-0-12-804733-0

PREVIOUS EDITION ISBN: 978-0-12-386983-8

PUB DATE: September 2016

FORMAT: Hardback

PAGES: c. 800

TRIM: 7.5w x 9.25h

AUDIENCE

The book is relevant to anyone dealing with methods for studying associations, comparing groups, or analyzing multivariate data. The book assumes the reader has had some basic training in statistics

KEY FEATURES

- Extensive revisions to cover the latest developments in robust regression
- Covers latest improvements in ANOVA
- Includes newest rank-based methods
- Describes and illustrated easy to use software

DESCRIPTION

Introduction to Robust Estimating and Hypothesis Testing, 4th Editon, is a 'how-to' on the application of robust methods using available software. Modern robust methods provide improved techniques for dealing with outliers, skewed distribution curvature and heteroscedasticity that can provide substantial gains in power as well as a deeper, more accurate and more nuanced understanding of data. Since the last edition, there have been numerous advances and improvements. They include new techniques for comparing groups and measuring effect size as well as new methods for comparing quantiles. Many new regression methods have been added that include both parametric and nonparametric techniques. The methods related to ANCOVA have been expanded considerably. New perspectives related to discrete distributions with a relatively small sample space are described as well as new results relevant to the shift function. The practical importance of these methods is illustrated using data from real world studies. The R package written for this book now contains over 1200 functions.

New to this edition

- 35% revised content
- Covers many new and improved R functions
- New techniques that deal with a wide range of situations

Practical Business Statistics, 7e

Andrew F. Siegel Professor of Information Systems and Operations Management, Professor of Finance and Business Economics, and Adjunct Professor of Statistics, Foster School of Business, University of Washington, Seattle, WA, USA

Without getting bogged down in excessive mathematical details, this popular text employs an engaging and approachable style to teach fundamental business statistics principles and features helpful examples and exercises directly applicable to working professionals in finance, accounting, and marketing

ISBN: 978-0-12-804250-2

PREVIOUS EDITION ISBN: 9780123852083

PUB DATE: August 2016

FORMAT: Paperback

PAGES: c. 622

TRIM: 8.5w x 10.875h

AUDIENCE

Undergraduate students of business, finance, economics, and statistics

KEY FEATURES

- Provides users with a conceptual, realistic, and matter-of-fact approach to managerial statistics
- Offers an accessible approach to teach present and future managers how to use and understand statistics without an overdose of technical detail, enabling them to better understand concepts and to interpret results
- Features updated examples and graphics (200+ figures) to illustrate important applied uses and current business trends
- Includes robust ancillary instructional materials such as the authors' STATPAD software package, an instructor's manual, lecture slides, and data files to save you time when preparing for class

DESCRIPTION

Practical Business Statistics, Seventh Edition, provides a conceptual, realistic, and matter-of-fact approach to managerial statistics that carefully maintains, but does not overemphasize mathematical correctness. The book provides deep understanding of how to learn from data and how to deal with uncertainty while promoting the use of practical computer applications. This valuable, accessible approach teaches present and future managers how to use and understand statistics without an overdose of technical detail, enabling them to better understand the concepts at hand and to interpret results.

The text uses excellent examples with real world data relating to business sector functional areas such as finance, accounting, and marketing. Written in an engaging style, this timely revision is class-tested and designed to help students gain a solid understanding of fundamental statistical principles without bogging them down with excess mathematical details.

MATHEMATICS & STATISTICS

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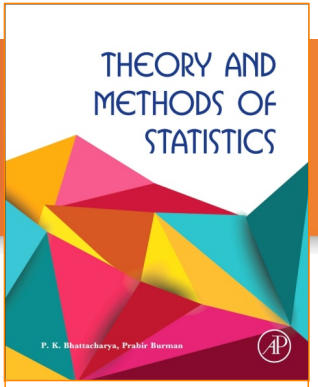


Theory and Methods of Statistics

P.K. Bhattacharya Professor Emeritus, Department of Statistics, University of California, Davis, Davis, CA, USA
Prabir Burman Professor, Department of Statistics, University of California, Davis, Davis, CA, USA

A comprehensive treatment of foundational statistics, probability theory, linear models, and related special topics, including many probability inequalities useful for investigating convergence of statistical procedures

ISBN: 978-0-12-802440-9
PUB DATE: May 2016
FORMAT: Paperback
PAGES: c. 530
TRIM: 7.5w x 9.25h

AUDIENCE

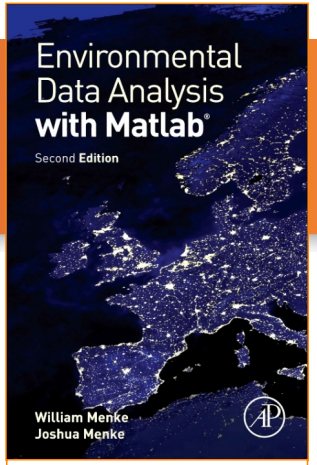
Graduate (Masters/PhD) students and research statisticians.

KEY FEATURES

- Codifies foundational information in many core areas of statistics into a comprehensive and definitive resource
- Serves as an excellent text for select master's and PhD programs, as well as a professional reference
- Integrates numerous examples to illustrate advanced concepts
- Includes many probability inequalities useful for investigating convergence of statistical procedures

DESCRIPTION

Theory and Methods of Statistics covers essential topics for advanced graduate students and professional research statisticians. This comprehensive resource covers many important areas in one manageable volume, including core subjects such as probability theory, mathematical statistics, and linear models, and various special topics, including nonparametrics, curve estimation, multivariate analysis, time series, and resampling. The book presents subjects such as "maximum likelihood and sufficiency," and is written with an intuitive, heuristic approach to build reader comprehension. It also includes many probability inequalities that are not only useful in the context of this text, but also as a resource for investigating convergence of statistical procedures.



Environmental Data Analysis with MatLab, 2e

William Menke Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY, USA
Joshua Menke

This new edition offers enhancements to the original, with an expanded tutorial approach, new crib sheets, and problem sets providing a clear learning path for students and researchers working to analyze real data sets in the environmental sciences. Supplemented with data and MATLAB® scripts for use as a data analysis tutorial.

ISBN: 978-0-12-804488-9

PREVIOUS EDITION ISBN: 9780123918864

PUB DATE: March 2016

FORMAT: Hardback

PAGES: c. 322

TRIM: 7.5w x 9.25h

AUDIENCE

Upper-level undergraduate students, graduate students and researchers in environmental science and environmental engineering, broadly construed.

KEY FEATURES

- Provides a clear learning path for researchers and students using data analysis techniques which build upon one another, choosing the right order of presentation to substantially aid the reader in learning material
- Includes crib sheets to summarize the most important data analysis techniques, results, procedures, and formulas, serving to organize the material in such a way that its sequence is more apparent
- Uses real-world environmental examples and case studies formulated using the readily-available software environment in MATLAB®
- Includes log-log plots with further examples of their use

DESCRIPTION

Environmental Data Analysis with MatLab is a new edition that expands fundamentally on the original with an expanded tutorial approach, new crib sheets, and problem sets providing a clear learning path for students and researchers working to analyze real data sets in the environmental sciences. Since publication of the bestselling Environmental Data Analysis with MATLAB®, many advances have been made in environmental data analysis. One only has to consider the global warming debate to realize how critically important it is to be able to derive clear conclusions from often noisy data drawn from a broad range of sources. The work teaches the basics of the underlying theory of data analysis and then reinforces that knowledge with carefully chosen, realistic scenarios.

MATLAB®, a commercial data processing environment, is used in these scenarios. Significant content is devoted to teaching how it can be effectively used in an environmental data analysis setting. This new edition, though written in a self-contained way, is supplemented with data and MATLAB® scripts that can be used as a data analysis tutorial.

New features include boxed crib sheets to help identify major results and important formulas and give brief advice on how and when they should be used. Numerical derivatives and integrals are derived and illustrated. Includes log-log plots with further examples of their use. Discusses new datasets on precipitation and stream flow. Topical enhancement applies the chi-squared test to the results of the generalized least squares method. New coverage of cluster analysis and approximation techniques that are widely applied in data analysis, including Taylor Series and low-order polynomial approximations; non-linear least-squares with Newton's method; and pre-calculation and updating techniques applicable to real time data acquisition.

MATHEMATICS & STATISTICS

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The Indian Nitrogen Assessment

Sources of Reactive Nitrogen, Environmental and Climate Effects, and Management Options and Policies

Edited by: ***YP Abrol*** Society for Conservation of Nature, New Delhi, India; ***TK Adhya*** KIIT University, Bhubaneswar, India; ***Viney P. Aneja*** North Carolina State University, USA; ***Nandula Raghuram*** KIIT University, India; ***Himanshu Pathak*** Indian Agricultural Research Institute, New Delhi, India; ***Umesh Kulshrestha*** Jawaharlal Nehru University, Delhi, India; ***Chhemendra Sharma*** National Physical Laboratory, New Delhi, India; ***Bijay Singh***

ELSEVIER

The definitive work on nitrogen's impact on every aspect of life in India, including its environmental, food security, health, energy, and industry ramifications

ISBN: 978-0-12-811836-8

PUB DATE: January 2017

FORMAT: Paperback

PAGES: c. 400

TRIM: 7.5w x 9.25h

AUDIENCE

Earth scientists, Environmental scientists, Agricultural scientists, Ecologists, Environmental chemists, Anthropologists, Engineers

KEY FEATURES

- Identifies all significant sources of reactive nitrogen flows and their contribution to the nitrogen-cycle on a national, regional, and global level
- Covers nitrogen management across sectors, including the environment, food security, energy, and health
- Provides a single reference on reactive nitrogen in India to help in a number of activities, including the evaluation, analysis, synthesis, documentation, and communications on reactive nitrogen

DESCRIPTION

The Indian Nitrogen Assessment: Sources of Reactive Nitrogen, Environmental and Climate Effects, and Management Options and Policies provides a reference for anyone interested in Reactive N, from researchers and students, to environmental managers. Although the main processes that affect the N cycle are well known, this book is focused on the causes and effects of disruption in the N cycle, specifically in India.

The book helps readers gain a precise understanding of the scale of nitrogen use, misuse, and release through various agricultural, industrial, vehicular, and other activities, also including discussions on its contribution to the pollution of water and air. Drawing upon the collective work of the Indian Nitrogen Group, this reference book helps solve the challenges associated with providing reliable estimates of nitrogen transfers within different ecosystems, also presenting the next steps that should be taken in the development of balanced, cost-effective, and feasible strategies to reduce the amount of reactive nitrogen.

PHYSICAL SCIENCES & MATH

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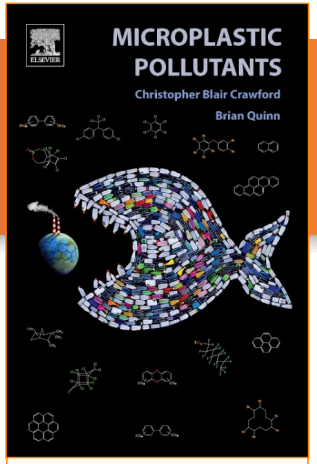

Microplastic Pollutants

Christopher Crawford
Brian Quinn Lecturer, University of the West of Scotland, UK

ELSEVIER

Introducing the growing problem of microplastic pollution in the aquatic environment, this timely full-color illustrated multidisciplinary book is dedicated exclusively to the subject of microplastics and highlights the very recent realization that microplastics may transport toxic chemicals into food chains around the world.

ISBN: 978-0-12-809406-8

PUB DATE: December 2016

FORMAT: Paperback

PAGES: c. 312

TRIM: 6w x 9h

AUDIENCE

Environmental scientists, ecotoxicologists, ecologists, environmental managers, fisheries, water suppliers, waste water treatment, pollution, marine biologists, environmental chemists, industry, engineers, citizens ,media and policy makers

KEY FEATURES

- A detailed chronological history of plastic materials from their creation until the present day
- Extensive review and discussion of the existing literature on the interactions of microplastics with chemical pollutants and their effects on aquatic life
- Explanation and provision of the techniques used for the detection, separation and identification of microplastics
- Detailed multidisciplinary information on the way in which plastic materials and microplastics behave in the aquatic environment
- The provision of extensive multidisciplinary reference data relating to plastic materials and microplastics

DESCRIPTION

Microplastic Pollutants introduces the reader to the growing problem of microplastic pollution in the aquatic environment and is the first ever book dedicated exclusively to the subject of microplastics. Importantly, this timely full-colour illustrated multidisciplinary book highlights the very recent realization that microplastics may transport toxic chemicals into food chains around the world.

Microplastic pollutants is currently an important topic in both industry and academia, as well as among legislative bodies, and research in this area is gaining considerable attention from both the worldwide media and scientific community on a rapidly increasing scale.

Ultimately, this book provides an excellent source of reference and information on microplastics for scientists, engineers, students, industry, policy makers and citizens alike.

PHYSICAL SCIENCES & MATH

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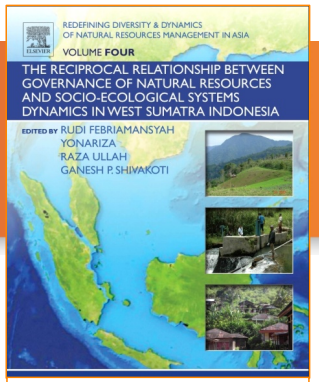

Redefining Diversity and Dynamics of Natural Resources Management in Asia, Volume 4

The Reciprocal Relationship between Governance of Natural Resources and Socio-Ecological Systems Dynamics in West Sumatra Indonesia

Edited by: ***Ganesh Shivakoti*** Adjunct Professor, Agricultural and Natural resources Management, Asian Institute of Technology; ***Rudi Febriamansyah*** Director, Postgraduate Program, Andalas University, Padang, Indonesia; ***Yonariza Yonariza*** ; ***Raza Ullah*** Assistant Professor, Department of Agricultural and Applied Economics, University of Agriculture Peshawar-Pakistan

This insightful volume uses a helpful case-study approach to examine how a war-torn, yet actively industrializing region, like West Sumatra addresses natural resource management and sustainability issues

ISBN: 978-0-12-805451-2

PUB DATE: October 2016

FORMAT: Paperback

PAGES: c. 250

TRIM: 7.5w x 9.25h

AUDIENCE

Environmental scientists, ecologists, NGOs, environmental economists, environmental consultants, government executives, development practitioners

KEY FEATURES

- Features contributions from mostly local authors
- Explores an area experiencing considerable environmental challenges, including impacts on biodiversity and local economies
- Includes chapters on forests and illegal logging, land resources, water resources, protected lands, and biodiversity
- Examines case studies as a basis for policy makers and environmental practitioners to recognize the potential of West Sumatra's natural resources for ecological, social and economic development, food security, poverty alleviation, and natural resource sustainability

DESCRIPTION

Redefining Diversity and Dynamics of Natural Resources Management in Southeast Asia, Volumes 1-4 brings together scientific research and policy issues across various topographical area in Asia to provide a comprehensive overview of the issues facing the region.

The Reciprocal Relationship between Governance of Natural Resources and Socio-Ecological Systems Dynamics in West Sumatra Indonesia, Volume 4, covers a diverse range of issues related to natural resources and its management in West Sumatra Indonesia. The chapters cover issues with livelihood dependence, rights and access to natural resources, natural resources management practices, socio-ecological systems, and governance.

Shared experiences and lessons learned from the case studies examined serve as a basis for policy makers and environmental practitioners to recognize the potential of West Sumatra's natural resources for ecological, social and economic development, food security, poverty alleviation, and natural resource sustainability.

PHYSICAL SCIENCES & MATH

Please contact your Elsevier Sales or Customer Service Representative

ISBN: 978-0-12-805452-9

PUB DATE: September 2016

FORMAT: Paperback

PAGES: c. 270

TRIM: 7.5w x 9.25h

AUDIENCE

Environmental scientists, ecologists, NGOs, environmental economists, environmental consultants, government executives, development practitioners

Redefining Diversity and Dynamics of Natural Resources Management in Asia, Volume 3

Natural Resource Dynamics and Social Ecological Systems in Central Vietnam: Development, Resource Changes and Conservation Issues

Edited by: ***Ganesh Shivakoti*** Adjunct Professor, Agricultural and Natural resources Management, Asian Institute of Technology; ***Tran Nam Thang*** Vice-Dean of Forestry, Hue University of Agriculture and Forestry; ***Ngo Tri Dung*** Lecturer, Hue University of Agriculture and Forestry; ***David Hulse*** Ford Foundation, Indonesia; ***Shubhechchha Sharma*** Researcher, Hariban Program, WWF Nepal

This insightful volume uses a helpful case study approach to examine how an actively industrializing region, addresses natural resource management and sustainability issues

KEY FEATURES

- Provides land management practitioners and policy makers with the tools to deal with natural resource issues in a developing nation
- Reviews the impacts of the first PES, Payment for Ecosystem Services, policies upon which were based similar programs in Latin America
- Reviews the current and potential future land management of Central Vietnam, giving an eye to solutions for any nation impacted by war, trying to balance development with conservation efforts and provide their populations with sustainable economic futures
- Examines Central Vietnam holistically, from management and use to policy and data-driven solutions

DESCRIPTION

Redefining Diversity and Dynamics of Natural Resources Management in Southeast Asia, Volumes 1-4 brings together scientific research and policy issues across various topographical areas in Asia to provide a comprehensive overview of the issues facing this region.

Natural Resource Dynamics and Social Ecological Systems in Central Vietnam: Development, Resource Changes and Conservation Issues, Volume 3, focuses on the issues specific to Central Vietnam that are also found globally. War had significantly impacted both land and water resources, from which it had to recover environmentally.

Additionally, this is an area with growing urbanization pressures and industrial development, both of which are known for stretching resources beyond their limits. The introduction of several hydro-electric power projects have even further eroded the local agricultural and forest ecosystems. This volume looks at Central Vietnam holistically, from management and use to policy and data-driven solutions.

PHYSICAL SCIENCES & MATH

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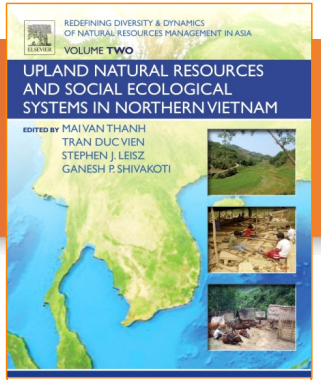

Redefining Diversity and Dynamics of Natural Resources Management in Asia, Volume 2

Upland Natural Resources and Social Ecological Systems in Northern Vietnam

Edited by: ***Ganesh Shivakoti*** Adjunct Professor, Agricultural and Natural resources Management, Asian Institute of Technology; ***Mai Van Thanh*** ; ***Tran Duc Vien*** Director, Center for Agricultural Research and Ecological Studies, Hanoi University; ***Steven Leisz*** Associate Professor, Colorado State University

ELSEVIER

Using international case studies and based on the concept that participatory local involvement is essential for success, this interdisciplinary volume examines topics such as planning for climate change, managing forestland, alleviating food shortages, living with biodiversity, and assessing development projects and policies

ISBN: 978-0-12-805453-6

PUB DATE: September 2016

FORMAT: Paperback

PAGES: c. 270

TRIM: 7.5w x 9.25h

AUDIENCE

Environmental scientists, ecologists, NGOs, environmental economists, environmental consultants, government executives, development practitioners

KEY FEATURES

- Provides a multi-disciplinary case study into a complex environmental situation involving government institutions, planning, and practices, using northern Vietnam as the focus
- Covers the issues of natural resource management and biodiversity in depth using international case studies
- Provides examples of measuring the potential climate change impacts on food security in agricultural regions
- Examines topics such as planning for climate change, managing forestland, alleviating food shortages, living with biodiversity, and assessing development projects and policies

DESCRIPTION

Redefining Diversity and Dynamics of Natural Resources Management in Southeast Asia, Volumes 1-4 brings together scientific research and policy issues across various topographical areas in Asia to provide a comprehensive overview of the issues facing the region.

Upland Natural Resources and Social Ecological Systems in Northern Vietnam, Volume 2, provides chapters on natural resource management in northern Vietnam tied together by the concept that participatory local involvement is needed in all aspects of natural resource management. The volume examines planning for climate change, managing forestland, alleviating food shortages, living with biodiversity, and assessing the development projects and policies being implemented. Without the involvement of local communities, households, and ultimately individual people, the needed action will not be effectively taken.

Upland Natural Resources and Social Ecological Systems in Northern Vietnam, Volume 2, goes beyond just Northern Vietnam to address the issue of transboundary natural resource management—an issue that Vietnam is dealing with in its relations with northern neighbor, China, and western neighbor, Laos—as well as the transboundary water governance between Pakistan and India in south Asia, with the hope that some of the lessons learned may one day be useful in the case of Vietnam and its neighbors.

PHYSICAL SCIENCES & MATH

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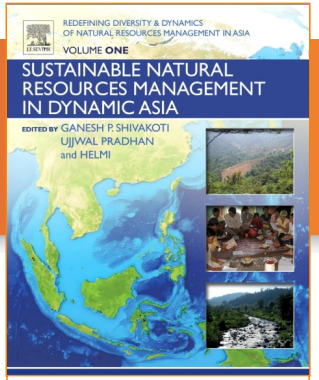


Redefining Diversity and Dynamics of Natural Resources Management in Asia, Volume 1

Sustainable Natural Resources Management in Dynamic Asia

Edited by: ***Ganesh Shivakoti*** Adjunct Professor, Agricultural and Natural resources Management, Asian Institute of Technology
Ujjwal Pradhan Regional Coordinator, World Agroforestry Centre
Helmi Helmi Professor, Andalas University, Padang, West Sumatra

ISBN: 978-0-12-805454-3
PUB DATE: September 2016
FORMAT: Paperback
PAGES: c. 410
TRIM: 7.5w x 9.25h

AUDIENCE

Environmental scientists, ecologists, NGOs, environmental economists, environmental consultants, government executives

Regional experts on Southeast Asia examine sustainability issues across the region, covering issues such as deforestation, forest and ecosystem degradation, regional food security, biodiversity loss, conflicts over natural resources, water management issues, and impacts on local communities

KEY FEATURES

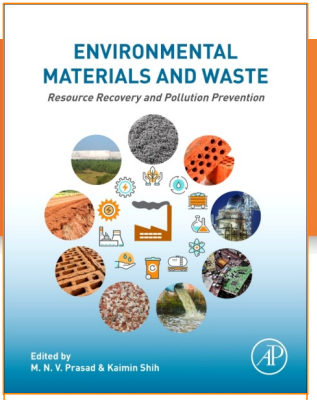
- Features case studies that cover issues such as rising levels of deforestation, forest degradation, regional food security, ecosystem degradation, biodiversity loss, conflicts over natural resource use, water management issues, and impacts on local communities
- Includes contributions from local researchers who are dealing with these issues first hand, and on a daily basis
- Includes a comparative review on REDD+ implementation in different communities
- Focuses on sustainability issues across the region

DESCRIPTION

Redefining Diversity and Dynamics of Natural Resources Management in Asia, Volumes 1-4 brings together scientific research and policy issues across various topographical area in Asia to provide a comprehensive overview of the issues facing the region.

Sustainable Natural Resources Management in Dynamic Southeast Asia, Volume 1, pulls together regional experts in the field to look specifically at sustainability issues across the region, to see what has been implemented, what the impacts have been, and what other options are available. In the race to be a developed region, many Southeast Asian countries have foregone natural resources through haphazard use. As a result, the people are faced with numerous environmental challenges, particularly deforestation and forest degradation, biodiversity loss and ecosystem degradation, reduction in soil quality, and decreases in the quantity of available water.

Community-based forest management is the involvement of local communities in the protection, conservation and management of public forests to prevent degradation through sustainable practices while still responding to the basic social and economic needs of local populations. When the people who depend on forest resources for their livelihoods are jointly responsible for managing and protecting them, they tend to do so in a more sustainable manner by focusing on the long-term benefits rather than the immediate short-term gains. However, when tenure rights are weak, unclear, or insecure, or offer limited benefits, people are incited in extracting more immediate benefits, resulting in suboptimal forest management and the reduction of carbon stocks.



Environmental Materials and Waste

Resource Recovery and Pollution Prevention

Edited by: ***M.N.V Prasad*** Professor, Department of Plant Sciences, University of Hyderabad, India
Kaimin Shih Associate Professor, Department of Civil Engineering, University of Hong Kong, Hong Kong, China

This comprehensive book provides a multidisciplinary audience foundational knowledge of the naturally resulting by-products from industrial production, helping to facilitate new approaches to reducing their negative impact on the environment and highlighting the necessity of environmental sustainability to combat the effects of global warming and growing populations and economies

ISBN: 978-0-12-803837-6
PUB DATE: May 2016
FORMAT: Paperback
PAGES: c. 740
TRIM: 6w x 9h

AUDIENCE
Environmental Scientists, Material Scientists, Chemists, Mineral Geologists, Entrepreneurs

KEY FEATURES

- Presents a state-of-the-art guide to environmental sustainability
- Provides an overview of the field highlighting recent and emerging issues in environmental resource recovery that cover a wide array of by-products for remanufacture potential
- Details a multidisciplinary approach to fully realize the number of by-products which can be remanufactured, providing the foundation needed across disciplines to tackle these global issues

DESCRIPTION

Environmental Materials and Waste: Resource Recovery and Pollution Prevention contains the latest information on environmental sustainability as a wide variety of natural resources are increasingly being exploited to meet the demands of a worldwide growing population and economy.

These raw materials cannot, or can only partially, be substituted by renewable resources within the next few decades. As such, the efficient recovery and processing of mineral and energy resources, as well as recycling such resources, is now of significant importance.

The book takes a multidisciplinary approach to fully realize the number of by-products which can be remanufactured, providing the foundation needed across disciplines to tackle this issue. As awareness and opportunities to recover valuable resources from process and bleed streams is gaining interest, sustainable recovery of environmental materials, including wastewater, offers tremendous opportunity to combine profitable and sustainable production.

PHYSICAL SCIENCES & MATH
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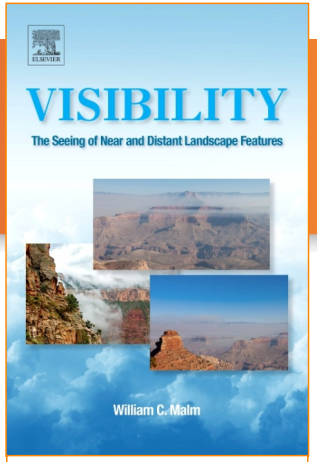

Visibility

The Seeing of Near and Distant Landscape Features

William Malm Research Scientist & Scholar, National Park Service - Colorado State University, Fort Collins, CO, USA

ELSEVIER

Written by a pioneer in this field, this highly illustrated new work on visibility concepts provides new tools and the latest research on measuring and quantifying air quality as it relates to scenic landscape features, including discussions of perception questions, visibility metrics, and the history of visibility regulatory development

ISBN: 978-0-12-804450-6

PUB DATE: April 2016

FORMAT: Paperback

PAGES: c. 330

TRIM: 7.5w x 9.25h

AUDIENCE

Environmental Scientists, Air management professionals, Environmental Protection professionals, Landscape Preservation professionals, policy makers

KEY FEATURES

- Heavily illustrated to convey the concepts introduced, then followed by more mathematical coverage of the topic
- Covers all aspects of visibility, including science, social, and regulatory
- Expands traditional US only coverage of visibility and scenic to global

DESCRIPTION

Visibility: The Seeing of Near and Distant Landscape Features reviews the science of visibility from how to measure it quantitatively to its impacts by one of the foremost experts in the field. Carefully designed pedagogy allows a diversity of readers, from regulators to researchers to use this book to further their understanding of the field.

Topics covered include the interaction of light with the atmosphere and aerosols, the transfer of light through the atmosphere especially as it relates to non-uniform haze layers, perception questions, including visibility metrics, image processing techniques for purposes of visually displaying effects of haze on scenic landscapes, visibility monitoring techniques, and the history of visibility regulatory development.

PHYSICAL SCIENCES & MATH

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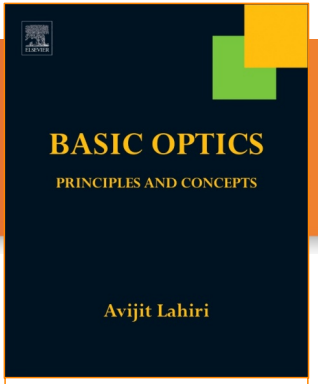

Basic Optics

Principles and Concepts

Avijit Lahiri Department of Physics, Vidyasagar Metropolitan College, Kolkata, India

ELSEVIER

Featuring the basic concepts in metamaterials and in Fourier, statistical, quantum, and nonlinear optics, this comprehensive reference offers a thorough, detailed, and lucid presentation of a range of topics from the field of optics

ISBN: 978-0-12-805357-7

PUB DATE: August 2016

FORMAT: Paperback

PAGES: c. 1000

TRIM: 7.5w x 9.25h

AUDIENCE

Graduate students in physics, chemistry, materials science and biology with optics as either a general or a special subject; researchers in industry and teachers at university in optics, optical engineering, optoelectronics, and photonics

KEY FEATURES

- Provides extensive and thoroughly exhaustive coverage of classical and modern optics
- Offers a lucid presentation in understandable language, rendering the abstract and difficult concepts of physics in an easy, accessible way
- Develops all concepts from elementary levels to advanced stages
- Includes a sequential description of all needed mathematical tools
- Relates fundamental concepts to areas of current research interest

DESCRIPTION

Basic Optics: Principles and Concepts addresses in great detail the basic principles of the science of optics, and their related concepts. The book provides a lucid and coherent presentation of an extensive range of concepts from the field of optics, which is of central relevance to several broad areas of science, including physics, chemistry, and biology.

With its extensive range of discourse, the book's content arms scientists and students with knowledge of the essential concepts of classical and modern optics. It can be used as a reference book and also as a supplementary text by students at college and university levels and will, at the same time, be of considerable use to researchers and teachers.

The book is composed of nine chapters and includes a great deal of material not covered in many of the more well-known textbooks on the subject. The science of optics has undergone major changes in the last fifty years because of developments in the areas of the optics of metamaterials, Fourier optics, statistical optics, quantum optics, and nonlinear optics, all of which find their place in this book, with a clear presentation of their basic principles. Even the more traditional areas of ray optics and wave optics are elaborated within the framework of electromagnetic theory, at a level more fundamental than what one finds in many of the currently available textbooks. Thus, the eikonal approximation leading to ray optics, the Lagrangian and Hamiltonian formulations of ray optics, the quantum theoretic interpretation of interference, the vector and dyadic diffraction theories, the geometrical theory of diffraction, and similar other topics of basic relevance are presented in clear terms.

The presentation is lucid and elegant, capturing the essential magic and charm of physics. All this taken together makes the book a unique text, of major contemporary relevance, in the field of optics. ***Avijit Lahiri*** is a well-known researcher, teacher, and author, with publications in several areas of physics, and with a broad range of current interests, including physics and the philosophy of science.

PHYSICS

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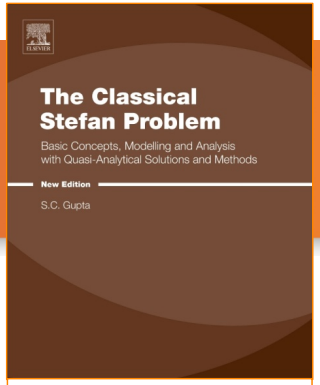

The Classical Stefan Problem, 2e

Basic Concepts, Modelling and Analysis with Quasi-Analytical Solutions and Methods

S.C. Gupta Department of Mathematics, Indian Institute of Science, Bangalore, India

ISBN: 978-0-444-63581-5

PREVIOUS EDITION ISBN: 9780444510860

PUB DATE: May 2017

FORMAT: Paperback

PAGES: c. 538

TRIM: 7.5w x 9.25h

AUDIENCE

Researchers in academia and industry in physics, mathematical physics, thermodynamics, and metallurgy

Fully-revised reference that provides theoretical concepts, modeling, and analysis of the physical, mathematical, thermodynamical, and metallurgical properties of Stefan problems

KEY FEATURES

- Provides both the phenomenology and mathematics of Stefan problems
- Bridges physics and mathematics in a concrete and readable manner
- Presents well-organized chapters that start with proper definitions followed by explanations and references for further reading
- Includes both numerical and quasi-analytical solutions and methods of classical Stefan and Stefan-like problems

DESCRIPTION

The Classical Stefan Problem: Basic Concepts, Modelling and Analysis with Quasi-Analytical Solutions and Methods, Second Edition provides the fundamental theory, concepts, modeling, and analysis of the physical, mathematical, thermodynamical, and metallurgical properties of classical Stefan and Stefan-like problems as applied to heat transfer problems with phase-changes, such as from liquid to solid.

This self-contained work reports and derives the results from tensor analysis, differential geometry, non-equilibrium thermodynamics, physics, and functional analysis, and is thoroughly enriched with many appropriate references for in-depth background reading on theorems.

Each chapter in this fully revised and updated edition begins with basic concepts and objectives, also including direction on how the subject matter was developed. It contains more than 150 pages of new material on quasi-analytical solutions and methods of classical Stefan and Stefan-like problems.

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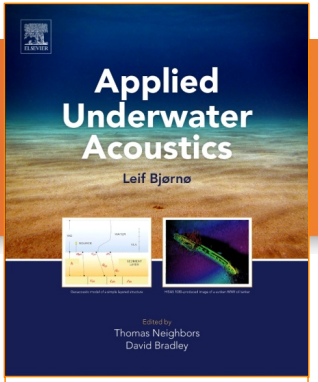

Applied Underwater Acoustics

Leif Bjørnø
Edited by: ***Thomas Herbert Neighbors*** Leidos Corporation, Bellevue, WA, USA (Retired)
David Bradley Applied Research Laboratory, The Pennsylvania State University, State College, PA, USA

ISBN: 978-0-12-811240-3
PUB DATE: January 2017
FORMAT: Paperback
PAGES: c. 942
TRIM: 7.5w x 9.25h

AUDIENCE
Graduate and postgraduate students, physicists, scientists and engineers in acoustics

Comprehensive reference that provides the scientific physical foundations for rapidly assimilating the essential underwater acoustic knowledge base for daily research and analysis

KEY FEATURES

- Provides a complete and up-to-date treatment of all major subjects of underwater acoustics
- Presents chapters written by recognized experts in their individual field
- Covers the fundamental knowledge scientists and engineers need to solve problems in underwater acoustics
- Illuminates, in shorter sub-chapters, the modern applications of underwater acoustics that are described in worked examples
- Demands no prior knowledge of underwater acoustics, and the physical principles and mathematics are designed to be readily understood by scientists, engineers, and graduate students of underwater acoustics
- Includes a comprehensive list of literature references for each chapter

DESCRIPTION

Applied Underwater Acoustics meets the needs of scientists and engineers working in underwater acoustics and graduate students solving problems in, and preparing theses on, topics in underwater acoustics. The book is structured to provide the basis for rapidly assimilating the essential underwater acoustic knowledge base for practical application to daily research and analysis.

Each chapter of the book is self-supporting and focuses on a single topic and its relation to underwater acoustics. The chapters start with a brief description of the topic's physical background, necessary definitions, and a short description of the applications, along with a roadmap to the chapter. The subtopics covered within individual subchapters include most frequently used equations that describe the topic. Equations are not derived, rather, assumptions behind equations and limitations on the applications of each equation are emphasized. Figures, tables, and illustrations related to the sub-topic are presented in an easy-to-use manner, and examples on the use of the equations, including appropriate figures and tables are also included.

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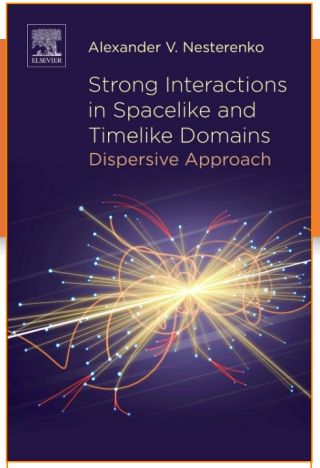

Strong Interactions in Spacelike and Timelike Domains

Dispersive Approach

Alexander V. Nesterenko Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research, Dubna, Russia

ISBN: 978-0-12-803439-2

PUB DATE: November 2016

FORMAT: Paperback

PAGES: c. 204

TRIM: 6w x 9h

AUDIENCE

Graduate and postgraduate students, university lecturers, and researchers working in the fields of high energy physics, particle physics, quantum chromodynamics, and mathematical physics

A comprehensive reference that provides a greater understanding of the peculiarities of the description of the strong interaction in the timelike domain

KEY FEATURES

- Covers the topics that play an essential role in contemporary particle physics and future collider projects
- Applicable for self-education alongside standard textbooks
- Makes the subject easily accessible without the need of an extensive theoretical background

DESCRIPTION

Strong Interactions in Spacelike and Timelike Domains: Dispersive Approach provides the theoretical basis for the description of the strong interactions in the spacelike and timelike domains. The book primarily focuses on the hadronic vacuum polarization function, R-ratio of electron-positron annihilation into hadrons, and the Adler function, which govern a variety of the strong interaction processes at various energy scales. Specifically, the book presents the essentials of the dispersion relations for these functions, recaps their perturbative calculation, and delineates the dispersively improved perturbation theory. The book also elucidates the peculiarities of the continuation of the spacelike perturbative results into the timelike domain, which is indispensable for the studies of electron-positron annihilation into hadrons and the related processes.

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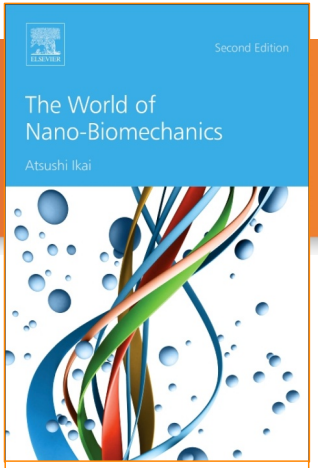

The World of Nano-Biomechanics, 2e

Atsushi Ikai Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, Yokohama, Japan

ELSEVIER

Updated reference that provides the physical principles of molecular force measurement using scanning force microscopy to study the mechanical nature of biological structures

ISBN: 978-0-444-63686-7

PREVIOUS EDITION ISBN: 9780444527776

PUB DATE: December 2016

FORMAT: Paperback

PAGES: c. 336

TRIM: 6w x 9h

AUDIENCE

Graduate students and researchers in biophysics, biochemistry, and molecular and cell biology; and biomedical engineers

KEY FEATURES

- Fully revised and expanded new edition based on the latest research and developments in the field
- Explains the basic physical concepts and mathematics of elementary mechanics needed to understand and perform experimental work
- Presents recent developments of force-based biosensors
- Includes novel applications of nano-biomechanics to the medical field

DESCRIPTION

The World of Nano-Biomechanics, Second Edition, focuses on the remarkable progress in the application of force spectroscopy to molecular and cellular biology that has occurred since the book's first edition in 2008. The initial excitement of seeing and touching a single molecule of protein/DNA is now culminating in the development of various ways to manipulate molecules and cells almost at our fingertips, enabling live cell operations.

Topics include the development of molecular biosensors, mechanical diagnosis, cellular-level wound healing, and a look into the advances that have been made in our understanding of the significance of mechanical rigidity/flexibility of protein/DNA structure for the manifestation of biological activities.

The book begins with a summary of the results of basic mechanics to help readers who are unfamiliar with engineering mechanics. Then, representative results obtained on biological macromolecules and structures, such as proteins, DNA, RNA, polysaccharides, lipid membranes, sub-cellular organelles, and live cells are discussed. New to this second edition are recent developments in two important applications, i.e., high-resolution mechanical biosensors and the use of cell mechanics for medical diagnosis.

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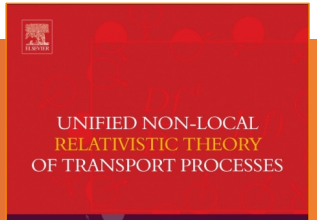

Unified Non-Local Relativistic Theory of Transport Processes

Boris V. Alexeev Physics Department, Moscow Lomonosov University of Fine Chemical Technologies, Moscow, Russia

ELSEVIER

Comprehensive reference providing the unified non-local relativistic theory of transport processes from the structures of the atom to the evolution of the universe

ISBN: 978-0-444-63854-0

PUB DATE: August 2016

FORMAT: Paperback

PAGES: c. 456

TRIM: 7.5w x 9.25h

AUDIENCE

Theoretical and applied physicists, astrophysicists, astronomers, cosmologists, engineers

KEY FEATURES

- Comprehensive collection of non-local relativistic theory with examples that could previously only be found scattered in the literature
- Provides applications in quantum non-local relativistic hydrodynamics, quantum solitons in solid matter, and plasmas
- Uses generalized non-local kinetic theory as a highly effective tool for solving many physical problems beyond classical physics
- Presents non-local relativistic physics in many related problems of hydrodynamics, gravity, nonlinear optics, time quantization, and applied mathematics
- Includes concrete mathematical problems that are physically consistent and can be solved and studied both analytically and numerically

DESCRIPTION

Unified Non-Local Relativistic Theory of Transport Processes highlights the most significant features of non-local relativistic theory, which is a highly effective tool for solving many physical problems in areas where the classical local theory runs into difficulties. The book provides the fundamental science behind new non-local physics – generalized for relativistic cases and applied in a range of scales – from transport phenomena in massless physical systems to unified theory of dissipative structures.

The book complements the author's previous monograph on *Unified Non-Local Theory of Transport Processes* (Elsevier, 2015), which is mainly devoted to non-relativistic non-local physics. Nevertheless, the theory as handled in this new work is outlined independently so the book can be studied on its own.

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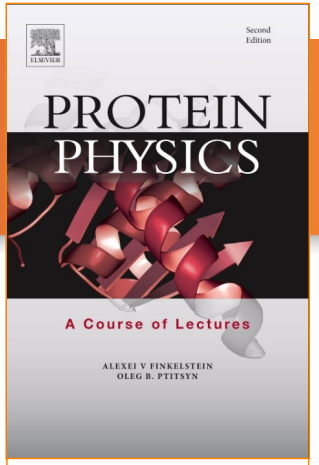

Protein Physics, 2e

A Course of Lectures

Alexei V. Finkelstein Institute of Protein Research, Russian Academy of Sciences, Moscow, Russia
Oleg Ptitsyn Late of Institute of Protein Research, Russian Academy of Sciences Moscow Region, Russian Federation

Fully revised, updated, and comprehensive reference on the fundamental physics behind protein structures and functions

ISBN: 978-0-12-809676-5
PREVIOUS EDITION ISBN: 978-0-12-390879-7
PUB DATE: June 2016
FORMAT: Paperback
PAGES: c. 508
TRIM: 6w x 9h

AUDIENCE

Graduate and advanced undergraduate students, researchers and scientists in biophysics, physics, biochemistry, biology, biotechnology, and chemistry

KEY FEATURES

- Fully revised and expanded new edition based on the latest research developments in protein physics
- Written by the world's top expert in the field
- Deals with fibrous, membrane, and water-soluble globular proteins, in both their native and denatured states
- Summarizes, in a systematic form, the results of several decades of worldwide fundamental research on protein physics and their structure and folding
- Examines experimental data on protein structure in the post-genome era

DESCRIPTION

Protein Physics: A Course of Lectures covers the most general problems of protein structure, folding and function. It describes key experimental facts and introduces concepts and theories, dealing with fibrous, membrane, and water-soluble globular proteins, in both their native and denatured states.

The book systematically summarizes and presents the results of several decades of worldwide fundamental research on protein physics, structure, and folding, describing many physical models that help readers make estimates and predictions of physical processes that occur in proteins.

New to this revised edition is the inclusion of novel information on amyloid aggregation, natively disordered proteins, protein folding *in vivo*, protein motors, misfolding, chameleon proteins, advances in protein engineering & design, and advances in the modeling of protein folding.

Further, the book provides problems with solutions, many new and updated references, and physical and mathematical appendices. In addition, new figures (including stereo drawings, with a special appendix showing how to use them) are added, making this an ideal resource for graduate and advanced undergraduate students and researchers in academia in the fields of biophysics, physics, biochemistry, biologists, biotechnology, and chemistry.

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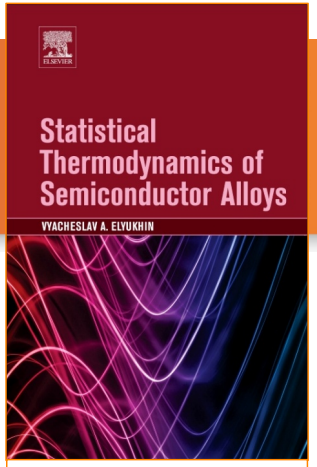

Statistical Thermodynamics of Semiconductor Alloys

Vyacheslav A Elyukhin The Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV-IPN), Mexico City, Mexico

ELSEVIER

This comprehensive reference outlines the fundamental physics that is indispensable for a deep understanding of the thermodynamic properties and characteristics of crystalline semiconductor alloys, using the methods of statistical thermodynamics

ISBN: 978-0-12-803987-8

PUB DATE: January 2016

FORMAT: Paperback

PAGES: c. 212

TRIM: 6w x 9h

AUDIENCE

Postgraduate students and researchers in academia and industry working on solid state physics and semiconductors

KEY FEATURES

- Includes a complete and detailed consideration of the cluster variation method (CVM)
- Provides descriptions of spinodal decomposition ranges of crystalline alloys
- Presents a representation of thermodynamics characteristics and properties as a miscibility gap by using the different approximations of CVM
- Covers a unique, detailed consideration of the valence force field model with the complete collection of formulas

DESCRIPTION

Statistical Thermodynamics of Semiconductor Alloys is the consideration of thermodynamic properties and characteristics of crystalline semiconductor alloys by the methods of statistical thermodynamics. The topics presented in this book make it possible to solve such problems as calculation of a miscibility gap, a spinodal decomposition range, a short-range order, deformations of crystal structure, and description of the order-disorder transitions.

Semiconductor alloys, including doped elemental semiconductors are the basic materials of solid-state electronics. Their structural stability and other characteristics are key to determining the reliability and lifetime of devices, making the investigation of stability conditions an important part of semiconductor physics, materials science, and engineering. This book is a guide to predicting and studying the thermodynamic properties and characteristics of the basic materials of solid-state electronics.

PHYSICS

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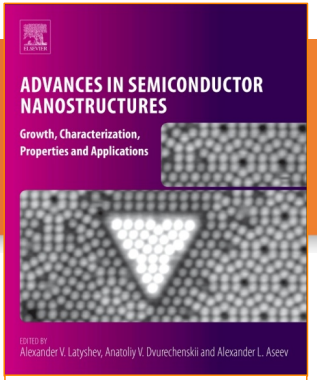

Advances in Semiconductor Nanostructures

Growth, Characterization, Properties and Applications

Edited by: ***Alexander V. Latyshev*** Rzhanov Institute of Semiconductor Physics, Russian Academy of Science, Siberian Branch, Novosibirsk, Russia
Anatoliy V. Dvurechenskii Rzhanov Institute of Semiconductor Physics, Russian Academy of Science, Siberian Branch, Novosibirsk, Russia
Alexander L. Aseev Russian Academy of Science, Siberian Branch, Novosibirsk, Russia

ELSEVIER

Comprehensive reference on physical phenomena and properties of semiconductor nanostructures for researchers, scientists, and post-graduate students in semiconductor physics

ISBN: 978-0-12-810512-2
PUB DATE: November 2016
FORMAT: Paperback
PAGES: c. 528
TRIM: 7.5w x 9.25h

AUDIENCE

Researchers and scientists in academia, and postgraduate students in semiconductor physics, condensed matter physics, physics of nanostructures

KEY FEATURES

- Presents a comprehensive reference on the novel physical phenomena and properties of semiconductor nanostructures
- Covers recent developments in the field from all over the world
- Provides an International approach, as chapters are based on results obtained in collaboration with research groups from Russia, Germany, France, England, Japan, Holland, USA, Belgium, China, Israel, Brazil, and former Soviet Union countries

DESCRIPTION

Advances in Semiconductor Nanostructures: Growth, Characterization, Properties and Applications focuses on the physical aspects of semiconductor nanostructures, including growth and processing of semiconductor nanostructures by molecular-beam epitaxy, ion-beam implantation/synthesis, pulsed laser action on all types of III–V, IV, and II–VI semiconductors, nanofabrication by bottom-up and top-down approaches, real-time observations using in situ UHV-REM and high-resolution TEM of atomic structure of quantum well, nanowires, quantum dots, and heterostructures and their electrical, optical, magnetic, and spin phenomena.

The very comprehensive nature of the book makes it an indispensable source of information for researchers, scientists, and post-graduate students in the field of semiconductor physics, condensed matter physics, and physics of nanostructures, helping them in their daily research.

PHYSICS

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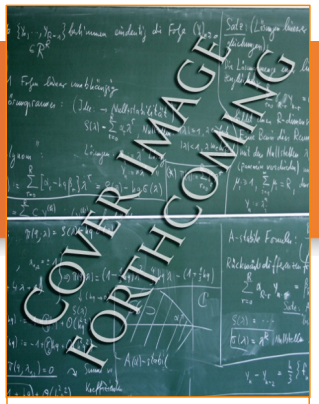

Phononics

Interface Transmission Tutorial Book Series

Leonard Dobrzynski Senior Investigator, National Center for Scientific Research, Lille University, France

ISBN: 978-0-12-809948-3

PUB DATE: June 2017

FORMAT: Paperback

PAGES: c. 400

TRIM: 6w x 9h

AUDIENCE

Students, researchers and scientists in surface science, condensed matter physics, optical physics, and materials science

Short, focused work on the modern physics of phononics through the use of composite systems

A Volume in the Interface Transmission Tutorial Book Series.

KEY FEATURES

- Offers a unique approach on phononics from the interfacial transmission point-of-view
- Teaches the modern physics of interface transmission, in particular, phononics through composite systems
- Authored and edited by world-leading experts on Interface Transmission

DESCRIPTION

*Phononics: Interface Transmission Tutorial Book Series*provides an investigation of modern systems that includes a discrete matrix description. Classical continuous systems relying on the use of differential equations are recalled and shown to generally have a specific limit on their corresponding modern matrix formulation..

A detailed description of the mathematical languages that enables readers to find the composite system linear transmission properties is provided in the appendix. The physical model is described with exacting detail, and the bibliography is built to cite—in chronological order—all the scientists that have contributed to interface transmission in composite systems over many years.

Each volume is written with the aim of providing an up-to-date and concise summary of the present knowledge of interface transmission science. They foster the exchange of ideas among scientists interested in different aspects of interface transmission, and are designed as a text, a reference, and a source.

The book serves as an introduction to advanced graduate students, researchers, and scientists with little acquaintance on the subject, and is also useful to keep specialists informed on general progress in the field.

PHYSICS

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Advances In Atomic, Molecular, and Optical Physics, Vol 66

Advances in Atomic, Molecular, and Optical Physics

Edited by: ***Susanne F. Yelin*** Physics Department, University of Connecticut, Storrs, CT, USA
Ennio Arimondo Universita di Pisa, Italy
Chun C. Lin Physics Department, University of Wisconsin, Madison, WI, USA

This book provides a collection of timely articles by distinguished experts who offer relevant review material and detailed descriptions of important developments in atomic, molecular, and optical physics

ISBN: 978-0-12-812081-1
PUB DATE: June 2017
FORMAT: Hardback
PAGES: c. 500
TRIM: 6w x 9h

AUDIENCE
Physicists and researchers in related applied areas

KEY FEATURES

- Presents the work of international experts in the field
- Comprehensive articles compile recent developments in a field that is experiencing rapid growth, with new experimental and theoretical techniques emerging
- Ideal for users interested in optics, excitons, plasmas, and thermodynamics
- Topics covered include atmospheric science, astrophysics, surface physics, and laser physics, amongst others

DESCRIPTION

Advances in Atomic, Molecular, and Optical Physics provides a comprehensive compilation of recent developments in a field that is in a state of rapid growth, as new experimental and theoretical techniques are used on many problems, both old and new.

Topics covered include related applied areas, such as atmospheric science, astrophysics, surface physics, and laser physics, with timely articles written by distinguished experts that contain relevant review material and detailed descriptions of important developments in the field.

SERIALS
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Advances in Imaging and Electron Physics, Vol 200

Advances in Imaging and Electron Physics

Edited by: ***Peter W. Hawkes*** Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

Cutting-edge articles on the latest developments in all areas of microscopy, image science, and many related subjects in electron physics

ISBN: 978-0-12-812090-3

PUB DATE: June 2017

FORMAT: Hardback

PAGES: c. 222

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general

KEY FEATURES

- Contains contributions from leading authorities on the subject matter
- Informs and updates on all the latest developments in the field of imaging and electron physics
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, Advances in Electronics and Electron Physics and Advances in Optical and Electron Microscopy.

The series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

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Progress in Optics, Vol 62

Progress in Optics

Edited by: ***Taco Visser*** Department of Physics and Astronomy, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

ISBN: 978-0-12-811999-0

PUB DATE: April 2017

FORMAT: Hardback

PAGES: c. 400

TRIM: 6w x 9h

AUDIENCE

Researchers, professors, postgraduate students, Academic and corporate libraries in the field of optics

Provides eminently readable review articles in the field of optics, with both fundamental and applied topics addressed

KEY FEATURES

- Contains comprehensive, in-depth reviews
- Includes contributions from leading authorities
- Informs and updates on all the latest developments in the field
- Presents timely and state-of-the-art reviews

DESCRIPTION

Progress in Optics, Volume 62, an ongoing series, contains more than 300 review articles by distinguished research workers that have become permanent records for many important developments, helping optical scientists and optical engineers stay informed in their respective fields.

The many chapters that have appeared over the years in different volumes have become standard references in scientific articles, mainly because of their high quality and detailed account on the state-of-the-art of the topics they describe.

SERIALS

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Advances in Imaging and Electron Physics, Vol 199

Advances in Imaging and Electron Physics

Peter W. Hawkes Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

Cutting-edge articles on the latest developments in all areas of microscopy, image science, and many related subjects in electron physics

ISBN: 978-0-12-812091-0

PUB DATE: February 2017

FORMAT: Hardback

PAGES: c. 222

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general

KEY FEATURES

- Contains contributions from leading authorities on the subject matter
- Informs and updates on all the latest developments in the field of imaging and electron physics
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy.*

The series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

SERIALS

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Semiconductors and Semimetals, Vol 96

III-Nitride Semiconductor Optoelectronics

Edited by: ***Zetian Mi*** MCGill University, Montreal, Canada
Chennupati Jagadish Department of Electronic Materials Engineering, Australian National University, Canberra, Australia

ISBN: 978-0-12-809584-3

PUB DATE: January 2017

FORMAT: Hardback

TRIM: 6w x 9h

AUDIENCE

Students and researchers in the field of semiconductors. Researchers and engineers in the field of III-nitrides and optoelectronics. Moreover, the in-depth discussions on the growth and characterization of a broad range of semiconductor nanostructures will benefit students and researchers working on nanomaterials, nanotechnology, and emerging devices

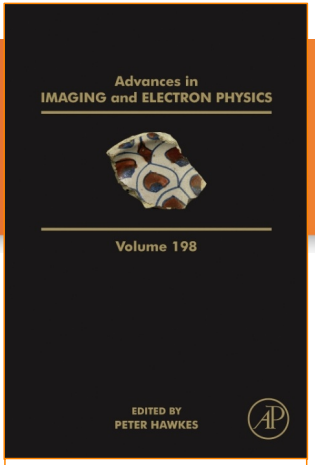
Covers the latest breakthrough research and exciting developments in the field of III-nitride compound semiconductors

KEY FEATURES

- Contains the latest breakthrough research in III-nitride optoelectronics
- Provides a comprehensive presentation that covers the fundamentals of materials growth and characterization and the design and performance characterization of state-of-the-art optoelectronic devices
- Presents an in-depth discussion on III-nitride bulk, quantum well, quantum dot, and nanowire technologies

DESCRIPTION

III-Nitride Semiconductor Optoelectronics covers the latest breakthrough research and exciting developments in the field of III-nitride compound semiconductors. It includes important topics on the fundamentals of materials growth, characterization, and optoelectronic device applications of III-nitrides. Bulk, quantum well, quantum dot, and nanowire heterostructures are all thoroughly explored.



Advances in Imaging and Electron Physics, Vol 198

Advances in Imaging and Electron Physics

Peter W. Hawkes Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

Presents cutting-edge articles on the latest developments in all areas of microscopy, image science, and many related subjects in electron physics

KEY FEATURES

- Contains contributions from leading authorities on the subject matter
- Informs and updates on all the latest developments in the field of imaging and electron physics
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices, especially semiconductor devices, particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy*. The series features extended articles on the physics of electron devices, especially semiconductor devices, particle optics at high and low energies, microlithography, image science, digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

ISBN: 978-0-12-804810-8

PUB DATE: November 2016

FORMAT: Hardback

PAGES: c. 138

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general

SERIALS

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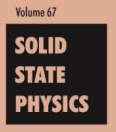

Solid State Physics, Vol 67

Solid State Physics

Edited by: ***Robert L. Stamps*** School of Physics & Astronomy, University of Glasgow, UK
Robert E. Camley Department of Physics & Energy Science, University of Colorado at Colorado Springs, CO, USA

Publishes cutting-edge reviews on solid state physics, providing the latest information on matter in its solid phase, especially the atomic level

KEY FEATURES

- Contains contributions from leading authorities in the study of solid state physics, especially the atomic level
- Informs and updates on all the latest developments in the field
- Presents timely and state-of-the-art reviews pertaining to all aspects of solid state physics

DESCRIPTION

Solid State Physics provides the latest information on the branch of physics that is primarily devoted to the study of matter in its solid phase, especially at the atomic level. This prestigious serial presents timely and state-of-the-art reviews pertaining to all aspects of solid state physics.

ISBN: 978-0-12-804796-5
PUB DATE: October 2016
FORMAT: Hardback
PAGES: c. 198
TRIM: 6w x 9h

AUDIENCE

Solid state physicists

SERIALS

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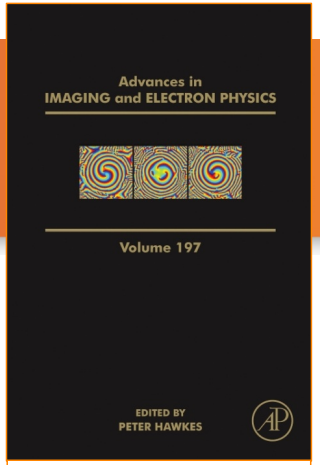

Advances in Imaging and Electron Physics, Vol 197

Advances in Imaging and Electron Physics

Peter W. Hawkes Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

This series provides cutting-edge articles on the latest developments in all areas of microscopy, image science, and related subjects in electron physics

KEY FEATURES

- Contains contributions from leading authorities on imaging and electron physics that inform and update on the latest developments in the field
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy*. The series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

ISBN: 978-0-12-804811-5

PUB DATE: October 2016

FORMAT: Hardback

PAGES: c. 160

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general

SERIALS

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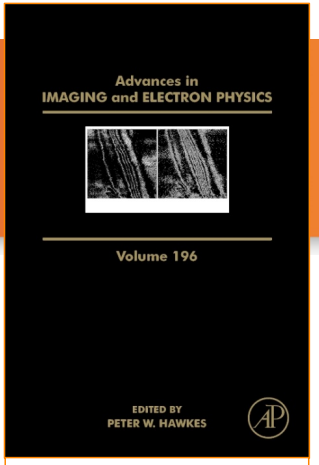

Advances in Imaging and Electron Physics, Vol 196

Advances in Imaging and Electron Physics

Peter W. Hawkes Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

The *Advances in Imaging and Electron Physics* series publishes a broad collection of survey articles on topics including image-forming instruments, especially electron and near-field microscopes, imaging theory, and image processing, including mathematical morphology and many related topics in electron physics

ISBN: 978-0-12-804812-2

PUB DATE: September 2016

FORMAT: Hardback

PAGES: c. 344

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general

KEY FEATURES

- Contains contributions from leading authorities on the subject matter
- Informs and updates with all the latest developments in the field of imaging and electron physics
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy*. The series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

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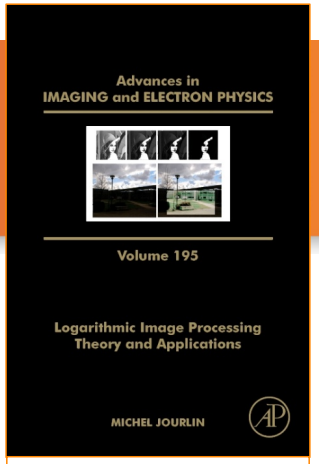

Advances in Imaging and Electron Physics, Vol 195

Logarithmic Image Processing: Theory and Applications

Edited by: ***Peter W. Hawkes*** Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

As the latest volume in the long-running serial that merges *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy*, this cutting-edge volume provides articles on recent developments in all areas of microscopy, digital image processing, and many related subjects in electron physics

KEY FEATURES

- Merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy* into a single volume
- Contains the latest information on logarithmic image processing and its theory and applications
- Features cutting-edge articles on recent developments in all areas of microscopy, digital image processing, and many related subjects in electron physics

DESCRIPTION

Logarithmic Image Processing: Theory and Applications, the latest volume in the series that merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy* and features cutting-edge articles on recent developments in all areas of microscopy, digital image processing, and many related subjects in electron physics.

ISBN: 978-0-12-804813-9

PUB DATE: July 2016

FORMAT: Hardback

PAGES: c. 260

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general.

SERIALS

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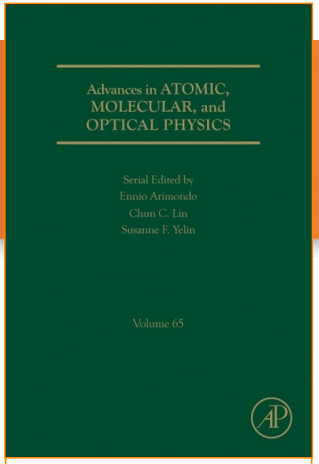

Advances In Atomic, Molecular, and Optical Physics, Vol 65

Advances in Atomic, Molecular, and Optical Physics

Edited by: ***Ennio Arimondo*** Universita di Pisa, Italy
Chun C. Lin Physics Department, University of Wisconsin, Madison, WI, USA
Susanne F. Yelin Physics Department, University of Connecticut, Storrs, CT, USA

This book provides a collection of timely articles by distinguished experts who offer relevant review material and detailed descriptions of important developments in atomic, molecular, and optical physics

ISBN: 978-0-12-804828-3
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 430
TRIM: 6w x 9h

AUDIENCE

Physicists and researchers in related applied areas

KEY FEATURES

- Presents the work of international experts in the field
- Comprehensive articles compile recent developments in a field that is experiencing rapid growth, with new experimental and theoretical techniques emerging
- Ideal for users interested in optics, excitons, plasmas, and thermodynamics
- Topics covered include atmospheric science, astrophysics, surface physics, and laser physics, amongst others

DESCRIPTION

Advances in Atomic, Molecular, and Optical Physics provides a comprehensive compilation of recent developments in a field that is in a state of rapid growth, as new experimental and theoretical techniques are used on many problems, both old and new.

Topics covered include related applied areas, such as atmospheric science, astrophysics, surface physics, and laser physics, with timely articles written by distinguished experts that contain relevant review material and detailed descriptions of important developments in the field.

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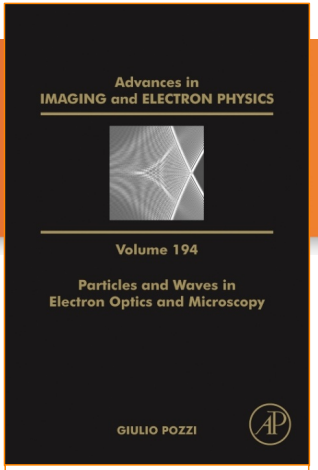

Advances in Imaging and Electron Physics, Vol 194

Particles and Waves in Electron Optics and Microscopy

Edited by: ***Peter W. Hawkes*** Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

This latest volume in the series merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy*, and features cutting-edge articles on recent developments in all areas of microscopy, digital image processing, and many related subjects in electron physics

KEY FEATURES

- Contains contributions from leading authorities on the subject matter
- Informs and updates all the latest developments in the field of imaging and electron physics
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy*. The series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

ISBN: 978-0-12-804814-6

PUB DATE: May 2016

FORMAT: Hardback

PAGES: c. 334

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general.

SERIALS

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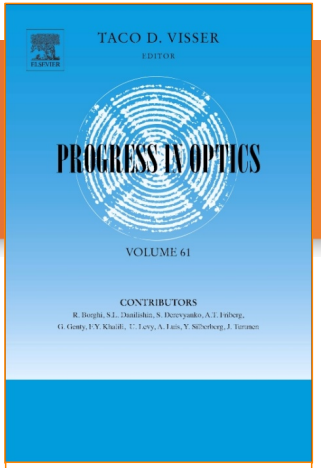

Progress in Optics, Vol 61

Progress in Optics

Taco Visser Department of Physics and Astronomy, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

ELSEVIER

Presents the latest developments in the field of optics

KEY FEATURES

- Comprehensive, in-depth reviews
- Edited by the leading authority in the field

DESCRIPTION

The *Progress in Optics* series contains more than 300 review articles by distinguished research workers, which have become permanent records for many important developments, helping optical scientists and optical engineers stay abreast of their fields.

ISBN: 978-0-12-804699-9

PUB DATE: April 2016

FORMAT: Hardback

PAGES: c. 412

TRIM: 6w x 9h

AUDIENCE

Researchers, professors, postgraduate students, Academic and corporate libraries in the field of optics

SERIALS

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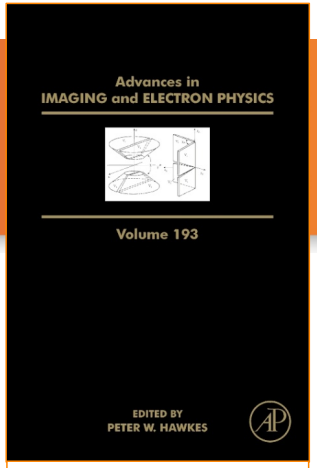

Advances in Imaging and Electron Physics, Vol 193

Advances in Imaging and Electron Physics

Edited by: ***Peter W. Hawkes*** Laboratoire d'Optique Electronique du Centre National de la Recherche Scientifique (CEMES), Toulouse, France

Merges two long-running serials, *Advances in Electronics and Electron Physics* and *Advances in Optical and Electron Microscopy,* and features cutting-edge articles on recent developments in all areas of microscopy, image science, and many related subjects in electron physics

ISBN: 978-0-12-804815-3

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 144

TRIM: 6w x 9h

AUDIENCE

Physicists, electrical engineers and applied mathematicians in all branches of image processing and microscopy as well as electron physics in general.

KEY FEATURES

- Contains contributions from leading authorities on the subject matter
- Informs and updates on all the latest developments in the field of imaging and electron physics
- Provides practitioners interested in microscopy, optics, image processing, mathematical morphology, electromagnetic fields, electron, and ion emission with a valuable resource
- Features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing

DESCRIPTION

Advances in Imaging and Electron Physics merges two long-running serials, *Advances in Electronics and Electron Physics and Advances in Optical and Electron Microscopy*.

The series features extended articles on the physics of electron devices (especially semiconductor devices), particle optics at high and low energies, microlithography, image science, and digital image processing, electromagnetic wave propagation, electron microscopy, and the computing methods used in all these domains.

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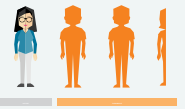

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