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Mathematical Methods for Physics and Engineering

A Comprehensive Guide

Cambridge University Press The third edition of this highly acclaimed undergraduate textbook is suitable for teaching all the mathematics for an undergraduate course in any of the physical sciences. As well as lucid descriptions of all the topics and many worked examples, it contains over 800 exercises. New stand-alone chapters give a systematic account of the 'special functions' of physical science, cover an extended range of practical applications of complex variables, and give an introduction to quantum operators. Further tabulations, of relevance in statistics and numerical integration, have been added. In this edition, half of the exercises are provided with hints and answers and, in a separate manual available to both students and their teachers, complete worked solutions. The remaining exercises have no hints, answers or worked solutions and can be used for unaided homework; full solutions are available to instructors on a password-protected web site, www.cambridge.org/9780521679718.

Guide to Reprints

Author, title

Answer Set Programming

Springer Nature Answer set programming (ASP) is a programming methodology oriented towards combinatorial search problems. In such a problem, the goal is to find a solution among a large but finite number of possibilities. The idea of ASP came from research on artificial intelligence and computational logic. ASP is a form of declarative programming: an ASP program describes what is counted as a solution to the problem, but does not specify an algorithm for solving it. Search is performed by sophisticated software systems called answer set solvers. Combinatorial search problems often arise in science and technology, and ASP has found applications in diverse areas—in historical linguistic, in bioinformatics, in robotics, in space exploration, in oil and gas industry, and many others. The importance of this programming method was recognized by the Association for the Advancement of Artificial Intelligence in 2016, when AI Magazine published a special issue on answer set programming. The book introduces the reader to the theory and practice of ASP. It describes the input language of the answer set solver CLINGO, which was designed at the University of Potsdam in Germany and is used today by ASP programmers in many countries. It includes numerous examples of ASP programs and present the mathematical theory that ASP is based on. There are many exercises with complete solutions.

A Basic Guide to Exporting

Simon and Schuster Here is practical advice for anyone who wants to build their business by selling overseas. The International Trade Administration covers key topics such as marketing, legal issues, customs, and more. With real-life examples and a full index, *A Basic Guide to Exporting* provides expert advice and practical solutions to meet all of your exporting needs.

A Guide to Experiments in Quantum Optics

John Wiley & Sons Provides fully updated coverage of new experiments in quantum optics This fully revised and expanded edition of a well-established textbook on experiments on quantum optics covers new concepts, results, procedures, and developments in state-of-the-art experiments. It starts with the basic building blocks and ideas of quantum optics, then moves on to detailed procedures and new techniques for each experiment. Focusing on metrology, communications, and quantum logic, this new edition also places more emphasis on single photon technology and hybrid detection. In addition, it offers end-of-chapter summaries and full problem sets throughout. Beginning with an introduction to the subject, *A Guide to Experiments in Quantum Optics, 3rd Edition* presents readers with chapters on classical models of light, photons, quantum models of light, as well as basic optical components. It goes on to give readers full coverage of lasers and amplifiers, and examines numerous photodetection techniques being used today. Other chapters examine quantum noise, squeezing experiments, the application of squeezed light, and fundamental tests of quantum mechanics. The book finishes with a section on quantum information before summarizing of the contents and offering an outlook on the future of the field. -Provides all new updates to the field of quantum optics, covering the building blocks, models and concepts, latest results, detailed procedures, and modern experiments -Places emphasis on three major goals: metrology, communications, and quantum logic -Presents fundamental tests of quantum mechanics (Schrodinger Kitten, multimode entanglement, photon systems as quantum emulators), and introduces the density function -Includes new trends and technologies in quantum optics and photodetection, new results in sensing and metrology, and more coverage of quantum gates and logic, cluster states, waveguides for multimodes, discord and other quantum measures, and quantum control -Offers end of chapter summaries and problem sets as new features *A Guide to Experiments in Quantum Optics, 3rd Edition* is an ideal book for professionals, and graduate and upper level students in physics and engineering science.

Human Stem Cell Manual

A Laboratory Guide

Academic Press This manual is a comprehensive compilation of "methods that work" for deriving, characterizing, and differentiating hPSCs, written by the researchers who developed and tested the methods and use them every day in their laboratories. The manual is much more than a collection of recipes; it is intended to spark the interest of scientists in areas of stem cell biology that they may not have considered to be important to their work. The second edition of the *Human Stem Cell Manual* is an extraordinary laboratory guide for both experienced stem cell researchers and those just beginning to use stem cells in their work. Offers a comprehensive guide for medical and biology researchers who want to use stem cells for basic research, disease modeling, drug development, and cell therapy applications. Provides a cohesive global view of the current state of stem cell research, with chapters written by pioneering stem cell researchers in Asia, Europe, and North America. Includes new chapters devoted to recently developed methods, such as iPSC technology, written by the scientists who made these breakthroughs.

Calibre Manual

Samurai Media Limited Calibre is an ebook library manager. It can view, convert and catalog ebooks in most of the major ebook formats. It can also talk to many ebook reader devices. It can go out to the Internet and fetch metadata for your books. It can download newspapers and convert them into ebooks for convenient reading. It is cross platform, running on Linux, Windows and OS X.

STRUCTURED COMPUTER ORGANIZATION

Guide to Participatory Varietal Selection for Submergence-tolerant Rice

IRRI The Green Revolution averted the threat of famine through the rapid adoption of improved rice varieties. However, despite this huge success, hundreds of millions of poor rice-farming families in rainfed areas still live in poverty and suffer from food (rice) insecurity. Despite many released improved rice varieties for rainfed conditions, farmers still use local varieties that can withstand drought and floods but have low yields or they use the same varieties for many years because of a lack of better varieties. Rainfed rice farmers are slow to adopt improved varieties because of several problems. One problem is more of extension than breeding - many farmers, particularly those living in remote rainfed areas, may not have access to or information about the seed of new varieties. Another problem is that variety testing programs are often conducted on-station, which does not represent farmers' fields. Moreover, conventional rice breeding programs usually seek farmers' input only at the very end of the process, when newly released varieties, usually one or two per year, are evaluated in on-farm demonstration trials. Often, in remote and unfavorable areas, subsistence farmers, who comprise the majority of the rural farming population in Asia, give importance to social and cultural dimensions aside from the agronomic performance of the new rice varieties. The complexities of developing acceptable varieties for variable and stressful rainfed environments require that breeders become deeply familiar with men and women farmers' needs and preferences. Since 1977, IRRI has been making efforts to improve communication among farmers, breeders, and extension workers so that men and women farmers' concerns and preferences are considered in plant breeding objectives. Participatory varietal selection (PVS) is a simple way for breeders and agronomists to learn which varieties perform well on-station and on-farm and to obtain feedback from the potential end users in the early phases of the breeding cycle. It is a means for social scientists to identify the varieties that most men and women farmers prefer, including the reasons for their preference and constraints to adoption. Based on IRRI's experience in collaboration with national agricultural research and extension system partners and farmers, PVS, which includes "researcher-managed" and "farmer-managed" trials, is an effective

strategy for accelerating the dissemination of stress-tolerant varieties. PVS has also been instrumental in the fast release of stress-tolerant varieties through the formal varietal release system. This guide on PVS will complement the various training programs given by IRRI for plant breeders, agronomists, and extension workers engaged in rice varietal development and dissemination.

Broken Bowels

Tales of a Super Survivor

Independently Published I was diagnosed with colon cancer when I was 43, in the summer of 2015. That's young for a cancer patient. The symptoms were weird and were not what is commonly associated with colon cancer. After major surgery in early 2016, the plan was to get me back on my feet within 6 months. Sadly, the common treatment method of chemotherapy did not work in my case. Turns out I have some genetic defects that lead to an aggressive form of uber nasty cancer, rendering most conventional treatment options useless. As a result, my hospital decided to turn me away, knowing they had no idea how to help me going forward. Seemingly left to die with no further treatment options, the power of the universe put me in touch with a crack team of doctors at Mount Sinai Hospital in Miami Beach. These people were not so easy to give up on me just yet. They suggested immunotherapy, the same treatment that miraculously cured Jimmy Carter. And it worked wonders! In only two months I went from a sleep deprived wreck, living with constant pain, unable to walk without a wheelchair or a stick, to cycling 10 miles a day. And all that without major side effects. If that's not a miracle then I don't know what is! **BROKEN BOWELS** is my personal account of these horrific yet truly amazing years I have endured. I've had countless chemotherapy and radiation treatments and survived terrible side effects. I've had 6 surgeries, I've had a colostomy for almost two years and an ileostomy for three months. I've lived without solid food for nearly a year, and for many months I've endured every type of catheter known to man, until I very nearly lost my whole bladder. My doctors call me a Super Survivor. supersurvivor.tv

Knowledge Management in Organizations

13th International Conference, KMO 2018, Žilina, Slovakia, August 6–10, 2018, Proceedings

Springer This book contains the refereed proceedings of the 13th International Conference on Knowledge Management in Organizations, KMO 2018, held in Žilina, Slovakia, in August 2018. The theme of the conference was "Emerging Research for Knowledge Management in Organizations." The 59 papers accepted for KMO 2018 were selected from 141 submissions and are organized in topical sections on: Knowledge management models and analysis; knowledge sharing; knowledge transfer and learning; knowledge and service innovation; knowledge creation; knowledge and organization; information systems and information science; knowledge and technology management; data mining and intelligent science; business and customer relationship management; big data and IoT; and new trends in IT.

CockroachDB

The Definitive Guide

Get the lowdown on CockroachDB, the elastic SQL database built to handle the demands of today's data-driven world. With this practical guide, software developers, architects, and DevOps teams will discover the advantages of building on a distributed SQL database. You'll learn how to create applications that scale elastically and provide seamless delivery for end users while remaining exceptionally resilient and indestructible. Written from scratch for the cloud and architected to scale elastically to handle the demands of cloud native and open source, CockroachDB makes it easier to build and scale modern applications. If you're familiar with distributed systems, you'll quickly discover the benefits of strong data correctness and consistency guarantees as well as optimizations for delivering ultralow latencies to globally distributed end users. With this thorough guide, you'll learn how to: Plan and build applications for distributed infrastructure, including data modeling and schema design Migrate data into CockroachDB Read and write data and run ACID transactions across distributed infrastructure Optimize queries for performance across geographically distributed replicas Plan a CockroachDB deployment for resiliency across single-region and multiregion clusters Secure, monitor, and optimize your CockroachDB deployment.

The Principles of Quantum Mechanics

Lulu Press, Inc "The standard work in the fundamental principles of quantum mechanics, indispensable both to the advanced student and to the mature research worker, who will always find it a fresh source of knowledge and stimulation." --Nature "This is the classic text on quantum mechanics. No graduate student of quantum theory should leave it unread"--W.C Schieve, University of Texas

Guide to Vulnerability Analysis for Computer Networks and Systems

An Artificial Intelligence Approach

Springer This professional guide and reference examines the challenges of assessing security vulnerabilities in computing infrastructure. Various aspects of vulnerability assessment are covered in detail, including recent advancements in reducing the requirement for expert knowledge through novel applications of artificial intelligence. The work also offers a series of case studies on how to develop and perform vulnerability assessment techniques using start-of-the-art intelligent mechanisms. Topics and features: provides tutorial activities and thought-provoking questions in each chapter, together with numerous case studies; introduces the fundamentals of vulnerability assessment, and reviews the state of the art of research in this area; discusses vulnerability assessment frameworks, including frameworks for industrial control and cloud systems; examines a range of applications that make use of artificial intelligence to enhance the vulnerability assessment processes; presents visualisation techniques that can be used to assist the vulnerability assessment process. In addition to serving the needs of security practitioners and researchers, this accessible volume is also ideal for students and instructors seeking a primer on artificial intelligence for vulnerability assessment, or a supplementary text for courses on computer security, networking, and artificial intelligence.

Radical Technologies

The Design of Everyday Life

Verso Books A field manual to the technologies that are transforming our lives Everywhere we turn, a startling new device promises to transfigure our lives. But at what cost? In this urgent and revelatory excavation of our Information Age, leading technology thinker Adam Greenfield forces us to reconsider our relationship with the networked objects, services and spaces that define us. It is time to re-evaluate the Silicon Valley consensus determining the future. We already depend on the smartphone to navigate every aspect of our existence. We're told that innovations—from augmented-reality interfaces and virtual assistants to autonomous delivery drones and self-driving cars—will make life easier, more convenient and more productive. 3D printing promises unprecedented control over the form and distribution of matter, while the blockchain stands to revolutionize everything from the recording and exchange of value to the way we organize the mundane realities of the day to day. And, all the while, fiendishly complex algorithms are operating quietly in the background, reshaping the economy, transforming the fundamental terms of our politics and even redefining what it means to be human. Having successfully colonized everyday life, these radical technologies are now conditioning the choices available to us in the years to come. How do they work? What challenges do they present to us, as individuals and societies? Who benefits from their adoption? In answering these questions, Greenfield's timely guide clarifies the scale and nature of the crisis we now confront—and offers ways to reclaim our stake in the future.

Cumulative Book Index

A world list of books in the English language.

The Fingerprint

Sourcebook

CreateSpace The idea of The Fingerprint Sourcebook originated during a meeting in April 2002. Individuals representing the fingerprint, academic, and scientific communities met in Chicago, Illinois, for a day and a half to discuss the state of fingerprint identification with a view toward the challenges raised by Daubert issues. The meeting was a joint project between the International Association for Identification (IAI) and West Virginia University (WVU). One recommendation that came out of that meeting was a suggestion to create a sourcebook for friction ridge examiners, that is, a single source of researched information regarding the subject. This sourcebook would provide educational, training, and research information for the international scientific community.

Experimental Approaches of NMR Spectroscopy

Methodology and Application to Life Science and Materials Science

Springer This book describes the advanced developments in methodology and applications of NMR spectroscopy to life science and materials science. Experts who are leaders in the development of new methods and applications of life and material sciences have contributed an exciting range of topics that cover recent advances in structural determination of biological and material molecules, dynamic aspects of biological and material molecules, and development of novel NMR techniques, including resolution and sensitivity enhancement. First, this book particularly emphasizes the experimental details for new researchers to use NMR spectroscopy and pick up the potentials of NMR spectroscopy. Second, the book is designed for those who are involved in either developing the technique or expanding the NMR application fields by applying them to specific samples. Third, the Nuclear Magnetic Resonance Society of Japan has organized this book not only for NMR members of Japan but also for readers worldwide who are interested in using NMR spectroscopy extensively.

The Hitchhiker's Guide to Python

Best Practices for Development

"O'Reilly Media, Inc." *The Hitchhiker's Guide to Python* takes the journeyman Pythonista to true expertise. More than any other language, Python was created with the philosophy of simplicity and parsimony. Now 25 years old, Python has become the primary or secondary language (after SQL) for many business users. With popularity comes diversity—and possibly dilution. This guide, collaboratively written by over a hundred members of the Python community, describes best practices currently used by package and application developers. Unlike other books for this audience, *The Hitchhiker's Guide* is light on reusable code and heavier on design philosophy, directing the reader to excellent sources that already exist.

Introduction to High Energy Physics

Cambridge University Press This highly-regarded text provides a comprehensive introduction to modern particle physics. Extensively rewritten and updated, this 4th edition includes developments in elementary particle physics, as well as its connections with cosmology and astrophysics. As in previous editions, the balance between experiment and theory is continually emphasised. The stress is on the phenomenological approach and basic theoretical concepts rather than rigorous mathematical detail. Short descriptions are given of some of the key experiments in the field, and how they have influenced our thinking. Although most of the material is presented in the context of the Standard Model of quarks and leptons, the shortcomings of this model and new physics beyond its compass (such as supersymmetry, neutrino mass and oscillations, GUTs and superstrings) are also discussed. The text includes many problems and a detailed and annotated further reading list.

Foundations of Analog and Digital Electronic Circuits

Elsevier Unlike books currently on the market, this book attempts to satisfy two goals: combine circuits and electronics into a single, unified treatment, and establish a strong connection with the contemporary world of digital systems. It will introduce a new way of looking not only at the treatment of circuits, but also at the treatment of introductory coursework in engineering in general. Using the concept of "abstraction," the book attempts to form a bridge between the world of physics and the world of large computer systems. In particular, it attempts to unify electrical engineering and computer science as the art of creating and exploiting successive abstractions to manage the complexity of building useful electrical systems. Computer systems are simply one type of electrical systems. +Balances circuits theory with practical digital electronics applications. +Illustrates concepts with real devices. +Supports the popular circuits and electronics course on the MIT OpenCourse Ware from which professionals worldwide study this new approach. +Written by two educators well known for their innovative teaching and research and their collaboration with industry. +Focuses on contemporary MOS technology.

Industry 4.0

Current Status and Future Trends

BoD - Books on Demand This book shows a vision of the present and future of Industry 4.0 and identifies and examines the most pressing research issue in Industry 4.0. Containing the contributions of leading researchers and academics, this book includes recent publications in key areas of interest, for example: a review on the Industry 4.0: What is the Industry 4.0, the pillars of Industry 4.0, current and future trends, technologies, taxonomy, and some case studies (A.U.T.O 4.0, stabilization of digitized process). This book also provides an essential tool in the process of migration to Industry 4.0. The book is suitable as a text for graduate students and professionals in the industrial sector and general engineering areas. The book is organized into two sections: 1. Reviews 2. Case Studies Industry 4.0 is likely to play an important role in the future society. This book is a good reference on Industry 4.0 and includes some case studies. Each chapter is written by expert researchers in the sector, and the topics are broad; from the concept or definition of Industry 4.0 to a future society 5.0.

PC Mag

PCMag.com is a leading authority on technology, delivering Labs-based, independent reviews of the latest products and services. Our expert industry analysis and practical solutions help you make better buying decisions and get more from technology.

PC Magazine

The Independent Guide to IBM-standard Personal Computing

Business Process Management

Concepts, Languages, Architectures

Springer Business process management is usually treated from two different perspectives: business administration and computer science. While business administration professionals tend to consider information technology as a subordinate aspect in business process management for experts to handle, by contrast computer science professionals often consider business goals and organizational regulations as terms that do not deserve much thought but require the appropriate level of abstraction. Matthias Weske argues that all communities involved need to have a common understanding of the different aspects of business process management. To this end, he details the complete business process lifecycle from the modeling phase to process enactment and improvement, taking into account all different stakeholders involved. After starting with a presentation of general foundations and abstraction models, he explains concepts like process orchestrations and choreographies, as well as process properties and data dependencies. Finally, he presents both traditional and advanced business process management architectures, covering, for example, workflow management systems, service-oriented architectures, and data-driven approaches. In addition, he shows how standards like WfMC, SOAP, WSDL, and BPEL fit into the picture. This textbook is ideally suited for classes on business process management, information systems architecture, and workflow management. This 3rd edition contains a new chapter on business decision modelling, covering the Decision Model and Notation (DMN) standard; the chapter on process choreographies has been streamlined, and numerous clarifications have been fetched throughout the book. The accompanying website www.bpm-book.com contains further information and additional teaching material.

Quantum Field Theory in a Nutshell

Second Edition

Princeton University Press A fully updated edition of the classic text by acclaimed physicist A. Zee. Since it was first published, *Quantum Field Theory in a Nutshell* has quickly established itself as the most accessible and comprehensive introduction to this profound and deeply fascinating area of theoretical physics. Now in this fully revised and expanded edition, A. Zee covers the latest advances while providing a solid conceptual foundation for students to build on, making this the most up-to-date and modern textbook on quantum field theory available. This expanded edition features several additional chapters, as well as an entirely new section describing recent developments in quantum field theory such as gravitational waves, the helicity spinor formalism, on-shell gluon scattering, recursion relations for amplitudes with complex momenta, and the hidden connection between Yang-Mills theory and Einstein gravity. Zee also provides added exercises, explanations, and examples, as well as detailed appendices, solutions to selected exercises, and suggestions for further reading. The most accessible and comprehensive introductory textbook available. Features a fully revised, updated, and expanded text. Covers the latest exciting advances in the field. Includes new exercises. Offers a one-of-a-kind resource for students and researchers. Leading universities that have adopted this book include: Arizona State University Boston University Brandeis University Brown University California Institute of Technology Carnegie Mellon College of William & Mary Cornell Harvard University Massachusetts Institute of Technology Northwestern University Ohio State University Princeton University Purdue University - Main Campus Rensselaer Polytechnic Institute Rutgers University - New Brunswick Stanford University University of California - Berkeley University of Central Florida University of Chicago University of Michigan University of Montreal University of Notre Dame Vanderbilt University Virginia Tech University

Experimental Statistics

Courier Corporation A handbook for those seeking engineering information and quantitative data for designing, developing, constructing, and testing equipment. Covers the planning of experiments, the analyzing of extreme-value data; and more. 1966 edition. Index. Includes 52 figures and 76 tables.

Neutrino Mass

Springer Science & Business Media Reviews the current state of knowledge of neutrino masses and the related question of neutrino oscillations. After an overview of the theory of neutrino masses and mixings, detailed accounts are given of the laboratory limits on neutrino masses, astrophysical and cosmological constraints on those masses, experimental results on neutrino oscillations, the theoretical interpretation of those results, and theoretical models of neutrino masses and mixings. The book concludes with an examination of the potential of long-baseline experiments. This is an essential reference text for workers in elementary-particle physics, nuclear physics, and astrophysics.

Proceeding of the Second International Conference on Microelectronics, Computing & Communication Systems (MCCS 2017)

Springer The volume presents high quality papers presented at the Second International Conference on Microelectronics, Computing & Communication Systems (MCCS 2017). The book discusses recent trends in technology and advancement in MEMS and nanoelectronics, wireless communications, optical communication, instrumentation, signal processing, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems, and sensor network applications. It includes original papers based on original theoretical, practical, experimental, simulations, development, application, measurement, and testing. The applications and solutions discussed in the book will serve as a good reference material for future works.

Improving Web Application Security

Threats and Countermeasures

Microsoft Press Gain a solid foundation for designing, building, and configuring security-enhanced, hack-resistant Microsoft® ASP.NET Web applications. This expert guide describes a systematic, task-based approach to security that can be applied to both new and existing applications. It addresses security considerations at the network, host, and application layers for each physical tier—Web server, remote application server, and database server—detailing the security configurations and countermeasures that can help mitigate risks. The information is organized into sections that correspond to both the product life cycle and the roles involved, making it easy for architects, designers, and developers to find the answers they need. All PATTERNS & PRACTICES guides are reviewed and approved by Microsoft engineering teams, consultants, partners, and customers—delivering accurate, real-world information that's been technically validated and tested.

Electromagnetic Noise and Quantum Optical Measurements

Springer Science & Business Media From the reviews: "Haus' book provides numerous insights on topics of wide importance, and contains much material not available elsewhere in book form. [...] an indispensable resource for those working in quantum optics or electronics." *Optics & Photonics News*

Principles of Quantum Mechanics

Springer Science & Business Media R. Shankar has introduced major additions and updated key presentations in this second edition of *Principles of Quantum Mechanics*. New features of this innovative text include an entirely rewritten mathematical introduction, a discussion of Time-reversal invariance, and extensive coverage of a variety of path integrals and their applications. Additional highlights include: - Clear, accessible treatment of underlying mathematics - A review of Newtonian, Lagrangian, and Hamiltonian mechanics - Student understanding of quantum theory is enhanced by separate treatment of mathematical theorems and physical postulates - Unsurpassed coverage of path integrals and their relevance in contemporary physics The requisite text for advanced undergraduate- and graduate-level students, *Principles of Quantum Mechanics, Second Edition* is fully referenced and is supported by many exercises and solutions. The book's self-contained chapters also make it suitable for independent study as well as for courses in applied disciplines.

Analogue Gravity Phenomenology

Analogue Spacetimes and Horizons, from Theory to Experiment

Springer *Analogue Gravity Phenomenology* is a collection of contributions that cover a vast range of areas in physics, ranging from surface wave propagation in fluids to nonlinear optics. The underlying common aspect of all these topics, and hence the main focus and perspective from which they are explained here, is the attempt to develop analogue models for gravitational systems. The original and main motivation of the field is the verification and study of Hawking radiation from a horizon: the enabling feature is the possibility to generate horizons in the laboratory with a wide range of physical systems that involve a flow of one kind or another. The years around 2010 and onwards witnessed a sudden surge of experimental activity in this expanding field of research. However, building an expertise in analogue gravity requires the researcher to be equipped with a rather broad range of knowledge and interests. The aim of this book is to bring the reader up to date with the latest developments and provide the basic background required in order to appreciate the goals, difficulties, and success stories in the field of analogue gravity. Each chapter of the book treats a different topic explained in detail by the major experts for each specific discipline. The first chapters give an overview of black hole spacetimes and Hawking radiation before moving on to describe the large variety of analogue spacetimes that have been proposed and are currently under investigation. This introductory part is then followed by an in-depth description of what are currently the three most promising analogue spacetime settings, namely surface waves in flowing fluids, acoustic oscillations in Bose-Einstein condensates and electromagnetic waves in nonlinear optics. Both theory and experimental endeavours are explained in detail. The final chapters refer to other aspects of analogue gravity beyond the study of Hawking radiation, such as Lorentz invariance violations and Brownian motion in curved spacetimes, before concluding with a return to the origins of the field and a description of the available observational evidence for horizons in astrophysical black holes.

Lattice-Gas Cellular Automata and Lattice Boltzmann Models

An Introduction

Springer Lattice-gas cellular automata (LGCA) and lattice Boltzmann models (LBM) are relatively new and promising methods for the numerical solution of nonlinear partial differential equations. The book provides an introduction for graduate students and researchers. Working knowledge of calculus is required and experience in PDEs and fluid dynamics is recommended. Some peculiarities of cellular automata are outlined in Chapter 2. The properties of various LGCA and special coding techniques are discussed in Chapter 3. Concepts from statistical mechanics (Chapter 4) provide the necessary theoretical background for LGCA and LBM. The properties of lattice Boltzmann models and a method for their construction are presented in Chapter 5.

Computer Architecture

ISCA 2010 International Workshops A4MMC, AMAS-BT, EAMA, WEED, WIOSCA, Saint-Malo, France, June 19-23, 2010, Revised Selected Papers

Springer This book constitutes the thoroughly refereed post-conference proceedings of the workshops held at the 37th International Symposium on Computer Architecture, ISCA 2010, in Saint-Malo, France, in June 2010. The 28 revised full papers presented were carefully reviewed and selected from the lectures given at 5 of these workshops. The papers address topics ranging from novel memory architectures to emerging application design and performance analysis and encompassed the following workshops: A4MMC, applications for multi- and many-cores; AMAS-BT, 3rd workshop on architectural and micro-architectural support for binary translation; EAMA, the 3rd Workshop for emerging applications and many-core architectures; WEED, 2nd Workshop on energy efficient design, as well as WIOSCA, the annual workshop on the interaction between operating systems and computer architecture.

5th International Conference on Biomedical Engineering in Vietnam

Springer This volume presents the proceedings of the Fifth International Conference on the Development of Biomedical Engineering in Vietnam which was held from June 16-18, 2014 in Ho Chi Minh City. The volume reflects the progress of Biomedical Engineering and discusses problems and solutions. It aims identifying new challenges, and shaping future directions for research in biomedical engineering fields including medical instrumentation, bioinformatics, biomechanics, medical imaging, drug delivery therapy, regenerative medicine and entrepreneurship in medical devices.

Real Analysis (Classic Version)

Math Classics Originally published in 2010, reissued as part of Pearson's modern classic series.

Proceedings of the Twelfth International Conference on Management Science and Engineering Management

Springer This proceedings book is divided in 2 Volumes and 8 Parts. Part I is dedicated to Decision Support System, which is about the information system that supports business or organizational decision-making activities; Part II is on Computing Methodology, which is always used to provide the most effective algorithm for numerical solutions of various modeling problems; Part III presents Information Technology, which is the application of computers to store, study, retrieve, transmit and manipulate data, or information in the context of a business or other enterprise; Part IV is dedicated to Data Analysis, which is a process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making; Part V presents papers on Operational Management, which is about the plan, organization, implementation and control of the operation process; Part VI is on Project Management, which is about the initiating, planning, executing, controlling, and closing the work of a team to achieve specific goals and meet specific success criteria at the specified time in the field of engineering; Part VII presents Green Supply Chain, which is about the management of the flow of goods and services based on the concept of "low-carbon"; Part VIII is focused on Industry Strategy Management, which refers to the decision-making and management art of an industry or organization in a long-term and long-term development direction, objectives, tasks and policies, as well as resource allocation.

Frequency Standards

Basics and Applications

John Wiley & Sons Of all measurement units, frequency is the one that may be determined with the highest degree of accuracy. It equally allows precise measurements of other physical and technical quantities, whenever they can be measured in terms of frequency. This volume covers the central methods and techniques relevant for frequency standards developed in physics, electronics, quantum electronics, and statistics. After a review of the basic principles, the book looks at the realisation of commonly used components. It then continues with the description and characterisation of important frequency standards from atomic clocks, to frequency stabilised lasers. The whole is rounded off with a discussion of topical applications in engineering, telecommunications, and metrology.

Wireless Communications

Cambridge University Press Wireless technology is a truly revolutionary paradigm shift, enabling multimedia communications between people and devices from any location. It also underpins exciting applications such as sensor networks, smart homes, telemedicine, and automated highways. This book provides a comprehensive introduction to the underlying theory, design techniques and analytical tools of wireless communications, focusing primarily on the core principles of wireless system design. The book begins with an overview of wireless systems and standards. The characteristics of the wireless channel are then described, including their fundamental capacity limits. Various modulation, coding, and signal processing schemes are then discussed in detail, including state-of-the-art adaptive modulation, multicarrier, spread spectrum, and multiple antenna techniques. The concluding chapters deal with multiuser communications, cellular system design, and ad-hoc network design. Design insights and tradeoffs are emphasized throughout the book. It contains many worked examples, over 200 figures, almost 300 homework exercises, over 700 references, and is an ideal textbook for students.