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# Download Free 1998 Monte Carlo Owners Manual

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## **KEY=CARLO - MONTGOMERY JACKSON**

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### **ADVANCED MONTE CARLO FOR RADIATION PHYSICS, PARTICLE TRANSPORT SIMULATION AND APPLICATIONS**

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### **PROCEEDINGS OF THE MONTE CARLO 2000 CONFERENCE, LISBON, 23-26 OCTOBER 2000**

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Springer Science & Business Media This book focuses on the state of the art of Monte Carlo methods in radiation physics and particle transport simulation and applications. Special attention is paid to algorithm development for modeling, and the analysis of experiments and measurements in a variety of fields.

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### **ADVANCES IN NUMERICAL HEAT TRANSFER, VOLUME 2**

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Routledge This volume discusses the advances in numerical heat transfer modeling by applying high-performance computing resources, striking a balance between generic fundamentals, specific fundamentals, generic applications, and specific applications.

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### **RESEARCH & TECHNOLOGY 2001**

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DIANE Publishing

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### **MONTE CARLO TECHNIQUES IN RADIATION THERAPY**

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Taylor & Francis Modern cancer treatment relies on Monte Carlo simulations to help radiotherapists and clinical physicists better understand and compute radiation dose from imaging devices as well as exploit four-dimensional imaging data. With Monte Carlo-based treatment planning tools now available from commercial vendors, a complete transition to Monte Carlo-base

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## **RECENT ADVANCES IN QUANTUM MONTE CARLO METHODS**

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### **PART II**

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World Scientific This invaluable book consists of 16 chapters written by some of the most notable researchers in the field of quantum Monte Carlo, highlighting the advances made since Lester Jr.'s 1997 monograph with the same title. It may be regarded as the proceedings of the Symposium on Advances in Quantum Monte Carlo Methods held during the Pacificchem meeting in December 2000, but the contributions go beyond what was presented there.

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## **INNOVATIONS IN POWER SYSTEMS RELIABILITY**

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Springer Science & Business Media Electrical grids are, in general, among the most reliable systems in the world. These large interconnected systems, however, are subject to a host of challenges - aging infrastructure, transmission expansion to meet growing demand, distributed resources, and congestion management, among others. Innovations in Power Systems Reliability aims to provide a vision for a comprehensive and systematic approach to meet the challenges of modern power systems. Innovations in Power Systems Reliability is focused on the emerging technologies and methodologies for the enhancement of electrical power systems reliability. It addresses many relevant topics in this area, ranging from methods for balancing resources to various reliability and security aspects. Innovations in Power Systems Reliability not only discusses technological breakthroughs and sets out roadmaps in implementing the technology, but it also informs the reader about current best practice. It is a valuable source of information for academic researchers, as well as those working in industrial research and development.

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## **RADIOSURGERY 1999**

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Karger Medical and Scientific Publishers 'It is a good reference for physicians involved in radiosurgery, and would be of value for the novice to learn of the results of clinical series of patients with specific diagnoses.'

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## **ISOTOPE PRODUCTION AND APPLICATIONS IN THE 21ST CENTURY**

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### **PROCEEDINGS OF THE 3RD INTERNATIONAL CONFERENCE ON ISOTOPES, VANCOUVER, CANADA, 6-10 SEPTEMBER 1999**

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World Scientific The Third International Conference on Isotopes focused on the theme of 'Isotope Production and Applications in the 21st Century' and included presentations by several eminent experts in this field. The three central subjects 'Isotopes in Medicine, Industry and the Environment' were supplemented by presentations on the latest developments in isotope production and synthesis, research into radiopharmaceuticals, applications in agriculture, analytical applications, radiocarbon dating, AMS and PET. Various views on the future directions for producers and users of isotopes were considered at this multi-disciplinary meeting.

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## **HANDBOOK OF PARTICLE DETECTION AND IMAGING**

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Springer Science & Business Media The handbook centers on detection techniques in the field of particle physics, medical imaging and related subjects. It is structured into three parts. The first one is dealing with basic ideas of particle detectors, followed by applications of these devices in high energy physics and other fields. In the last part the large field of medical imaging using similar detection techniques is described. The different chapters of the book are written by world experts in their field. Clear instructions on the detection techniques and principles in terms of relevant operation parameters for scientists and graduate students are given. Detailed tables and diagrams will make this a very useful handbook for the application of these techniques in many different fields like physics, medicine, biology and other areas of natural science.

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## **EXPLORING MONTE CARLO METHODS**

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Elsevier Exploring Monte Carlo Methods is a basic text that describes the numerical methods that have come to be known as "Monte Carlo." The book treats the subject generically through the first eight chapters and, thus, should be of use to anyone who wants to learn to use Monte Carlo. The next two chapters focus on applications in nuclear engineering, which are illustrative of uses in other fields. Five appendices are included, which provide useful information on probability distributions, general-purpose Monte Carlo codes for radiation transport, and other matters. The famous "Buffon's needle problem" provides a unifying theme as it is repeatedly used to illustrate many features of Monte Carlo methods. This book provides the basic detail necessary to learn how to apply Monte Carlo methods and thus should be useful as a text book for undergraduate or graduate courses in numerical methods. It is written so that interested readers with only an understanding of calculus and differential equations can learn Monte Carlo on their own. Coverage of topics such as variance reduction, pseudo-random number generation, Markov chain Monte Carlo, inverse Monte Carlo, and linear operator equations will make the book useful even to experienced Monte Carlo practitioners. Provides a concise treatment of generic Monte Carlo methods Proofs for each chapter Appendixes include Certain mathematical functions; Bose Einstein functions, Fermi Dirac functions, Watson functions

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## **BAYESIAN METHODS FOR DATA ANALYSIS, THIRD EDITION**

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CRC Press Broadening its scope to nonstatisticians, Bayesian Methods for Data Analysis, Third Edition provides an accessible introduction to the foundations and applications of Bayesian analysis. Along with a complete reorganization of the material, this edition concentrates more on hierarchical Bayesian modeling as implemented via Markov chain Monte Carlo (MCMC) methods and related data analytic techniques. New to the Third Edition New data examples, corresponding R and WinBUGS code, and homework problems Explicit descriptions and illustrations of hierarchical modeling—now commonplace in Bayesian data analysis A new chapter on Bayesian design that emphasizes Bayesian clinical trials A completely revised and

expanded section on ranking and histogram estimation A new case study on infectious disease modeling and the 1918 flu epidemic A solutions manual for qualifying instructors that contains solutions, computer code, and associated output for every homework problem—available both electronically and in print Ideal for Anyone Performing Statistical Analyses Focusing on applications from biostatistics, epidemiology, and medicine, this text builds on the popularity of its predecessors by making it suitable for even more practitioners and students.

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## **REACTOR DOSIMETRY IN THE 21ST CENTURY**

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### **PROCEEDINGS OF THE 11TH INTERNATIONAL SYMPOSIUM ON REACTOR DOSIMETRY : BRUSSELS, BELGIUM, 18-23 AUGUST 2002**

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World Scientific This book presents the state of the art in reactor dosimetry as applied to nuclear power plants and to high performance research reactors, accelerator-driven systems and spallation sources. The reader will also find the latest advances in computer code development for radiation transport and shielding. In addition, the book focuses on radiation measurement techniques.

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## **THE USE OF COMPUTERS IN RADIATION THERAPY**

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### **XIIIth INTERNATIONAL CONFERENCE HEIDELBERG, GERMANY MAY 22-25, 2000**

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Springer Science & Business Media Computers have had and will continue to have a tremendous impact on professional activity in almost all areas. This applies to radiological medicine and in particular to radiation therapy. This book compiles the most recent developments and results of the application of computers and computer science as presented at the XIIIth International Conference on the Use of Computers in Radiation Therapy in Heidelberg, Germany. The text of both oral presentations and posters is included. The book is intended for computer scientists, medical physicists, engineers and physicians in the field of radiation therapy and provides a comprehensive survey of the entire field.

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## **POULTRY GENETICS, BREEDING AND BIOTECHNOLOGY**

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[Lulu.com](http://Lulu.com)

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### **WORLD CONGRESS ON MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING SEPTEMBER 7 - 12, 2009 MUNICH, GERMANY**

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#### **VOL. 25/I RADIATION ONCOLOGY**

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Springer Science & Business Media Present Your Research to the World! The World Congress 2009 on Medical Physics and Biomedical Engineering - the triennial scientific meeting of the IUPESM - is the world's leading forum for presenting the results of current scientific work in health-related physics and technologies to an international audience. With more than 2,800 presentations it will be the biggest conference in the fields of Medical Physics and Biomedical Engineering in 2009!

Medical physics, biomedical engineering and bioengineering have been driving forces of innovation and progress in medicine and healthcare over the past two decades. As new key technologies arise with significant potential to open new options in diagnostics and therapeutics, it is a multidisciplinary task to evaluate their benefit for medicine and healthcare with respect to the quality of performance and therapeutic output. Covering key aspects such as information and communication technologies, micro- and nanosystems, optics and biotechnology, the congress will serve as an inter- and multidisciplinary platform that brings together people from basic research, R&D, industry and medical application to discuss these issues. As a major event for science, medicine and technology the congress provides a comprehensive overview and in-depth, first-hand information on new developments, advanced technologies and current and future applications. With this Final Program we would like to give you an overview of the dimension of the congress and invite you to join us in Munich! Olaf Dössel Congress President Wolfgang C.

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## **MONTE CARLO DOSE CALCULATIONS FOR CLINICAL ELECTRON AND INTENSITY MODULATED PHOTON BEAMS IN RADIOTHERAPY**

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### **RADIATIVE HEAT TRANSFER**

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Academic Press Every chapter of Radiative Heat Transfer offers uncluttered nomenclature, numerous worked examples, and a large number of problems - many based on "real world" situations, making it ideal for classroom use as well as for self-study. The book's 22 chapters cover the four major areas in the field: surface properties; surface transport; properties of participating media; and transfer through participating media. Within each chapter, all analytical methods are developed in substantial detail, and a number of examples show how the developed relations may be applied to practical problems. · Extensive solution manual for adopting instructors · Most complete text in the field of radiative heat transfer · Many worked examples and end-of-chapter problems · Large number of computer codes (in Fortran and C++), ranging from basic problem solving aids to sophisticated research tools · Covers experimental methods

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### **MULTILEVEL ANALYSIS**

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### **TECHNIQUES AND APPLICATIONS, SECOND EDITION**

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Routledge This practical introduction helps readers apply multilevel techniques to their research. Noted as an accessible introduction, the book also includes advanced extensions, making it useful as both an introduction and as a reference to students, researchers, and methodologists. Basic models and examples are discussed in non-technical terms with an emphasis on understanding the methodological and statistical issues involved in using these models. The estimation and interpretation of multilevel models is demonstrated using realistic examples from various disciplines. For example, readers will find data sets on stress in hospitals, GPA scores, survey responses, street safety, epilepsy, divorce, and sociometric scores, to name a few. The data sets are available on the website in SPSS, HLM, MLwiN, LISREL and/or Mplus files. Readers are introduced to both the multilevel regression model and multilevel

structural models. Highlights of the second edition include: Two new chapters—one on multilevel models for ordinal and count data (Ch. 7) and another on multilevel survival analysis (Ch. 8). Thoroughly updated chapters on multilevel structural equation modeling that reflect the enormous technical progress of the last few years. The addition of some simpler examples to help the novice, whilst the more complex examples that combine more than one problem have been retained. A new section on multivariate meta-analysis (Ch. 11). Expanded discussions of covariance structures across time and analyzing longitudinal data where no trend is expected. Expanded chapter on the logistic model for dichotomous data and proportions with new estimation methods. An updated website at <http://www.joophox.net/> with data sets for all the text examples and up-to-date screen shots and PowerPoint slides for instructors. Ideal for introductory courses on multilevel modeling and/or ones that introduce this topic in some detail taught in a variety of disciplines including: psychology, education, sociology, the health sciences, and business. The advanced extensions also make this a favorite resource for researchers and methodologists in these disciplines. A basic understanding of ANOVA and multiple regression is assumed. The section on multilevel structural equation models assumes a basic understanding of SEM.

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## **SEQUENTIAL MONTE CARLO METHODS IN PRACTICE**

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Springer Science & Business Media Monte Carlo methods are revolutionizing the on-line analysis of data in many fields. They have made it possible to solve numerically many complex, non-standard problems that were previously intractable. This book presents the first comprehensive treatment of these techniques.

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## **ENVIRONMENTALSTATS FOR S-PLUS®**

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### **USER'S MANUAL FOR VERSION 2.0**

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Springer Science & Business Media This is the User's Manual to the software package EnvironmentalStats for S-PLUS, which is an add-on module for S-PLUS providing the first comprehensive software package for environmental scientists, engineers, and regulators. The new edition provides the documentation for Version 2.0 (which runs under S-PLUS 6.0), and includes extensive examples using real data sets.

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## **SUSTAINABLE SOLID WASTE MANAGEMENT**

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### **A SYSTEMS ENGINEERING APPROACH**

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John Wiley & Sons The interactions between human activities and the environment are complicated and often difficult to quantify. In many occasions, judging where the optimal balance should lie among environmental protection, social well-being, economic growth, and technological progress is complex. The use of a systems engineering approach will fill in the gap contributing to how we understand the intricacy by a holistic way and how we generate better sustainable solid waste management practices. This book also aims to advance interdisciplinary understanding of intertwined facets between policy and technology relevant to solid waste management issues interrelated to climate change, land use, economic

growth, environmental pollution, industrial ecology, and population dynamics.

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## **MULTILEVEL MODELS**

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### **APPLICATIONS USING SAS®**

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Walter de Gruyter This book covers a broad range of topics about multilevel modeling. The goal is to help readers to understand the basic concepts, theoretical frameworks, and application methods of multilevel modeling. It is at a level also accessible to non-mathematicians, focusing on the methods and applications of various multilevel models and using the widely used statistical software SAS®. Examples are drawn from analysis of real-world research data.

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### **SCIENTIFIC AND TECHNICAL AEROSPACE REPORTS**

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Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database.

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## **ADVANCES IN HYDROINFORMATICS**

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### **SIMHYDRO 2019 - MODELS FOR EXTREME SITUATIONS AND CRISIS MANAGEMENT**

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Springer Nature This book features a collection of extended papers based on presentations given at the SimHydro 2019 conference, held in Sophia Antipolis in June 2019 with the support of French Hydrotechnic Society (SHF), focusing on “Which models for extreme situations and crisis management?” Hydraulics and related disciplines are frequently applied in extreme situations that need to be understood accurately before implementing actions and defining appropriate mitigation measures. However, in such situations currently used models may be partly irrelevant due to factors like the new physical phenomena involved, the scale of the processes, and the hypothesis included in the different numerical tools. The availability of computational resources and new capacities like GPU offers modellers the opportunity to explore various approaches to provide information for decision-makers. At the same time, the topic of crisis management has sparked interest from stakeholders who need to share a common understanding of a situation. Hydroinformatics tools can provide essential information in crises; however, the design and integration of models in decision-support systems require further development and the engagement of various communities, such as first responders. In this context, methodologies, guidelines and standards are more and more in demand in order to ensure that the systems developed are efficient and sustainable. Exploring both the limitations and performance of current models, this book presents the latest developments based on new numerical schemes, high-performance computing, multiphysics and multiscale methods, as well as better integration of field-scale model data. As such, it will appeal to practitioners, stakeholders, researchers and engineers active in this field.

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## **TRANSFORMATIONAL SCIENCE AND TECHNOLOGY FOR THE CURRENT AND FUTURE FORCE**

**(WITH CD-ROM)**

### **PROTON THERAPY PHYSICS**

CRC Press Proton Therapy Physics goes beyond current books on proton therapy to provide an in-depth overview of the physics aspects of this radiation therapy modality, eliminating the need to dig through information scattered in the medical physics literature. After tracing the history of proton therapy, the book summarizes the atomic and nuclear physics background necessary for understanding proton interactions with tissue. It describes the physics of proton accelerators, the parameters of clinical proton beams, and the mechanisms to generate a conformal dose distribution in a patient. The text then covers detector systems and measuring techniques for reference dosimetry, outlines basic quality assurance and commissioning guidelines, and gives examples of Monte Carlo simulations in proton therapy. The book moves on to discussions of treatment planning for single- and multiple-field uniform doses, dose calculation concepts and algorithms, and precision and uncertainties for nonmoving and moving targets. It also examines computerized treatment plan optimization, methods for in vivo dose or beam range verification, the safety of patients and operating personnel, and the biological implications of using protons from a physics perspective. The final chapter illustrates the use of risk models for common tissue complications in treatment optimization. Along with exploring quality assurance issues and biological considerations, this practical guide collects the latest clinical studies on the use of protons in treatment planning and radiation monitoring. Suitable for both newcomers in medical physics and more seasoned specialists in radiation oncology, the book helps readers understand the uncertainties and limitations of precisely shaped dose distribution.

### **PATTERNS AND SKELETONS FOR PARALLEL AND DISTRIBUTED COMPUTING**

Springer Science & Business Media A significant proportion of computer software can now be labelled as parallel and distributed applications (i.e., a system of several independent software components cooperating in a common purpose, such as WWW applications). This book has 2 key objectives - to summarise key research work in high-level parallel and distributed computing over the past ten years and to highlight cutting edge techniques. It is also the first book to demonstrate the link between 2 key topics - skeletons and design patterns.

### **MODELS FOR INTENSIVE LONGITUDINAL DATA**

Oxford University Press A new class of longitudinal data has emerged with the use of technological devices for scientific data collection called Intensive Longitudinal Data. This volume features state-of-the-art applied statistical modelling strategies developed by leading statisticians and methodologists.

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## **BAYESIAN STRUCTURAL EQUATION MODELING**

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Guilford Publications "This book is meant as a guide for implementing Bayesian methods for latent variable models. I have included thorough examples in each chapter, highlighting problems that can arise during estimation, potential solutions, and guides for how to write up findings for a journal article. This book is structured into 12 main chapters, beginning with introductory chapters comprising Part I. Part II is comprised of Chapters 3-5. Each of these chapters deals with various models and techniques related to measurement models within SEM. Part III contains Chapters 6-7, on extending the structural model. Part IV contains Chapters 8-10, on longitudinal and mixture models. Finally, Part IV contains chapters that discuss special topics"--

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## **TRANSPORT PHENOMENA IN FIRES**

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WIT Press Controlled fires are beneficial for the generation of heat and power while uncontrolled fires, like fire incidents and wildfires, are detrimental and can cause enormous material damage and human suffering. This edited book presents the state-of-the-art of modeling and numerical simulation of the important transport phenomena in fires. It describes how computational procedures can be used in analysis and design of fire protection and fire safety. Computational fluid dynamics, turbulence modeling, combustion, soot formation, thermal radiation modeling are demonstrated and applied to pool fires, flame spread, wildfires, fires in buildings and other examples.

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## **CANCER NANOTECHNOLOGY**

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### **PRINCIPLES AND APPLICATIONS IN RADIATION ONCOLOGY**

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CRC Press Rapid advances in nanotechnology have enabled the fabrication of nanoparticles from various materials with different shapes, sizes, and properties, and efforts are ongoing to exploit these materials for practical clinical applications. Nanotechnology is particularly relevant in the field of oncology, as the leaky and chaotic vasculature of tumors—a hallmark of unrestrained growth—results in the passive accumulation of nanoparticles within tumors. Cancer Nanotechnology: Principles and Applications in Radiation Oncology is a compilation of research in the arena of nanoparticles and radiation oncology, which lies at the intersection of disciplines as diverse as clinical radiation oncology, radiation physics and biology, nanotechnology, materials science, and biomedical engineering. The book provides a comprehensive, cross-disciplinary survey of basic principles, research techniques, and outcomes with the goals of eventual clinical translation. Coverage includes A general introduction to fabrication, preferential tumor targeting, and imaging of nanoparticles The specific applications of nanomaterials in the realms of radiation therapy, hyperthermia, thermal therapy, and normal tissue protection from radiation exposure Outlooks for future research and clinical translation including regulatory issues for ultimate use of nanomaterials in humans Reflecting profound advances in the application of nanotechnology to radiation oncology, this comprehensive volume demonstrates how the unique physicochemical properties of nanoparticles lead to

novel strategies for cancer treatment and detection. Along with various computational and experimental techniques, each chapter highlights the most promising approaches to the use of nanoparticles for radiation response modulation.

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## **THEORETICAL MODELLING OF AEROHEATING ON SHARPENED NOSES UNDER RAREFIED GAS EFFECTS AND NONEQUILIBRIUM REAL GAS EFFECTS**

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Springer *Theoretical Modelling of Aeroheating on Sharpened Noses under Rarefied Gas Effects and Nonequilibrium Real Gas Effects* employs a theoretical modeling method to study hypersonic flows and aeroheating on sharpened noses under rarefied gas effects and nonequilibrium real gas effects that are beyond the scope of traditional fluid mechanics. It reveals the nonlinear and nonequilibrium features, discusses the corresponding flow and heat transfer mechanisms, and ultimately establishes an analytical engineering theory framework for hypersonic rarefied and chemical nonequilibrium flows. The original analytical findings presented are not only of great academic significance, but also hold considerable potential for applications in engineering practice. The study explores a viable new approach, beyond the heavily relied-upon numerical methods and empirical formulas, to the present research field, which could be regarded as a successful implementation of the idea and methodology of the engineering sciences.

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## **HANDBOOK OF ANATOMICAL MODELS FOR RADIATION DOSIMETRY**

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CRC Press Over the past few decades, the radiological science community has developed and applied numerous models of the human body for radiation protection, diagnostic imaging, and nuclear medicine therapy. The *Handbook of Anatomical Models for Radiation Dosimetry* provides a comprehensive review of the development and application of these computational models, known as "phantoms." An ambitious and unparalleled project, this pioneering work is the result of several years of planning and preparation involving 64 authors from across the world. It brings together recommendations and information sanctioned by the International Commission on Radiological Protection (ICRP) and documents 40 years of history and the progress of those involved with cutting-edge work with Monte Carlo Codes and radiation protection dosimetry. This volume was in part spurred on by the ICRP's key decision to adopt voxelized computational phantoms as standards for radiation protection purposes. It is an invaluable reference for those working in that area as well as those employing or developing anatomical models for a number of clinical applications. Assembling the work of nearly all major phantom developers around the world, this volume examines: The history of the research and development in computational phantoms Detailed accounts for each of the well-known phantoms, including the MIRD-5, GSF Voxel Family Phantoms, NCAT, UF Hybrid Pediatric Phantoms, VIP-Man, and the latest ICRP Reference Phantoms Physical phantoms for experimental radiation dosimetry The smallest voxel size (0.2 mm), phantoms developed from the Chinese Visible Human Project Applications for radiation protection dosimetry involving environmental, nuclear power plant, and internal contamination exposures Medical applications, including nuclear medicine therapy,

CT examinations, x-ray radiological image optimization, nuclear medicine imaging, external photon and proton treatments, and management of respiration in modern image-guided radiation treatment Patient-specific phantoms used for radiation treatment planning involving two Monte Carlo code systems: GEANT4 and EGS Future needs for research and development Related data sets are available for download on the authors' website. The breadth and depth of this work enables readers to obtain a unique sense of the complete scientific process in computational phantom development, from the conception of an idea, to the identification of original anatomical data, to solutions of various computing problems, and finally, to the ownership and sharing of results in this groundbreaking field that holds so much promise.

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## **THE REVIEWER'S GUIDE TO QUANTITATIVE METHODS IN THE SOCIAL SCIENCES**

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Routledge The Reviewer's Guide is designed for reviewers of research manuscripts and proposals in the social and behavioral sciences, and beyond. Its uniquely structured chapters address traditional and emerging quantitative methods of data analysis.

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## **MONTHLY CATALOG OF UNITED STATES GOVERNMENT PUBLICATIONS**

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### **NEW VISTAS IN ASTROPHYSICS**

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World Scientific This volume, marking the 20th Anniversary of the International School of Cosmic Ray Astrophysics, provides a wide-ranging overview of modern astrophysics — from the infra-red to X-rays and  $\gamma$ -rays, from neutrinos to galactic cosmic rays, and from shock wave acceleration to cosmology. The separate topics contain both background information and the newest results in the field, making the discussion suitable for the nonexpert and the expert alike. Featured are high energy neutrinos (including the new generation of experiments coming on line), new results from X-ray astronomy and from the infra-red, particle acceleration in astrophysical plasmas, new results on the composition of cosmic rays (spanning six decades in energy), and cosmology. Contents: Neutrinos and Gamma Rays Galactic Astrophysics and Cosmology Particle Acceleration and Supernovae Cosmic Rays in the Galaxy and the Heliosphere Readership: Students and researchers in astrophysics and high energy physics. Keywords: Astrophysics; Cosmic Ray; High Energy Neutrino; X-Ray Astronomy; Particle Acceleration; Cosmology

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## **PREDICTING SPECIES OCCURRENCES**

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### **ISSUES OF ACCURACY AND SCALE**

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Island Press Predictions about where different species are, where they are not, and how they move across a landscape or respond to human activities -- if timber is harvested, for instance, or stream flow altered -- are important aspects of the work of wildlife biologists, land managers, and the agencies and policymakers that govern natural resources. Despite the increased use and importance of model predictions,

these predictions are seldom tested and have unknown levels of accuracy. Predicting Species Occurrences addresses those concerns, highlighting for managers and researchers the strengths and weaknesses of current approaches, as well as the magnitude of the research required to improve or test predictions of currently used models. The book is an outgrowth of an international symposium held in October 1999 that brought together scientists and researchers at the forefront of efforts to process information about species at different spatial and temporal scales. It is a comprehensive reference that offers an exhaustive treatment of the subject, with 65 chapters by leading experts from around the world that: review the history of the theory and practice of modeling and present a standard terminology examine temporal and spatial scales in terms of their influence on patterns and processes of species distribution offer detailed discussions of state-of-the-art modeling tools and descriptions of methods for assessing model accuracy discuss how to predict species presence and abundance present examples of how spatially explicit data on demographics can provide important information for managers An introductory chapter by Michael A. Huston examines the ecological context in which predictions of species occurrences are made, and a concluding chapter by John A. Wiens offers an insightful review and synthesis of the topics examined along with guidance for future directions and cautions regarding misuse of models. Other contributors include Michael P. Austin, Barry R. Noon, Alan H. Fielding, Michael Goodchild, Brian A. Maurer, John T. Rotenberry, Paul Angermeier, Pierre R. Vernier, and more than a hundred others. Predicting Species Occurrences offers important new information about many of the topics raised in the seminal volume Wildlife 2000 (University of Wisconsin Press, 1986) and will be the standard reference on this subject for years to come. Its state-of-the-art assessment will play a key role in guiding the continued development and application of tools for making accurate predictions and is an indispensable volume for anyone engaged in species management or conservation.

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## **WATER RESOURCES YIELD**

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Water Resources Publication This book will benefit graduate students, university professors and consultants working in the area of surface water resources yield planning and assessment. It is very easy to understand and includes well-presented worked examples, which will facilitate the understanding of some of the complex storage-yield-performance techniques described in the book. This book is one of the most complete reference textbooks on water resources yield assessment and is a must for all those engaged in this subject.

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## **SIC MATERIALS AND DEVICES**

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### **VOLUME 1**

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## **SIC MATERIALS AND DEVICES**

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World Scientific After many years of research and development, silicon carbide has emerged as one of the most important wide band gap semiconductors. The first commercial SiC devices OCo power switching Schottky diodes and high temperature MESFETs OCo are now on the market. This two-volume book gives a comprehensive,

up-to-date review of silicon carbide materials properties and devices. With contributions by recognized leaders in SiC technology and materials and device research, SiC Materials and Devices is essential reading for technologists, scientists and engineers who are working on silicon carbide or other wide band gap materials and devices. The volumes can also be used as supplementary textbooks for graduate courses on silicon carbide and wide band gap semiconductor technology. Contents: SiC Material Properties (G Pensl et al.); SiC Homoepitaxy and Heteroepitaxy (A S Bakin); Ohmic Contacts to SiC (F Roccaforte et al.); Silicon Carbide Schottky Barrier Diode (J H Zhao et al.); High Power SiC PiN Rectifiers (R Singh); Silicon Carbide Diodes for Microwave Applications (K Vassilevski); SiC Thyristors (M E Levinshtein et al.); Silicon Carbide Static Induction Transistors (G C DeSalvo). Readership: Technologists, scientists, engineers and graduate students working on silicon carbide or other wide band gap materials and devices."