

Design Time Ratios Langevin

The 1985/86 apparition of Halley's Comet turned out to be the most important apparition of a comet ever. It provided a worldwide science community with a wealth of exciting new discoveries, the most remarkable of which was undoubtedly the first image of a cometary nucleus. Halley's Comet is the brightest periodic comet, and the most famous of the 750 known comets. With its 76-year period, its recent appearance was truly a "once-in-a-lifetime" observational opportunity. The 1985/86 apparition was the thirtieth consecutive recorded apparition. Five apparitions ago, the English astronomer Edmond Halley discovered the periodicity of "his" comet and correctly predicted its return in 1758, a triumph for science best appreciated in the context of contemporary views, or rather fears, about comets at that time. The increasingly rapid progress in technological development is very much apparent when one compares the dominant tools for cometary research during Halley's next three apparitions: in 1835 studies were made based on drawings of the comet; in 1910 photographic plates were used; while in March 1986 an armada of six spacecraft from four space agencies approached the comet and carried out in situ measurements, 1 AU from the Earth. In 1910, nobody could have dreamed that this was possible, and today it is equally difficult to anticipate what scientists will be able to achieve in 2061.

Nonlinear Approaches in Engineering Applications 2 focuses on the application of nonlinear approaches to different engineering and science problems. The selection of the topics for this book is based on the best papers presented in the ASME 2010 and 2011 in the tracks of Dynamic Systems and Control, Optimal Approaches in Nonlinear Dynamics and Acoustics, both of which were organized by the editors. For each selected topic, detailed concept development, derivations and relevant knowledge are provided for the convenience of the readers. The topics that have been selected are of great interest in the fields of engineering and physics and this book is designed to appeal to engineers and researchers working in a broad range of practical topics and approaches.

Advances in Hydrosience, Volume 1 considers the physical theories and mathematical analyses of a broad spectrum of specialized subjects in various branches of hydrosience, including hydrodynamics, hydrology, hydrochemistry, hydrophysics, hydrobiology, hydrometeorology, oceanology, hydrogeology, naval science, and water resources. This book contains five chapters, and begins with a presentation of scientific and engineering advances in the field of sonar and hydroelasticity. The following chapter deals with the fundamental principles and concepts of statistical hydrodynamics in porous media and their significance in various engineering applications. These topics are followed by a discussion on the concepts of theoretical incompressible fluid dynamics, with a special emphasis on the field of hydroballistics. The last chapter provides first a brief introduction to the basic principles and fundamental equations of well hydraulics, followed by a survey of its importance to water economy in arid and semiarid regions of the world. This book will be of great value to research workers and practitioners in the interdisciplinary field of hydrosience.

Publications of the National Bureau of Standards ... Catalog

Navy Shipbuilding Acquisition Programs and Budget Requirements of the Navy's Shipbuilding and Construction Plan

Logistics Systems: Design and Optimization

Proceedings of the 4th Symposium on Ultrasonic Electronics

Physics Briefs

Nuclear Science Abstracts

Advanced Intelligent Computing Theories and Applications With Aspects of Contemporary Intelligent Computing Techniques Springer

In a context of global competition, the optimization of logistics systems is inescapable. Logistics Systems: Design and Optimization falls within this perspective and presents twelve chapters that well illustrate the variety and the complexity of logistics activities. Each chapter is written by recognized researchers who have been commissioned to survey a specific topic or emerging area of logistics. The first chapter, by Riopel, Langevin, and Campbell, develops a framework for the entire book. It classifies logistics decisions and highlights the relevant linkages to logistics decisions. The intricacy of these linkages demonstrates how thoroughly the decisions are interrelated and underscores the complexity of managing logistics activities. Each of the chapters focus on quantitative methods for the design and optimization of logistics systems.

Driven in part by the development of genomics, proteomics, and bioinformatics as new disciplines, there has been a tremendous resurgence of interest in physical methods to investigate macromolecular structure and function in the context of living cells. This volume in Methods in Cell Biology is devoted to biophysical techniques in vitro and their applications to cellular biology. Biophysical Tools for Biologists covers methods-oriented chapters on fundamental as well as cutting-edge techniques in molecular and cellular biophysics. This book is directed toward the broad audience of cell biologists, biophysicists, pharmacologists, and molecular biologists who employ classical and modern biophysical technologies or wish to expand their expertise to include such approaches. It will also interest the biomedical and biotechnology communities for biophysical characterization of drug formulations prior to FDA approval. Describes techniques in the context of important biological problems Delineates critical steps and potential pitfalls for each method Includes full-color plates to illustrate techniques

With Aspects of Contemporary Intelligent Computing Techniques

Advances in Liquid Crystals

With Applications to Stochastic Problems in Physics, Chemistry and Electrical Engineering

Organic Spintronics

Publications

In Vitro Techniques

Prigogine and Rice's highly acclaimed series, Advances in Chemical Physics, provides a forum for critical, authoritative reviews of current topics in every area of chemical physics. Edited by J.K. Vij, this volume focuses on recent advances in liquid crystals with significant, up-to-date chapters authored by internationally recognized researchers in the field.

Reflecting the substantial increase in popularity of quadrupole ion traps and Fourier transform ion cyclotron resonance (FT-ICR) mass spectrometers, Practical Aspects of Trapped Ion Mass Spectrometry, Volume IV: Theory and Instrumentation explores the historical origins of the latest advances in this expanding field. It covers new methods for trapping ions, such as the Orbitrap™, the digital ion trap (DIT), the rectilinear ion trap (RIT), and the toroidal ion trap; the development and application of the quadrupole ion trap (QIT) and the quadrupole linear ion trap (LIT); and the introduction of high-field asymmetric waveform ion mobility spectrometry (FAIMS). After a combined appreciation and historical survey of mass spectrometry and a discussion of how improved capabilities for microfabrication have led to interest in arrays of ion traps, the book examines the theory and practice of the Orbitrap mass analyzer, the rectangular waveform-driven DIT mass spectrometer, FAIMS, and ion traps with circular geometries. It next discusses ion accumulation for increasing sensitivity in FT-ICR spectrometry, a radio frequency-only mode event for Penning traps in FT-MS, and an FT operating mode applied to a 3D-QIT. The text then presents three behavioral aspects of quadrupole rod sets, before illustrating the development of the 3D-QIT in recent years. The final chapters explore photodissociation in ion traps and the chemical and photochemical studies of metal dication complexes in a 3D-QIT. In this volume that spans twenty-one chapters, a stellar panel of leading experts and up-and-coming researchers presents a cohesive, global, and up-to-date view of the practical aspects of using trapped ion devices. A companion to Volume V:

Applications of Ion Trapping Devices, the book authoritatively covers the theory involved as well as the instrumentation currently used in this dynamic field.

Although the highly anticipated petascale computers of the near future will perform at an order of magnitude faster than today's quickest supercomputer, the scaling up of algorithms and applications for this class of computers remains a tough challenge. From scalable algorithm design for massive concurrency to performance analyses and scientific visualization, Petascale Computing: Algorithms and Applications captures the state of the art in high-performance computing algorithms and applications. Featuring contributions from the world's leading experts in computational science, this edited collection explores the use of petascale computers for solving the most difficult scientific and engineering problems of the current century. Covering a wide range of important topics, the book illustrates how petascale computing can be applied to space and Earth science missions, biological systems, weather prediction, climate science, disasters, black holes, and gamma ray bursts. It details the simulation of multiphysics, cosmological evolution, molecular dynamics, and biomolecules. The book also discusses computational aspects that include the Uintah framework, Enzo code, multithreaded algorithms, petascale performance analysis tools, multilevel finite element solvers, finite element code development, Charm++, and the Gactus framework. Supplying petascale tools, programming methodologies, and an eight-page color insert, this volume addresses the

challenging problems of developing application codes that can take advantage of the architectural features of the new petascale systems in advance of their first deployment.

Petascale Computing

Publications of the National Institute of Standards and Technology ... Catalog

1966-1976

The Langevin Equation

Japanese Journal of Applied Physics

Visualizing with Text

Dr. Sergio Decherchi and Dr. Andrea Cavalli are co-founders of BIKI Technologies s.r.l. - a company that commercializes a Molecular Dynamics-based software suite for drug discovery. All other Topic Editors declare no competing interests with regards to the Research Topic subject.

A comprehensive and up-to-date collection of papers on the role of electrodynamic activities in biocommunication is presented in this volume. It provides research findings, practical applications and theoretical investigations linking phenomena as diverse as the sensitivity of organisms to ultraweak ELF electromagnetic fields, noninvasive in vivo measurements of the electrical activity of the heart, and the role of electromagnetic fields in the development of the nervous system. The volume begins with chapters on the historical perspectives and the biophysical background necessary for understanding bioelectrical phenomena. This is followed by chapters dealing with the biological effects of external electromagnetic fields on living organisms and coherent light emission from biological systems. The volume continues with chapters on the historical perspectives and the biophysical background necessary for understanding bioelectrical phenomena. This is followed by chapters dealing with the biological effects of external electromagnetic fields on living organisms and coherent light emission from biological systems. The volume continues with chapters on the historical perspectives and the biophysical background necessary for understanding bioelectrical phenomena. This is followed by chapters dealing with the biological effects of external electromagnetic fields on living organisms and coherent light emission from biological systems.

related activities and their practical applications; and finally, theoretical perspectives and overviews. It is recommended for undergraduates, graduates and research scientists in all disciplines who wish to be informed of the emerging discipline of bioelectrodynamics. List of Contributors: M Bischof, J J Chang, A S Davydov, D Edmonds, A Frenkel, G Fröhlich, R P Liburdy, W P Mei, R Pethig, F A Popp, P T Saunders, C W Smith, T Y Tsong, U Warnke, T M Wu, C L Zhang. Contents: The History of Bioelectromagnetism (M Bischof) Electromagnetism and Living Systems (F A Popp) Biological Effects of Weak Electromagnetic Fields (C W Smith) Possible Mechanisms for Biological Effects of Weak Electromagnetic Fields (M W Ho et al) Liquid Crystalline Mesophases in Living Organisms (M W Ho & P T Saunders) Dielectric Properties of Cell Membranes (R Pethig) Dynamic Cell-Membrane Events Following the Application of Signal-Pulse Electric Fields (J J Chang et al) On the Biological Nature of Biophotons (W P Mei) Nonsubstantial Biocommunication in Terms of Dicks's Theory (F A Popp et al) Estimates of Brain Activity Using Magnetic Field Tomography and Large Scale Communication via Biophotons (R Pethig) Dynamic Cell-Membrane Events Following the Application of Signal-Pulse Electric Fields (J J Chang et al) On the Biological Nature of Biophotons (W P Mei) Nonsubstantial Biocommunication in Terms of Dicks's Theory (F A Popp et al) Estimates of Brain Activity Using Magnetic 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