Capillarity Today Proceedings Of An Advanced Workshop On Capillarity Held In Memoriam Raymond Defay At Brussels Belgium 7 10 May 1990 Lecture Notes In Physics Vol 386

The Third International Colloquium on Differential Equations was organized by UNESCO and the Plovdiv Technical University, with the help of many international mathematical organizations, and was held in Plovdiv, Bulgaria, 18--22 August 1992. This proceedings volume contains selected invited talks which deal with the following topics: -- impulsive differential equations -- nonlinear differential equations -- differential equations with maxima -- applications of differential equations

Beginning with Nobel laureate I. Prigogine's lecture "Entropy Revisited", this book gives a well-balanced survey on capillarity properties at liquid and solid interfaces. It approaches the subject from both the microscopic (statistical mechanics) and the macroscopic (mechanics and thermodynamics) points of view. Experimental aspects and technological applications are also presented. The book addresses researchers and graduate students of physics and physical chemistry.

Vol. 12 (from May 1876 to May 1877) includes: Researches in telephony / by A. Graham Bell.

Vol. 25: The distribution of Hepaticæ in Scotland, by S.M. Macvicar.

This book is devoted to the analysis of approximate solution techniques for differential equations, based on classical orthogonal polynomials. These techniques are popularly known as spectral methods. In the last few decades, there has been a growing interest in this subject. As a matter of fact, spectral methods provide a competitive alternative to other standard approximation techniques, for a large variety of problems. Initial ap plications were concerned with the investigation of periodic solutions of boundary value problems using trigonometric polynomials. Subsequently, the analysis was extended to algebraic polynomials. Expansions in orthogonal basis functions were preferred, due to their high accuracy and flexibility in computations. The aim of this book is to present a preliminary mathematical background for be ginners who wish to study and perform numerical experiments, or who wish to improve their skill in order to tackle more specific applications. In addition, it furnishes a com prehensive collection of basic formulas and theorems that are useful for implementations at any level of complexity. We tried to maintain an elementary exposition so that no experience in functional analysis is required.

Crystal Growth Processes Based on Capillarity closely examines crystal growth technologies, like Czochralski, Floating zone, and Bridgman. The up-to-date reference contains detailed technical and applied information, especially on the difficulty of crystal shape control. Including practical examples and software applications, this book provides both theoretical and experimental sections. Edited by a well-respected academic with over twenty-five years of experience in this field, the text is an excellent resource for professionals in crystal growth as well as for students in understanding the fundamentals and the technology of crystal growth.

This volume contains ten lectures presented in the series ULB Lectures in Nonlinear Optics at the Universite Libre de Bruxelles during the period October 28 to November 4, 1991. A large part of the first six lectures is taken from material prepared for a book of somewhat larger scope which will be published, by Springer under the title Quantum Statistical Methods in Quantum Optics. The principal reason for the early publication of the present volume concerns the material contained in the last four lectures. Here I have put together, in a more or less systematic way, some ideas about the use of stochastic wavefunctions in the theory of open quantum optical systems. These ideas were developed with the help of two of my students,

Murray Wolinsky and Liguang Tian, over a period of approximately two years. They are built on a foundation laid down in a paper written with Surendra Singh, Reeta Vyas, and Perry Rice on waiting-time distributions and wavefunction collapse in resonance fluorescence [Phys. Rev. A, 39, 1200 (1989)]. The ULB lecture notes contain my first serious atte~pt to give a complete account of the ideas and their potential applications. I am grateful to Professor Paul Mandel who, through his invitation to give the lectures, stimulated me to organize something useful out of work that may, otherwise, have waited considerably longer to be brought together.

New research-case histories and operating data-on every conceivable facet of today's big problem are detailed in the latest Purdue Book-with unparalleled appropriate, usable information and data for your current industrial waste problems from the May 1989 Conference.

Report for 1922 includes a summarized account of preliminary and organization meetings in 1919,1920 and 1921.

These proceedings of a well-established conference on numerical methods, calculations, and modelling in fluid dynamics concentrates on five topics: multidimensional upwinding, turbulent flows, domain decomposition methods, unstructured grids, and flow visualization, and it includes papers presented at a workshop on all-vertex schemes. All papers have been carefully refereed.

'Fractal geometry addressesitselfto questions that many people have been asking themselves. It con cerns an aspect of Nature that almost everybody had been conscious of, but could not address in a formal fashion. ' 'Fractal geometry seems to be the proper language to describe the complezity of many very compli cated shapes around us. ' (Mandelbrot, 1990a) 'I believe that fractals respond to a profound un easiness in man. ' (Mandelbrot, 1990b) The catchword fractal, ever since it was coined by Mandelbrot (1975) to refer to a class of abstract mathematical objects that were already known at the turn ofthe 19th century, has found an unprecedented resonance both inside and outside the scientific community. Fractal concepts, far more than the concepts of catastrophe theory introduced a few years earlier, are currently being applied not only in the physical sciences, but also in biology and medicine (Goldberger and West 1987). In the mid-eighties, Kadanoff (1986) asked the question: 'Why all the fuss about /ractals'! '. He offered a twofold answer: in the first place, it is 'because of the practical, technological importance of fractal objects'. Indeed he emphasised the relevance of these structures for materials scientists and oil drilling engineers, in search of structures with novel properties, or models for the flow of oil through the soil. His second answer was: 'Because of the intellectual interest of fractals '.

This book is aimed at theoretical and mathematical physicists and mathematicians interested in modern gravitational physics. I have thus tried to use language familiar to readers working on classical and quantum gravity, paying attention both to difficult calculations and to existence theorems, and discussing in detail the current literature. The first aim of the book is to describe recent work on the problem of boundary conditions in one-loop quantum cosmology. The motivation of this research was to under stand whether supersymmetric theories are one-loop finite in the presence of boundaries, with application to the boundary-value problemsoccurring in quantum cosmology. Indeed, higher-loop calculations in the absence of boundaries are already available in the litera ture, showing that supergravity is not finite. I believe, however, that one-loop calculations in the presence of boundaries are more fundamental, in that they provide a more direct check of the inconsistency of supersymmetric quantum cosmology from the perturbative point of view. It therefore appears that higher-order calculations are not strictly needed, if the one-loop test already yields negative results. Even though the question is not yet settled, this research has led to many interesting, new applications of areas of theoretical and mathematical physics such as twistor theory in flat space, self-adjointness theory, the generalized Riemann zeta-function, and the theory of boundary counterterms in super gravity. I

have also compared in detail my work with results by other authors, explaining, whenever possible, the origin of different results, the limits of my work and the unsolved problems.

This book is a compilation of selected papers from the 1st Indo-China Research Series in Geotechnical and Geoenvironmental Engineering held in May 2020 online. The webinar series was held at a time of COVID-19 pandemic, when there is lack of physical connectivity. The cutting-edge research topics in Civil and Environmental Engineering ranging from bio-geotechnology, methane gas hydrates, frozen soils, rock testing, and related high-rise buildings response under wind loading will be covered. The contents make valuable contributions to academic researchers and engineers in the industry and provide a platform for demonstrating joint research between scientists from India and China. These are the first proceedings of its kind to demonstrate and motivate more joint research cooperation in Civil and Environmental Engineering between two countries. It was done mainly to motivate youth research scholars to understand each other and develop long-term cooperation.

These proceedings deal with the fundamentals and applications of poromechanics to geomechanics, material sciences, geophysics, acoustics and biomechanics. They discuss the state of the art in such topics as constitutive modelling and upscaling methods.

Vol. 1 includes the Constitution, by-laws, list of members and annual report.

Concrete will be the key material for Mankind to create the built environment of the next millennium. The requirements of this infrastructure will be both demanding, in terms of technical performance and economy, and yet be greatly varied, from architectural masterpieces to the simplest of utilities.Concrete durability and repair technology forms the Proceedings of the three day International Conference held during the Congress, Creating with Concrete, 6-10 September 1999, organised by the Concrete technology Unit, University of Dundee.

This book presents collaborative research presented by experts in the field of nonlinear science provides the reader with contemporary, cutting-edge, research works that bridge the gap between theory and device realizations of nonlinear phenomena. The conference provides a unique forum for applications of nonlinear systems while solving practical problems in science and engineering. Topics include: chaos gates, social networks, communication, sensors, lasers, molecular motors, biomedical anomalies, and stochastic resonance. This book provides a comprehensive report of the various research projects presented at the International Conference on Applications in Nonlinear Dynamics (ICAND 2018) held in Maui, Hawaii, 2018. It can be a valuable tool for scientists and engineering interested in connecting ideas and methods in nonlinear dynamics with actual design, fabrication and implementation of engineering applications or devices.

In solid-state physics especially topological techniques have turned out to be extremely useful for modelling and explaining physical properties of matter. This book illustrates various applications of algebraic topology in classical field theory (non-linear sigma-models) and in quantizationsin multiply connected spaces (anyons). It treats Chern-Simon Lagrangians, Berry's phase, the polarization of light and the fractional quantum Hall effect.

List of members in vol. 1, 3, 6, 8, 11.

The author considers meteorology as a part of fluid dynamics. He tries to derive the properties of atmospheric flows from a rational analysis of the Navier-Stokes equations, at the same time analyzing various types of initial and boundary problems. This approach to simulate nature by models from fluid dynamics will be of interest to both scientists and students of physics and theoretical meteorology.

The contributions in this volume discuss the magnetic structures in the outer atmospheres of active late-type stars, and in particular the various methods available for imaging surface features on these objects. Emphasis has been laid upon multiwavelength studies of the phenomena and the application of solar astrophysics to stellar objects. The book is

recommended to research workers or postgraduate students in stellar astrophysics.

The study of Riemann problems has undergone a strong, steady growth in the last decade. The general direction of the research has headed toward understanding the wave structure of the solutions of more physically realistic systems. These systems fail either or both of the two main restrictions of the classical theory - that the system be strictly hyperbolic or genuinely nonlinear. The systems that have been studied tend to fall into the following broad classes: real gas dynamics (including combustion), visco-elastic materials, phase transitions, and multiphase flow in porous media. In addition to their usefulness in large-scale calculations, computational schemes have vastly improved the handling of discontinuity behavior.This volume contains the proceedings of the AMS-IMS-SIAM Joint Summer Research Conference on Current Progress in Hyperbolic Systems: Riemann Problems and Computations, held at Bowdoin College in July 1988. The papers presented here provide a complete picture of recent research by some of the leaders in this field. Graduate students and beginning researchers will find this book a useful introduction to current work in this area.

The lectures of this international school were designed to present overviewsof the basic concepts, current research and research developments of semiconductor quantum devices not only to young scientists, but also to graduate and postgraduate students. This book provides the basic fundamentals helpful for the future work of young researchers: thebasic principles of the different growth methods and of the structural, electrical and optical properties of semiconductor heterostructures. Thebook covers a wide range of the scientific research in the field of semiconductor quantum devices and focuses on links between physics and technology. Particular relevance is given to the technology, fabrication andphysics of electronic and opto-electronic devices.

Vols. for 1975- include publications cataloged by the Research Libraries of the New York Public Library with additional entries from the Library of Congress MARC tapes.

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