From Nano to Space [Applied Mathematics Inspired by Roland Bulirsch /

Breitner, Michael H.,
editor

Monografía

Graduate students and postgraduates in Mathematics, Engineering and the Natural Sciences want to understand Applied Mathematics for the solution of everyday problems. Scholars of Roland Bulirsch working at universities, at research institutions and in industry combine research and review papers in this anthology. Their work is summed up under the title "From Nano to Space Applied Mathematics Inspired by Roland Bulirsch". More than 20 contributions are divided into scales: nano, micro, macro, space and real life. The contributions survey current research and present case studies very interesting and informative for both graduate students and postgraduates. The contributions show how modern Applied Mathematics influences our everyday lives. Several contributions include complex graphics and illustrations, many of them in color

Título: From Nano to Space Recurso electrónico] Applied Mathematics Inspired by Roland Bulirsch edited by Michael H. Breitner, Georg Denk, Peter Rentrop

Descripción física: online resource

Contenido: Roland Bulirsch - 75th Birthday -- Roland Bulirsch - 75th Birthday -- Academic Genealogy of Roland Bulirsch -- Academic Genealogy of Roland Bulirsch -- Mathematics and Applications in Nanoscale -- Circuit Simulation for Nanoelectronics -- Transformation Qualities of Warped Multirate Partial Differential Algebraic Equations -- An Improved Method to Detect Riblets on Surfaces in Nanometer Scaling Using SEM -- Mathematics and Applications in Microscale -- Numerical Simulation of a Molten Carbonate Fuel Cell by Partial Differential Algebraic Equations -- Rigid Registration of Medical Images by Maximization of Mutual Information -- Early Delay with Hopf Bifurcation -- A Singular Value Based Probability Algorithm for Protein Cleavage -- Calculation of Magnetic Fields with Finite Elements -- Mathematics and Applications in Macroscale -- Smooth Approximation and Rendering of Large Scattered Data Sets -- Fast Projected Convolution of Piecewise Linear Functions on Non-equidistant Grids -- Intrusive versus Non-Intrusive Methods for Stochastic Finite Elements -- Walking, Running and Kicking of Humanoid Robots and Humans -- Numerical Simulation of Shape Memory Actuators in Mechatronics -- Mathematics and Applications in Real World -- Customer Tailored Derivatives: Simulation, Design and Optimization with the WARRANT-PRO-2 Software -- Complete the Correlation Matrix -- Accelerating the Distributed Multiplication Protocol with Applications to the Distributed Miller-Rabin Primality Test --

Mathematics and Applications in Space -- Optimal Control of Free-Floating Spin-Stabilized Space Robotic Systems -- Computing the Earth Gravity Field with Spherical Harmonics -- Integrated Guidance and Control for Entry Vehicles -- A Note on Nonsmooth Optimal Control Problems

ISBN: 9783540742388

Autores: Denk, Georg., editor Rentrop, Peter., editor

Punto acceso adicional serie-Título: Springer Books
