



## Nonlinear and Complex Dynamics

By Machado, José A. Tenreiro / Baleanu, Dumitru

Condition: New. Publisher/Verlag: Springer, Berlin | Applications in Physical, Biological, and Financial Systems | This book examines nonlinear dynamics - chaos, fractals and stochasticities - in such diverse settings as celestial mechanics including impact dynamics, financial systems including inflation and biochemical systems, such as neural and hydro-dynamic systems. | Nonlinear Dynamics of Complex Systems describes chaos, fractal and stochasticities within celestial mechanics, financial systems and biochemical systems. Part I discusses methods and applications in celestial systems and new results in such areas as low energy impact dynamics, low-thrust planar trajectories to the moon and earth-to-halo transfers in the sun, earth and moon. Part II presents the dynamics of complex systems including bio-systems, neural systems, chemical systems and hydro-dynamical systems. Finally, Part III covers economic and financial systems including market uncertainty, inflation, economic activity and foreign competition and the role of nonlinear dynamics in each. | Part I On the Mechanisms of Natural Transport in the Solar System.- A Method to Design Efficient Low-Energy, Low-Thrust Transfers to the Moon.- Low-Energy Earth-to-Halo Transfers in the Earth-Moon Scenario with Sun-Perturbation.- On the relation between the Bicircular model and the Coupled Circular Restricted Three-Body problem approximation.- Adaptive Remeshing Applied to Reconfiguration of Spacecraft Formations.-...



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