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Collana	Mathematics and biosciences in interaction
Altri autori (Persone)	HoskingR. J VenturinoEzio
Disciplina	511/.8
Soggetti	System analysis - Simulation methods Science - Mathematical models Economics - Mathematical models Management science - Mathematical models Electronic books.
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Mathematical Models of Pattern Formation in Planktonic Predation-Diffusion Systems: A Review -- Toward a General Theory of Ecosystem Stability: Plankton-Nutrient Interaction as a Paradigm -- Nutrient, Non-toxic Phytoplankton, Toxic Phytoplankton and Zooplankton Interaction in an Open Marine System -- Stability and Optimal Harvesting in a Stage Structure Predator-Prey Switching Strategy -- Insecticidal Bt Crops Under Massive Bt-resistant Pest Invasion: Mathematical Simulation -- Reducing the Emission of Pollutants in Industrial Wastewater through the Use of Membrane Bioreactors -- Model Hysteresis Dimer Molecule. I. Equilibrium Properties -- Model Hysteresis Dimer Molecule. II. Deductions from Probability Profiles -- Mathematical Modelling and Simulation of Coronary Blood Flow -- Modelling Vaccine Protocols -- Modelling the Response of Intracranial Pressure to Microgravity Environments -- “Noisy Oncology”: Some Caveats in using Gaussian Noise in Mathematical Models of

Chemotherapy -- Phylogenetic Analysis, Split Systems and Boolean Functions -- Exponential Convergence Analysis of DCNNs having Unbounded Activations and Inhibitory Self-Connections -- The Single-Vendor Multi-Buyer Integrated Inventory Problem: an Heuristic Solution Technique -- A Term Structured Volatility Model of Poll Data and its Application to Election Timing -- Estimation for the Semiparametric Transformation Model under General Censorship -- Integer Programming Models of Bookmobile Routing -- Instability and Sustained Oscillations in Neo-Classical Growth Models with Unemployment -- A Bass-type Model for a Dynamic Market with Logistic Growth -- A Wavelet Neural Network applied to Textile Spinning.

Sommario/riassunto

The construction of mathematical models is an essential scientific activity. Mathematics has long been associated with developments in the exact sciences and engineering, but more recently mathematical modelling has been used to investigate complex systems that arise in many other fields. The contributors to this book demonstrate the application of mathematics to modern research topics in ecology and environmental science, health and medicine, phylogenetics and neural networks, theoretical chemistry, economics and management. The reader will find some review papers outlining current research directions in hot topics such as pattern formation and applications to medicine, and more targeted research papers on current developments in the various disciplines included. Both should provide insight and inspiration for further work on these subjects. The extensive relevant literature cited in some of the survey expository articles is another feature.