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Titolo	Nonlinear Dynamics and Complexity [[electronic resource]] : Mathematical Modelling of Real-World Problems // edited by Carla M. A. Pinto
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ISBN	9783031066320 9783031066313
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (496 pages)
Collana	Nonlinear Systems and Complexity, , 2196-0003 ; ; 36
Disciplina	530.15
Soggetti	Multibody systems Vibration Mechanics, Applied Mathematical models Computational complexity Engineering mathematics Engineering - Data processing Multibody Systems and Mechanical Vibrations Mathematical Modeling and Industrial Mathematics Computational Complexity Mathematical and Computational Engineering Applications Sistemas no lineals Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Analysis of the temporal evolution of Plumeria bud by measuring its complex impedance: Detection of the fractal element with complex conjugated power-law exponents -- On the stochastic extension of the classical epidemiological compartmental model -- Repellers for the Laguerre Iteration Function -- Mathematical modeling of HBV infection with DNA-containing capsids and therapy -- New fractional derivative for fuzzy functions and its applications on time scale -- A novel high-

efficiency piezoelectric energy harvester designed to harvest energy from random excitation -- Random vibration of one-dimensional acoustic black hole beam -- Statistics of topological defects in one-dimensional structures based on the Kibble Zurek Mechanism -- Dynamical analysis of a Prabhakar fractional chaotic autonomous system -- Exact solutions of two PDEs which govern the 3D Inverse Problem of Dynamics -- Target Tracking Algorithm based on YOLOv3 And Feature Point Matching -- Composition of Fuzzy Numbers with Chaotic Maps -- Invariant Manifolds in the Second Order Maxwell Bloch Equations -- Geometric parametrisation of Lagrangian Descriptors for 1 degree-of-freedom systems -- Computing chaotic eigenvectors in narrow 1 energy windows -- Analytical and experimental study of a Hindmarsh-Rose neuron system -- Pricing Options Under Time-Fractional Model using Adomian Decomposition -- Dynamical Analysis of a Three-Dimensional Non-Autonomous Chaotic Circuit Based on a Physical Memristor -- Compartmental Poisson stability in non-autonomous differential equations -- A computational probabilistic calibration of the Pielou's model to study the growth of breast tumours. A comparative study -- About the simulations of Maxwell equations. Some applications -- A Pandemic Three-Sided Coin -- Global stability analysis of two-strain SEIR epidemic model with quarantine strategy.

Sommario/riassunto

This book collects a range of contributions on nonlinear dynamics and complexity, providing a systematic summary of recent developments, applications, and overall advances in nonlinearity, chaos, and complexity. It presents both theories and techniques in nonlinear systems and complexity and serves as a basis for more research on synchronization and complexity in nonlinear science as well as a mechanism to fast-scatter the new knowledge to scientists, engineers, and students in the corresponding fields. Written by world-renown experts from across the globe, the collection is ideal for researchers, practicing engineers, and students concerned with machinery and controls, manufacturing, and controls. Illustrates methods for finding chaos from periodic motions; Includes applications to nonlinear physics and nonlinear engineering; Maximizes understanding of differential-invariant solutions, impulsive differential equations, chaos, and order.
