1. Record Nr. UNINA9910373952403321

Titolo	New Trends in Nonlinear Dynamics : Proceedings of the First International Nonlinear Dynamics Conference (NODYCON 2019), Volume III / / edited by Walter Lacarbonara, Balakumar Balachandran, Jun Ma, J. A. Tenreiro Machado, Gabor Stepan
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-34724-9
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XXIV, 355 p. 153 illus., 131 illus. in color.)
Disciplina	531
Soggetti	Electrodynamics Multibody systems Vibration Mechanics, Applied Nonlinear optics Dynamics Nonlinear theories Engineering design Classical Electrodynamics Multibody Systems and Mechanical Vibrations Nonlinear Optics Applied Dynamical Systems Engineering Design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part A: Smart materials, metamaterials, composite and nanocomposite materials and structures -- Tunable Bleustein-Gulyaev permittivity sensors -- Nonlinear metamaterials with multiple local mechanical resonators: analytical and numerical analyses -- Nonlinear vibration analysis of metamaterial honeycomb sandwich structures with negative Poisson's ratio -- Wave propagation phenomena in nonlinear elastic metamaterials -- Numerical simulations in nonlinear elastic

metamaterials with nonlocal interaction -- Nonlinear dynamic response of nanocomposite cantilever beams -- A numerical strategy for multi-stable nanocomposite shells -- Parametric vibrations of functionally graded sandwich plates with complex form -- Nonlinear oscillation of a FG cylindrical shell on a discontinuous elastic foundation -- Nonlinear fracture dynamic analysis of double cantilever beam sandwich specimens -- Nonlinear vibration analysis of a sandwich beam and assessment of the dynamic behavior -- Dynamic buckling of FGM cylindrical shells under torsional impact loads -- Part B: MEMS/NEMS and energy harvesters -- Nonlinear dynamic modeling for high temperature superconductivity in nanocluster topological structures on solid surface -- Nonlinear dynamic processes in laser-induced transitions to low dimensional carbon nanostructures in bulk graphite unit -- Electro-mechanical characterization of an electrospun piezoelectric microfiber -- On modeling of Springless Electromagnetic Energy Harvesters -- Part C: Nonlinear phenomena in bio- and eco-systems dynamics -- Critical behaviors of regular pattern selection in neuronal networks with chemical synapses -- Dynamics of a homeostatically regulated neural system with delayed connectivity -- Autapse-induced complicated oscillations of a ring FHN neuronal network with multiple delayed couplings -- A time-delay nonlinear model of dopamine-modulated prefrontal-limbic interactions in schizophrenia -- Wilson-Cowan neuronal interaction models with distributed delays -- Nonlinearhydrodynamics and numerical analysis for a series of catastrophic floods/debris (2011-2017): the tectonic wave processes possible impact on surface water and groundwater flows -- Refined weighted-permutation entropy: A complexity measure for human gait and physiologic signals with outliers and noise -- Simultaneous multi-parametric analysis of bone cell population model -- Nonlinear dynamics of RRc Lyrae stars -- Part D: Chaos in electronic systems -- Multijump resonance with Chua’s circuit -- Experimental observation of robust chaos in a 3D electronic circuit -- Homogenous multistability in memristive system -- Part E: Fractional order systems -- Numerical study of nonlinear vibrations of fractionally damped cylindrical shells under the additive combinational internal resonance -- Stability of Caputo-type fractional variable-order biquadratic difference equations -- Stability of systems of fractional-order difference equations and applications to a Rulkov-type neuronal model -- Independent fractional type modes of free and forced vibrations of discrete continuum hybrid systems of fractional type with multi-deformable bodies -- Non-smooth bifurcation in two fractional-order memristive circuits -- Index.

Sommario/riassunto

This third of three volumes from the inaugural NODYCON, held at the University of Rome, in February of 2019, presents papers devoted to New Trends in Nonlinear Dynamics. The collection features both well-established streams of research as well as novel areas and emerging fields of investigation. Topics in Volume III include NEMS/MEMS and nanomaterials: multi-sensors, actuators exploiting nonlinear working principles; adaptive, multifunctional, and meta material structures; nanocomposite structures (e.g., carbon nanotube/polymer composites, composites with functionalized nanoparticles); 0D,1D,2D,3D nanostructures; biomechanics applications, DNA modeling, walking dynamics, heart dynamics, neurodynamics, capsule robots, jellyfish-like robots, nanorobots; cryptography based on chaotic maps; ecosystem dynamics, social media dynamics (user behavior dynamics in multi-messages social hotspots, prediction models), financial engineering, complexity in engineering; and network dynamics (multi-agent systems, leader-follower dynamics, swarm dynamics, biological

networks dynamics).