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Collana	NODYCON Conference Proceedings Series, , 2730-7697
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Soggetti	Multibody systems Vibration Mechanics, Applied Dynamics Nonlinear theories Computational intelligence Multibody Systems and Mechanical Vibrations Engineering Mechanics Dynamical Systems Applied Dynamical Systems Computational Intelligence
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. Prediction and control of the impact of the onset of influenza season on the spread of COVID-19 -- Chapter 2. A fractional order age-structured generalized SEIR model: The role of COVID-19 Symptom Data Challenge dataset -- Chapter 3. Dynamical analysis of a COVID-19 epidemic model with social confinement and acquired immunity loss -- Chapter 4. A cooperative epidemiological model of infectious disease dynamics: A COVID-19 case study -- Chapter 5. Dynamic analysis of a three-strain COVID-19 SEIR epidemic model with general incidence rates -- Chapter 6. Nonlinear phenomena and chaos in a tumor growth model -- Chapter 7. Modeling limbic seizure

initiation with an ensemble of delay coupled neurooscillators -- Chapter 8. Mathematical modeling of calcium-mediated exosomal dynamics in neural cells -- Chapter 9. Forward sensitivity analysis of the FitzHugh-Nagumo system -- Chapter 10. Electromagnetic induction on neurons through field coupling and Memristor -- Chapter 11. Variable speed optimization of a vibro-impact capsule system in both the forward and backward directions -- Chapter 12. Finite element modelling of a vibro-impact capsule moving in the small intestine -- Chapter 13. Vibro-impact capsule under different conditions of friction -- Chapter 14. Modeling the Fear induced Spatiotemporal dynamics of three-species Agroecosystems -- Chapter 15. Optimal control in a size structured population model with time dependent diffusion rate -- Chapter 16. On energy harvesting with time-varying frequency by using magneto piezo elastic oscillators with memory -- Chapter 17. Galloping piezoelectric energy harvester for low wind speed -- Chapter 18. Nonlinear resonator based metastructures for vibration attenuation and energy harvesting -- Chapter 19. Dynamic modeling for a mechatronic energy harvesting shock absorbers -- Chapter 20. Bistable electromagnetic energy harvesting enhanced with a resonant circuit -- Chapter 21. An internally-resonant tunable generator for wave energy harvesting -- Chapter 22. Nonlinear dynamics analysis of electric energy regeneration device based on vibration energy recovery -- Chapter 23. Harvesting energy from 2D-array of harvesters -- Chapter 24. Generalized energy balanced method for a combined nonlinear vibration absorber energy harvester with nonlinear energy sink -- Chapter 25. Nonlinear reduced order modelling of a buckled piezoelectric beam for energy harvesting -- Chapter 26. Full-order frequency-domain simulations of nonlinear piezoelectric MEMS -- Chapter 27. Global analysis and experimental dynamics of the 2:1 internal resonance in the higher-order modes of a MEMS microbeam -- Chapter 28. Nonlinear dynamics of NEMS/MEMS elements in the form of beams taking into account the temperature field, radiation exposure, elastoplastic deformations -- Chapter 29. Single input single output MEMS gas sensor -- Chapter 30. Numerical study of acoustic radiation forces to contactless excite a microcantilever -- Chapter 31. Approximate solutions to axial vibrations of nanobars in nonlinear elastic medium -- Chapter 32. Nonlinear modeling for thermal behavior on power integrated circuits -- Chapter 33. Modeling asymmetric hysteresis inspired and validated by experimental data -- Chapter 34. Forced transversal vibrations of von Karman plates with distributed spring-masses -- Chapter 35. Nonlinear natural frequencies of functionally graded axisymmetric annular microplates based on the modified couple stress theory -- Chapter 36. The development of a coupled dynamic model for thermoelastically loaded aluminium composite sandwich plates for satellite applications -- Chapter 37. On the vibration attenuation properties of metamaterial design using negative stiffness elements -- Chapter 38. Long-range resonator-based metamaterials -- Chapter 39. KdV, extended KdV, 5th-order KdV and Gardner equations generalized for uneven bottom versus corresponding Boussinesq's equations -- Chapter 40. Modified non-linear Schrodinger models CPT symmetry and anomalous charges -- Chapter 41. Effect of vorticity on peregrine breather for interfacial waves of finite amplitude -- Chapter 42. Construction of soliton solutions of the matrix modified Korteweg-de Vries equation -- Chapter 43. Frequency locking, Quasi-periodicity and Chaos due to special relativistic effects -- Chapter 44. High frequency chaotic behavior in non-ideal operational amplifiers -- Chapter 45. Multijump

resonance in a class of oscillators with nonic polynomial nonlinearity -- Chapter 46. Environmentally induced chaos and amplitude death in neuronal network activity -- Chapter 47. Chaos type identification in the contact interaction of closed cylindrical nanoshells embedded one into another with a gap between them. -- Chapter 48. Scaling wavelet analysis of chaotic systems -- Chapter 49. Weakness analyzing and performance improvement for image encryption using chaos crossing cylinder -- Chapter 50. A surrogate approach for stochastic modeling of a crash box under impact loading in the timedomain -- Chapter 51. Nonlinear dynamics of hyperelastic cylindrical membranes composed of incompressible Ogden materials -- Chapter 52. Dynamical analysis of a Memristor--Inductor--Capacitor (MLC) nonlinear circuit -- Chapter 53. Periodic solution of Mathieu system induced by fuzzy uncertainty.

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## Sommario/riassunto

This third of three volumes includes papers from the second series of NODYCON, which was held virtually in February of 2021. The conference papers reflect a broad coverage of topics in nonlinear dynamics, ranging from traditional topics from established streams of research to those from relatively unexplored and emerging venues of research. These include Complex dynamics of COVID-19: modeling, prediction and control Nonlinear phenomena in bio-systems and eco-systems Energy harvesting MEMS/NEMS Multifunctional structures, materials and metamaterials Nonlinear waves Chaotic systems, stochasticity, and uncertainty .

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