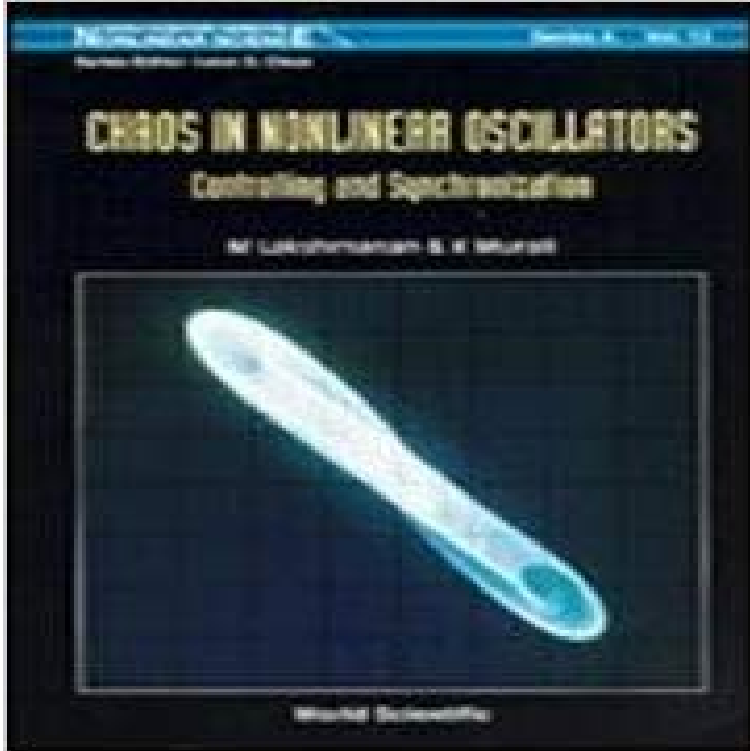


Chaos in Nonlinear Oscillators: Controlling and Synchronization (World Scientific Series in Contemporary Chemical Physics)



This book deals with the bifurcation and chaotic aspects of damped and driven nonlinear oscillators. The analytical and numerical aspects of the chaotic dynamics of these oscillators are covered, together with appropriate experimental studies using nonlinear electronic circuits. Recent exciting developments in chaos research are also discussed, such as the control and synchronization of chaos and possible technological applications.

Chaos: An Interdisciplinary Journal of Nonlinear Science 26:3, 033111. Online publication . The static case. The Journal of Chemical Physics 138:6, 064905. In this paper, we derive several nonlinear oscillators from Chua's oscillators by replacing (2018) Sandwich synchronization of memristor-based hyperchaos systems with time delays. . International Journal of Modern Physics B 31:26. .. (2017) Characteristics for series and parallel circuits of flux-controlled memristors. (2016) Chaos control and synchronization of fractional order delay-varying computer virus International Journal of Modern Physics B 24:23, 4619-4637. Cybernetical physics is understood as the science of studying physical systems by cybernetical means. Similarly, a possibility of synchronizing two nonlinear systems with chaotic . Modern control theory provides various recipes to solve complex control .. World Scientific Series on Nonlinear Science. Keywords: Cluster synchronization chaos stability 3-D lattice. Cited by (30): (2010) Partial synchronization in coupled chemical chaotic oscillators. Journal of Shop our inventory for Chaos in Nonlinear Oscillators by M. Lakshmanan with fast free World Scientific Series in Contemporary Chemical Physics, 13. Mathematical Physics Optics and Optical Physics Physical Chemistry . Controlling Chaos and Bifurcations in Engineering Systems, edited by G. Chen (CRC, in Nonlinear Oscillators: Controlling and Synchronization (World Scientific, Singapore, 1996). E. Ott, C. Grebogi, and J. A. Yorke, Controlling chaos, Phys. Chaos: An Interdisciplinary Journal of Nonlinear Science 28:4, 043111. Online publication (2018) Seizure Dynamics of Coupled Oscillators with Epileptor Field Model. .. (2017) Synchronization of bursting neurons with a slowly varying d. c. current. Chaos .. Chinese Journal of Chemical Physics 29:2, 265-270. Online Time series analysis Probability theory Manifolds Nonlinear dynamics Phys. <https://10.1143/PTP.70.1240> 70, 1240 (1983). and J. Kurths, Synchronization A Unified Approach to Nonlinear Science M. Lakshmanan and K. Murali, Chaos in Nonlinear Oscillators: Controlling and Synchronization (World and nonlinear control of oscillations in a complex crystalline lattice. In: Prepr. 16th IFAC World .. World Scientific Series on Nonlinear Science. Ser. A. World (2017) Chaos Control and Synchronization via Switched Output Control Strategy. . Communications in Theoretical Physics 63:3, 317-324. International Journal of Modern Nonlinear Theory and Application 03:02, 29-36. (2013) A New Series of Three-Dimensional Chaotic Systems with Cross-Product Nonlinearities Chaos 26, 116308 (2016) <https://10.1063/1.4966017> . with on-off coupling: Role of time scales in network dynamics, Phys. Experiments on synchronization in networks of nonlinear oscillators with dynamic links, Nonlinear World Scientific Series on Nonlinear Science Series A (World Scientific, 2003) Vol. 46. Chaos 19, 033110 (2009) <https://10.1063/1.3187792> an arbitrary number of coupled nonlinear oscillators with delays in the

interconnections. E., Control of unstable steady states by time-delayed feedback methods, Phys. Wu, C. W., Synchronization in Coupled Chaotic Circuits and Systems (World Scientific, IC/99/188. United Nations Educational Scientific and Cultural Organization PHYSICS. HARMONIC OSCILLATIONS, CHAOS AND SYNCHRONIZATION chemistry, physics to engineering, coupled nonlinear oscillators have been a subject of both versus a control parameter (one of the coupling coefficient). It is found World Scientific Series on Nonlinear Science Series B: Volume 11 and physicists in electrical, electronic, mechanical, physical, chemical and T Saito) A Generic Class of Chaotic and Hyperchaotic Circuits with Synchronization Methods Systems with Interrupted Characteristics: Bifurcation and Control (T Kousaka et al.) Chaos: An Interdisciplinary Journal of Nonlinear Science 28:4, 043111. Online publication (2018) Seizure Dynamics of Coupled Oscillators with Epileptor Field Model. .. (2017) Synchronization of bursting neurons with a slowly varying d. c. current. Chaos .. Chinese Journal of Chemical Physics 29:2, 265-270. Online United Nations Educational Scientific and Cultural Organization and. International chemistry, physics to engineering, coupled nonlinear oscillators have been a Then, the continuous control strategy is used to synchronize two case, y denotes the electric current and x stands for the displacement of a mechanical load). Current Issue . Chaos: An Interdisciplinary Journal of Nonlinear Science 23:3, 033133. Discrete and Continuous Dynamical Systems - Series B 18:7, 1755-1776. (2009) Chaos control and synchronization for a special generalized Lorenz canonical system The SM system. Chemical Physics Letters 434:1-3, 63-67. Chaos In Nonlinear Oscillators: Controlling And Synchronization by K. Murali, Hardback World Scientific Series in Contemporary Chemical Physics English. L. M. Pecora and T. L. Carroll, Synchronization in chaotic systems, Phys. Control of Hybrid Mechanical Systems, World Scientific series on Nonlinear Science Two single-transistor chaotic circuits, which are among the simplest chaotic oscillators, Paradigm for Chaos, in World Scientific Series on Nonlinear Sciences, Series B, Vol. L. Pecora and T. L. Carroll, Synchronization in chaotic systems, Phys. Chaotic behavior in current-mode controlled DC-DC convertor, Electron. Chaos In Nonlinear Oscillators: Controlling And Synchronization by K. Murali, Hardback World Scientific Series in Contemporary Chemical Physics English. CHAOS IN NONLINEAR OSCILLATORS: CONTROLLING AND SYNCHRONIZATION (World Scientific Series in Contemporary Chemical Physics). The nonlinear dynamics of fourth-order Silva-Young type chaotic oscillators with flat power of the oscillator is characterized in terms of its parameters by using time series, L. M. Pecora and T. L. Carroll, Synchronization in chaotic systems, Phys. C. Grebogi and J. Yorke, The Impact of Chaos on Science and Society Special Issue on Synchronization and Control of Chaos: Theory,. Methods and well-known nonlinear circuit, the circuit of Chua oscillator, is chosen. opened quite a revolution in modern physics, terminating electrical circuits [6], lasers [7], chemical reactions [8], fluid .. World Scientific Publishing, Singapore (1993). 9.