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	Descrizione fisica	1 online resource (VIII, 228 p. 79 illus., 48 illus. in color.)
	Collana	Nonlinear Systems and Complexity, , 2195-9994 ; ; 22
	Disciplina	620
	Soggetti	Computational complexity
		Statistical physics
		Mathematical models
		Vibration
		Dynamics
		Complexity
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		Mathematical Modeling and Industrial Mathematics
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	Nota di contenuto	Preface -- An overview of the generalized Gardner equation: symmetry groups and conservation laws; Maria S. Bruzon -- On symmetries and conservation laws for a generalized Fisher equation; Maria Luz Gandarias, Maria Rosa -- From Complex Systems theory to Disasters Risk Reduction Management; Leonardo B. L. Santos, Luciana R. Londe, Tiago Carvalho, Daniel S. Menasche -- Fireflies: a paradigm in synchronization; G. M. Ramírez-Ávila, Juergen Kurths, Jean-Louis Deneubourg -- An investigation of the chaotic transient for a boundary crisis in the Fermi-Ulam model; Edson D. Leonel, Murilo Ferrioli Marques -- Tunable orbits influence in a driven stadium-like billiard; Andre Livorati -- Transport barriers in nonintegrable dynamical systems; Marisa Roberto -- Barriers in Two-dimensional and Multidimensional Systems; Erico Rempel, Abraham C. –L Chian -- New Trends in Chaos-based Communications and Signal Processing; Marcio

Eisencraft -- Complex Networks and Centrality; Francisco Rodrigues -- Characterizing flows by complex network methods; Reik Donner.

Sommario/riassunto	This book collects recent developments in nonlinear and complex systems. It provides up-to-date theoretic developments and new techniques based on a nonlinear dynamical systems approach that can be used to model and understand complex behavior in nonlinear dynamical systems. It covers symmetry groups, conservation laws, risk reduction management, barriers in Hamiltonian systems, and synchronization and chaotic transient. Illustrating mathematical modeling applications to nonlinear physics and nonlinear engineering, the book is ideal for academic and industrial researchers concerned with machinery and controls, manufacturing, and controls. · Introduces new concepts for understanding and modeling complex systems; · Explains risk reduction management in complex systems; · Examines the symmetry group approach to understanding complex systems; · Illustrates the relation between transient chaos and crises.