1. Record Nr. UNINA9910484238003321

Titolo	Mathematics of Complexity and Dynamical Systems [[electronic resource] /] / edited by Robert A. Meyers
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2011
ISBN	1-4614-1806-2
Edizione	[1st ed. 2011.]
Descrizione fisica	1 online resource (489 illus., 140 illus. in color. eReference.)
Collana	Springer reference
Disciplina	003
Soggetti	System theory Computer simulation Dynamics Ergodic theory Statistical physics Dynamical systems Differential equations Complex Systems Simulation and Modeling Dynamical Systems and Ergodic Theory Systems Theory, Control Ordinary Differential Equations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Ergodic Theory -- Three Editor-in-Chief Selections: Catastrophe Theory; Infinite Dimensional Controllability; Philosophy of Science, Mathematical Models In.- Fractals and Multifractals -- Non-linear Ordinary Differential Equations and Dynamical Systems -- Non-Linear Partial Differential Equations -- Perturbation Theory -- Solitons -- Systems and Control Theory.
Sommario/riassunto	Mathematics of Complexity and Dynamical Systems is an authoritative reference to the basic tools and concepts of complexity, systems theory, and dynamical systems from the perspective of pure and applied mathematics. Complex systems are systems that comprise many interacting parts with the ability to generate a new quality of

collective behavior through self-organization, e.g. the spontaneous formation of temporal, spatial or functional structures. These systems are often characterized by extreme sensitivity to initial conditions as well as emergent behavior that are not readily predictable or even completely deterministic. The more than 100 entries in this wide-ranging, single source work provide a comprehensive explication of the theory and applications of mathematical complexity, covering ergodic theory, fractals and multifracticals, dynamical systems, perturbation theory, solitons, systems and control theory, and related topics. Mathematics of Complexity and Dynamical Systems is an essential reference for all those interested in mathematical complexity, from undergraduate and graduate students up through professional researchers.