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Titolo	Applied solar energy
Pubbl/distr/stampa	New York, : Allerton Press
ISSN	0003-701X
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico

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Autore	Mobus George E
Titolo	Principles of Systems Science / / by George E. Mobus, Michael C. Kalton
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2015
ISBN	1-4939-1920-2
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (XXXVI, 755 p. 199 illus., 163 illus. in color.)
Collana	Understanding Complex Systems, , 1860-0832
Disciplina	003
Soggetti	Statistical physics Dynamics Computational complexity Economic policy Economics Physics Systems biology Complex Systems Complexity Political Economy/Economic Systems Applications of Graph Theory and Complex Networks Systems Biology Statistical Physics and Dynamical Systems
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	Part I: Introduction to Systems Science -- A Helicopter View -- Systems Principles in the Real World: Understanding Drug Resistant TB -- Part II: Structural and Functional Aspects -- Organized Wholes -- Networks: Connections Within and Without -- Complexity -- Behavior: System Dynamics -- Part III: The Intangible Aspects of Organization: Maintaining and Adapting -- Information, Meaning, Knowledge, and Communications -- Computational Systems -- Cybernetics: The Role of Information and Computation in Systems -- Part IV: Evolution -- Auto-Organization and Emergence -- Evolution -- Part V: Methodological Aspects -- Systems Analysis -- Systems Modeling -- Systems Engineering.
Sommario/riassunto	This pioneering text provides a comprehensive introduction to systems structure, function, and modeling as applied in all fields of science and engineering. Systems understanding is increasingly recognized as a key to a more holistic education and greater problem solving skills, and is also reflected in the trend toward interdisciplinary approaches to research on complex phenomena. The subject of systems science, as a basis for understanding the components and drivers of phenomena at all scales, should be viewed with the same importance as a traditional liberal arts education. Principles of Systems Science contains many graphs, illustrations, side bars, examples, and problems to enhance understanding. From basic principles of organization, complexity, abstract representations, and behavior (dynamics) to deeper aspects such as the relations between information, knowledge, computation, and system control, to higher order aspects such as auto-organization, emergence and evolution, the book provides an integrated perspective on the comprehensive nature of systems. It ends with practical aspects such as systems analysis, computer modeling, and systems engineering that demonstrate how the knowledge of systems can be used to solve problems in the real world. Each chapter is broken into parts beginning with qualitative descriptions that stand alone for students who have taken intermediate algebra. The second part presents quantitative descriptions that are based on pre-calculus and advanced algebra, providing a more formal treatment for students who have the necessary mathematical background. Understanding these basics enables further understanding both of how systems endure and how they may become increasingly complex and exhibit new properties or characteristics. · Serves as a textbook for teaching systems fundamentals in any discipline or for use in an introductory course in systems science degree programs · Addresses a wide range of audiences with different levels of mathematical sophistication · Includes open-ended questions in special boxes intended to stimulate integrated thinking and class discussion · Describes numerous examples of systems in science and society · Captures the trend towards interdisciplinary research and problem solving.