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	Descrizione fisica	1 online resource (XIV, 159 p. 46 illus., 43 illus. in color.)
	Collana	Understanding Complex Systems, , 1860-0840
	Disciplina	530.1
	Soggetti	System theory Dynamics Nonlinear theories Artificial intelligence - Data processing Complex Systems Applied Dynamical Systems Data Science Teoria de sistemes Dinàmica Teories no lineals Intel·ligència artificial Processament de dades Sistemes complexos Llibres electrònics
	Lingua di pubblicazione	Inglese
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	Nota di contenuto	Concepts of Causality and Systems theory -- A brief overview on Dynamic Complex Systems And Causal Inference -- Elastic States and Complex Dynamics in Mechanistic Models -- A cartography of complexity -- The implications of relative causal inference for the understanding of complex systems.
	Sommario/riassunto	This book examines the problems of causal determinism and limited completeness in systems theory. Furthermore, the author analyzes

options for complexity measurements that include systems' autonomy and variability for causal inference—i.e., the ability to derive causal relationships from data recorded as a function of time. Such complexity measures present limitations in the derivation of absolute causality in complex systems and the recognition of relative and contextual causality, with practical consequences for causal inference and modeling. Finally, the author provides concepts for relative causal determinism. As a result, new ideas are presented to explore the frontiers of systems theory, specifically in relation to biological systems and teleonomy, i.e., evolved biological purposiveness. This book is written for graduate students in physics, biology, medicine, social sciences, economics, and engineering who are seeking new concepts of causal inference applied in systems theory. It is also intended for scientists with an interest in philosophy and philosophers interested in the foundations of systems theory. Additionally, data scientists seeking new methods for the analysis of time series to extract features useful for machine learning will find this book of interest.