Record Nr. UNINA9910820297703321 Autore Miller John H (John Howard), <1959-> Titolo Complex adaptive systems: an introduction to computational models of social life / / John H. Miller and Scott E. Page Princeton, N.J.,: Princeton University Press, c2007 Pubbl/distr/stampa **ISBN** 1-282-45811-6 1-282-93635-2 9786612458118 9786612936357 1-4008-3552-6 0-691-12702-6 Edizione [Course Book] Descrizione fisica 1 online resource (284 p.) Collana Princeton studies in complexity Classificazione 70.03 Altri autori (Persone) PageScott E 300.1/513 Disciplina Soggetti Social systems - Mathematical models Social sciences - Mathematical models Sociale relaties Computermodellen Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Includes bibliographical references (p. [255]-260) and index. Nota di bibliografia Nota di contenuto pt. 1. INTRODUCTION. Introduction -- Complexity in social worlds -pt. 2. PRELIMINARIES. Modeling -- On emergence -- pt. 3. COMPUTATIONAL MODELING. Computation as theory -- Why agentbased objects? -- pt. 4. MODELS OF COMPLEX ADAPTIVE SOCIAL SYSTEMS. A basic framework -- Complex adaptive social systems in one dimension -- Social dynamics -- Evolving automata -- Some fundamentals of organizational decision making -- pt. 5. CONCLUSIONS. Social science in between -- Epilogue -- Appendixes. A. An open agenda for complex adaptive social systems -- B. Practices for computational modeling. This book provides the first clear, comprehensive, and accessible Sommario/riassunto account of complex adaptive social systems, by two of the field's leading authorities. Such systems--whether political parties, stock markets, or ant colonies--present some of the most intriguing theoretical and practical challenges confronting the social sciences.

Engagingly written, and balancing technical detail with intuitive explanations, Complex Adaptive Systems focuses on the key tools and ideas that have emerged in the field since the mid-1990s, as well as the techniques needed to investigate such systems. It provides a detailed introduction to concepts such as emergence, self-organized criticality, automata, networks, diversity, adaptation, and feedback. It also demonstrates how complex adaptive systems can be explored using methods ranging from mathematics to computational models of adaptive agents. John Miller and Scott Page show how to combine ideas from economics, political science, biology, physics, and computer science to illuminate topics in organization, adaptation, decentralization, and robustness. They also demonstrate how the usual extremes used in modeling can be fruitfully transcended.