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Contributors -- Index

Sommario/riassunto

Following the publication of C. S. Holling's seminal work on the relationship between animal body mass patterns and scale-specific landscape structure, ecologists began to explore the theoretical and applied consequences of discontinuities in ecosystems and other complex systems. Are ecosystems and their components continuously distributed and do they adhere to scaling laws, or are they discontinuous and more complex than early models would have us believe? The resulting propositions over the structure of complex systems sparked an ongoing debate regarding the mechanisms generating discontinuities and the statistical methods used for their detection.This volume takes the view that ecosystems and other complex systems are inherently discontinuous and that such fields as ecology, economics, and urban studies greatly benefit from this paradigm shift. Contributors present evidence of the ubiquity of discontinuous distributions in ecological and social systems and how their analysis provides insight into complex phenomena. The book is divided into three sections. The first focuses on background material and contrasting views concerning the discontinuous organization of complex systems. The second discusses discontinuous patterns detected in a number of different systems and methods for detecting them, and the third touches on the potential significance of discontinuities in complex systems. Science is still dominated by a focus on power laws, but the contributors to this volume are convinced power laws often mask the interesting dynamics of systems and that those dynamics are best revealed by investigating deviations from assumed power law distributions.In 2008, a grand conference on resilience was held in Stockholm, hosting 600 participants from around the world. There are now three big centers established with resilience, the most recent one being the Stockholm Resilience Center, with others in Australia (an international coral reef center), Arizona State University's new sustainability center focusing on anthropology, and Canada's emerging social sciences and resilience center. Activity continues to flourish in Alaska, South Africa, and the Untied Kingdom, and a new center is forming in Uruguay.