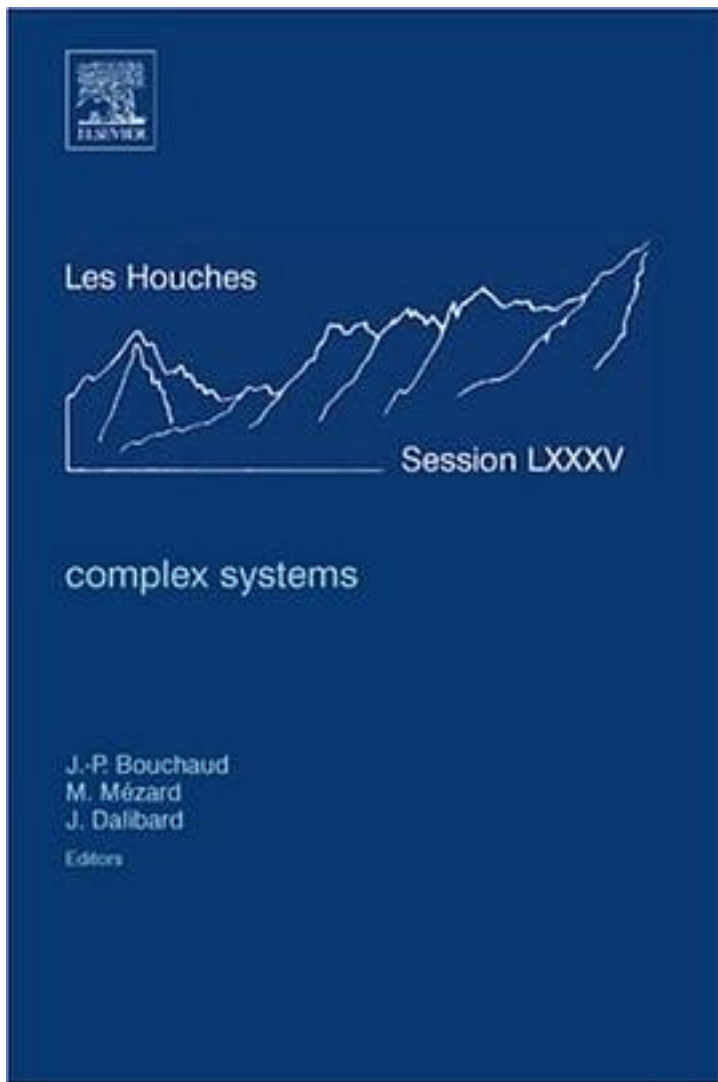# Complex Systems, Volume LXXXV

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出版者:Elsevier Science

出版时间:2007-09-26

装帧:Hardcover

isbn:9780444530066

There has been recently some interdisciplinary convergence on a number of precise topics which can be considered as prototypes of complex systems. This convergence is best appreciated at the level of the techniques needed to deal with these systems, which include: 1) A domain of research around a multiple point where statistical physics, information theory, algorithmic computer science, and more theoretical (probabilistic) computer science meet: this covers some aspects of error correcting codes, stochastic optimization algorithms, typical case complexity and phase transitions, constraint satisfaction problems. 2) The study of collective behavior of interacting agents, its impact on understanding some types of economical and financial problems, their link to population and epidemics dynamics, game theory, social, biological and computer networks and evolution. The present book is the written version of the lectures given during the Les Houches summer school session on "Complex Systems", devoted to these emerging interdisciplinary fields. The lectures consist both in a number of long methodological courses (probability theory, statistical physics of disordered systems, information theory, network structure and evolution, agent-based economics and numerical methods) and more specific, 'problem oriented' courses. Lecturers are all leading experts in their field; they have summarized recent results in a clear and authoritative manner. The "Les Houches lecture notes" have a long tradition of excellence and are often found to be useful for a number of years after they were written. The book is of interest to students and researchers with various backgrounds: probability theory, computer science, information theory, physics, finance, biology, etc.

・ Topical and comprehensive survey of the emerging, interdisciplinary field of "Complex Systems", covered by recognized world experts ・ "Les Houches lectures notes": a long tradition of excellence and long-lasting impact ・ Of interest to a broad audience (mathematics, physics, biology, informatics, finance, geology, etc.) ・ Some applications may have concrete impact ・ Selected topics in complex systems: forefront of research in the field

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