



Statistical Mechanics of Networks

By Dr. Christoly Biely

VDM Verlag Dr. Müller E.K. Okt 2013, 2013. Taschenbuch. Book Condition: Neu. 221x149x12 mm. Neuware - The study of networks has experienced a tremendous increase of interest over the past decade. From the viewpoint of physics, much of this interest arises from the fact that networks grasp the main essence of complex systems, namely the long-range interactions between individual elements. This book demonstrates that, within the methodology of statistical physics, networks can be understood on three different descriptive levels. Firstly, it is shown that random matrix theory can be used to describe random features of networks. This also makes the acquiring of non-random properties possible, which is exemplified based on high-frequency financial data. Secondly, aiming towards the understanding of real-world networks (which deviate strongly from the random case) an understanding based on equilibrium statistical mechanics is proposed. It is shown that a Hamiltonian motivated from utility theory allows to describe real-world evidence accurately. Finally, a specific model of network formation is developed to describe out-of-equilibrium aspects of cooperation and network formation. The three descriptive levels are discussed under a unifying viewpoint. 132 pp. Englisch.



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This is the finest publication we have read through right up until now. Better than never, though I am quite late in starting this one. It's been written in an remarkably easy way in fact it is only after I finished reading through this book by which basically altered me, affect the way I think.

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