

BOOK REVIEW

The Structure of Complex Networks

by

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The book deals with the structural analysis of complex networks which definitely became an important area of complex network theory. It consists of two parts. Part I relates to theoretical methods for analyzing structural features of complex networks. They range from graph-theoretical preliminaries, metrical properties of graphs, network motifs to quantitative approaches such as network measures and random graph models. Part II deals with applications thereof and covers interesting results by considering different classes of real-world networks namely, genetic networks, protein residue networks, protein-protein interaction networks, reaction networks, anatomical networks, ecological networks and social and economic networks.

The application part (Part II) of this book covers many topics from network biology but also contains the mathematical methods necessary to understand the techniques thoroughly. This is a new feature of such an interdisciplinary book dealing with network biology as the mathematical part is often missing or underemphasized in such books. Also, some topics, e.g., *network entropies* and *communicability functions in networks* are clearly interdisciplinary because they shed light on relations between graph theory, statistics and information theory which have not yet been explored properly.

The book is intended for researchers, graduate and advanced undergraduate students in interdisciplinary areas such as bioinformatics, chemistry, chemometrics, graph theory, mathematical chemistry, medical informatics, network biology and systems biology. The chapters are written comprehensively but contain the necessary formal treatment to understand the mathematical methods. Hence, the book is accessible not only to researchers but also to advanced undergraduate or graduate students in this field.

Finally, the book is nicely written and its thematical composition is unique. Its interesting interplay between theory and practical problems makes it a 'must read' for all scientists who work in network science and who want to use graph theory to solve new problems.

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