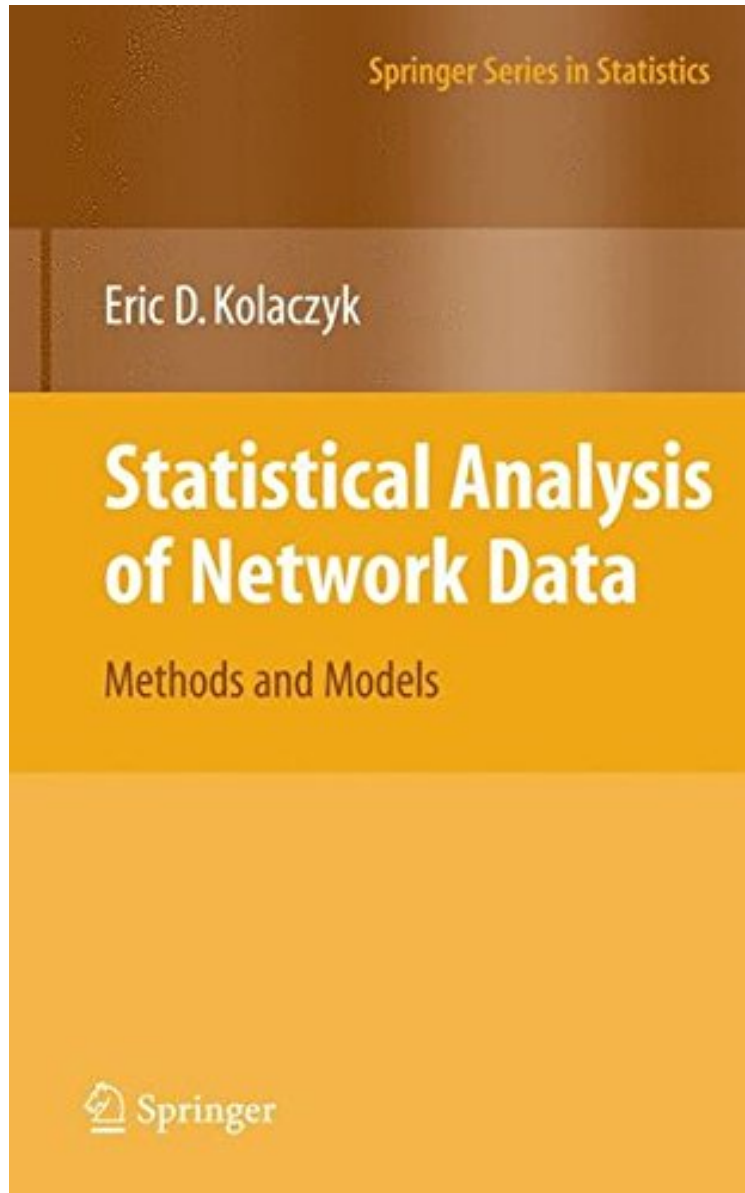


(Get free) Statistical Analysis of Network Data: Methods and Models (Springer Series in Statistics)

# Statistical Analysis of Network Data: Methods and Models (Springer Series in Statistics)

*Eric D. Kolaczyk*

*ebooks / Download PDF / \*ePub / DOC / audiobook*



DOWNLOAD



READ ONLINE

#869043 in Books 2009-03-19Original language:EnglishPDF # 1 9.21 x .94 x 6.14l, 1.75 #File Name:  
038788145X386 pages | File size: 21.Mb

**Eric D. Kolaczyk : Statistical Analysis of Network Data: Methods and Models (Springer Series in Statistics)**  
before purchasing it in order to gage whether or not it would be worth my time, and all praised Statistical Analysis of  
Network Data: Methods and Models (Springer Series in Statistics):

6 of 6 people found the following review helpful. Beautiful networks for a beautiful book! By LOVI wish all stat books (or even network books) were as beautiful as this one - beautiful in the sense of the pretty graphs and networks and also the content (theory, discussion, examples) and even the paper quality. There are many excellent network books out there on how to construct a network and measure nodes, but there aren't many books that have a focus on the statistical aspects of network analysis - namely, data collection, sampling, modeling, estimation, inference, etc., which are just as important as constructing a network. So this book is not only beautiful, readable, but also very unique and extremely valuable. Excellent work!

0 of 0 people found the following review helpful. General Purpose Reference

By David This book provides a comprehensive survey of statistical issues related to network data. Very good entry-level book for statisticians who know nothing about network and graph theory. As the topic itself is too wide, ranging from graph theory, statistics, to social network, this book is written in a condense way. Nevertheless, the examples are easy to understand and well motivated, with excellent graphical illustrations. However, in terms of mathematical results, it only states the results without the proof (doing so may result in a very long book), and readers have to refer to other books.

5 of 5 people found the following review helpful. So far, the best book on the subject which I am aware of

By Rodrigo Cesar de Castro Miranda I was looking for a more formal and thorough review of statistical network analysis, and this was the best book I found on the subject. Most other books are really introductions to the study of complex networks, this is the first one I found which goes deeper into the advanced statistical analysis of network data. I recommend it.

In recent years there has been an explosion of network data that is, measurements that are either of or from a system conceptualized as a network from seemingly all corners of science. The combination of an increasingly pervasive interest in scientific analysis at a systems level and the ever-growing capabilities for high-throughput data collection in various fields has fueled this trend. Researchers from biology and bioinformatics to physics, from computer science to the information sciences, and from economics to sociology are more and more engaged in the collection and statistical analysis of data from a network-centric perspective. Accordingly, the contributions to statistical methods and modeling in this area have come from a similarly broad spectrum of areas, often independently of each other. Many books already have been written addressing network data and network problems in specific individual disciplines. However, there is at present no single book that provides a modern treatment of a core body of knowledge for statistical analysis of network data that cuts across the various disciplines and is organized rather according to a statistical taxonomy of tasks and techniques. This book seeks to fill that gap and, as such, it aims to contribute to a growing trend in recent years to facilitate the exchange of knowledge across the pre-existing boundaries between those disciplines that play a role in what is coming to be called network science.

From the reviews: Accessible and easy to read strikes a balance between concepts and mathematical detail. This book is a superb introduction to a fascinating area. (International Statistical, 2010, 78, 1, 134-159) Many disciplines are nowadays involved in network modeling, but it appears as if a common methodological foundation is lacking. The objective of this book is to provide a first attempt at defining such a common methodological foundation from a statistical point of view. The style of the writing is excellent. ample references allow quick access to further literature. I can recommend this book to anyone with a serious statistical interest in networks. (Fred van Eeuwijk, VOC Nieuwsbrief, Issue 44, May, 2010) Any reader interested in networks and wanting a perspective beyond that of any single discipline should acquire this book. Researchers will also appreciate the many points in the book where important open problems are identified. The book can also serve readily and flexibly as the main textbook for either a graduate-level seminar course or for an informally organized reading group. This book sets itself the challenge of addressing statistics for network science broadly, and in the many ways already noted, it is successful. (Michael Frey, Technometrics, Vol. 54 (1), February, 2012)

From the Back Cover In the past decade, the study of networks has increased dramatically. Researchers from across the sciences including biology and bioinformatics, computer science, economics, engineering, mathematics, physics, sociology, and statistics are more and more involved with the collection and statistical analysis of network-indexed data. As a result, statistical methods and models are being developed in this area at a furious pace, with contributions coming from a wide spectrum of disciplines. This book provides an up-to-date treatment of the foundations common to the statistical analysis of network data across the disciplines. The material is organized according to a statistical taxonomy, although the presentation entails a conscious balance of concepts versus mathematics. In addition, the examples including extended cases studies are drawn widely from the literature. This book should be of substantial interest both to statisticians and to anyone else working in the area of network science. The coverage of topics in this book is broad, but unfolds in a systematic manner, moving from descriptive (or exploratory) methods, to sampling, to modeling and inference. Specific topics include network mapping, characterization of network structure, network sampling, and the modeling, inference, and prediction of networks, network processes, and network flows. This book is the first such resource to present material on all of these core topics in one place. Eric Kolaczyk is a professor of statistics, and Director of the Program in Statistics, in the Department of Mathematics and Statistics at Boston University, where he also is an affiliated faculty member in the

Center for Biodynamics, the Program in Bioinformatics, and the Division of Systems Engineering. His publications on network-based topics include work ranging from the detection of anomalous traffic patterns in computer networks to the prediction of biological function in networks of interacting proteins to the characterization of influence of groups of actors in social networks.