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Bornholdt, Stefan / Schuster, Heinz Georg (eds.)

Handbook of Graphs and Networks

From the Genome to the Internet

Table of Contents

http://www.pro-physik.de/Phy/pdfs/Bornholdt_Inhaltsverz.pdf

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2002. XVI, 401 Pages, Hardcover

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Short

Defining the
this book

as a key concept across several disciplines.

The contributions present common underlying principles of network dynamics and their theoretical descriptions, and are thus of interest to specialists as well as to non-specialized readers looking for an introduction to this new and exciting field.

description

field of complex interacting networks in its infancy,
presents the dynamics of networks and their structure

From the contents:

Themes in biological networks: regulatory networks in the genome, neural networks, ecological networks and food webs.

Further themes: Internet and the World-Wide Web, peer-to-peer networks, computer viruses, traffic networks.

Methods: scale-free networks, small-world networks, generalized random graphs.

From the contents

Bela Bollobas and Oliver Riordan:

1. Mathematical Results on Scale-free Random Graphs

no pdf

Mark Newman:

2. Random Graphs as Models of Networks

<http://www.santafe.edu/sfi/publications/Working-Papers/02-02-005.pdf>

Albert-Lázló Barabási:

3. Emergence of Scaling in Complex Networks

http://www.pro-physik.de/Phy/pdfs/Bornholdt_K3_069_084.pdf

R. Cohen, S. Havlin, and D. ben-Avraham:

4. Structural Properties of Scale-Free Networks

<http://citeseer.nj.nec.com/cohen02structural.html>

Romualdo Pastor-Satorras and Alessandro Vespignani:

5. Epidemics and Immunization in Scale-free Networks

<http://arxiv.org/abs/cond-mat/0205260>

<http://eclectic.ss.uci.edu/~drwhite/ISCOM/0205260.pdf>

Ralf J. Sommer:

6. Cells and Genes as Networks in Nematode Development and Evolution

no pdf

Ricard V. Solé and Romualdo Pastor-Satorras:

7. Complex Networks in Genomics and Proteomics

<http://www.santafe.edu/sfi/publications/Working-Papers/02-06-026.pdf>

Sergei Maslov, Kim Sneppen and Uri Alon:

8. Correlation Profiles and Motifs in Complex Networks

see: http://cmth.phy.bnl.gov/~maslov/protein_networks_science.pdf

and: <http://cmth.phy.bnl.gov/~maslov/matlab.htm> for software

Wolfgang Kinzel:

9. Theory of Interacting Neural Networks

<http://arxiv.org/abs/cond-mat/0204054>

<http://eclectic.ss.uci.edu/~drwhite/ISCOM/0204054.pdf>

B. Drossel and A. J. McKane:

10. Modelling Food Webs

<http://theory.ph.man.ac.uk/~ajm/webreview.pdf>

<http://theory.ph.man.ac.uk/~ajm/foodwebs.html>

Kai Nagel:

11. Traffic Networks

no pdf

Alan Kirman:

12. Economic Networks

no pdf

Lada A. Adamic, Rajan M. Lukose and Bernardo A. Huberman:

13. Local Search in Unstructured Networks

<http://arxiv.org/abs/cond-mat/0204181>

<http://eclectic.ss.uci.edu/~drwhite/ISCOM/0204181.pdf>

S.N. Dorogovtsev and J.F.F. Mendes:

14. Accelerated Growth of Networks

<http://arxiv.org/abs/cond-mat/0204102>

<http://eclectic.ss.uci.edu/~drwhite/ISCOM/0204102.pdf>

G rard Weisbuch and Sorin Solomon:

15. Social Percolators and Self Organized Criticality

<http://www.soc.surrey.ac.uk/simsoc5/talks-page/talk11.htm>

Sanjay Jain and Sandeep Krishna:

16. Graph Theory and the Evolution of Autocatalytic Networks

<http://arxiv.org/abs/nlin.AO/0210070>

<http://eclectic.ss.uci.edu/~drwhite/ISCOM/0210070.pdf>

Related:

Navigation in small world networks, a scale-free continuum model

<http://www.cs.vu.nl/~rmeester/preprints/sw.pdf>

The diameter of a scale-free random graph, B la Bollob s and Oliver Riordan, to appear in *Combinatorica*.

<http://www.dpmms.cam.ac.uk/~omr10/diam/diam.pdf>

Coupling scale-free and classical random graphs, B la Bollob s and Oliver Riordan, submitted to *Internet Mathematics*.

<http://www.dpmms.cam.ac.uk/~omr10/coupling/coupling.pdf>