



Institut für Angewandte Mathematik
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SoSe 2017

Seminar

Mathematics of random graphs and networks

This seminar introduces into the probability theory of random graphs and networks. The main part of the seminar follows the book Durrett (2017). At the end we will also use some more recent publications. The seminar starts with a discussion of Erdős-Rényi random graphs and how the theory of branching processes can be used to understand properties of the graphs as cluster growth and development of diameters of components. Further models that are discussed in the seminar are the Barabási-Albert model, small world, models, Watts and Strogatz model.

Rick Durrett: *Random Graph Dynamics*. Cambridge University Press, 2007

<https://services.math.duke.edu/~rtd/RGD/RGD.pdf>

The language of the seminar will be English if there is at least one non-German speaking participant. Otherwise the seminar will be hold in German. The seminar will take place as block seminar on two days.

Preliminary discussion: 25.4.2017; 14.15 - 15.45; Mathematikon, Room 04/414 (4th floor).

1st block: 26.06.2017; 9h c.t. - 19h (with breaks, main break 13:00-14:00), Mathematikon, Room 02/414 .

2nd block: 27.06.2017; 9h c.t. - 19h (with breaks), Mathematikon, Room 02/414 (2nd floor).

In case of interest you can send an e mail to mammen@math.uni-heidelberg.de to get a detailed list of talks.