University of Cologne
Institute of Mathematics
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SS 2016:
Markov chains and applications

Markov chains are a simple yet very useful tool for modeling situations in which events do not occur according to an i.i.d. mechanism anymore. We will cover some topics of the book [LPW09] (which at the time of writing can be downloaded at `http://pages.uoregon.edu/dlevin/MARKOV/markovmixing.pdf`) and then proceed to some further and current applications.

The seminar is aimed at BSc and MSc students, and participants are expected to have a basic working knowledge of Markov chains or otherwise mastered the contents of the lecture 'Wahrscheinlichkeitstheorie I'. In order to obtain the corresponding credit points, participants have to give a presentation on one of the available topics and actively participate in the remaining presentations.

Presentations can be given in English or German.

Students who intend to participate in the seminar are asked to notify the lecturer via email (see above) by **February 29$^{\text{th}}$, 2016**, including

1. matriculation number,

2. semesters studied,

3. relevant lectures attended and grades obtained.

Room: Mathematics 204 (Seminarraum 2)

Time: Wednesday, 10 to 11:30 a.m.

References

[LPW09] David A. Levin, Yuval Peres, and Elizabeth L. Wilmer. *Markov chains and mixing times*. American Mathematical Society, Providence, RI, 2009. With a chapter by James G. Propp and David B. Wilson.