

1 Planned talks

The references below refer to the version of [AF02] found at <https://www.stat.berkeley.edu/users/aldous/RWG/book.html>.

Please start with reading up to page 26 on your own (most of it should look familiar, apart from e.g. Markov chains in continuous time and the ergodic theorem)

- 4.4. ??: pp 27–32 (Section 2.2, without Example 2.16; can put lemmata and corollaries on projector slides, proofs at blackboard)
- 11.4. ??: pp 32–36 (Example 2.16 till end of Section 2.3)
- 18.4. ??: pp 36–41 (Section 2.4 till end of Section 2.4.2)
- 25.4. ??: pp 41–45 (Section 2.4.3 till end of Section 2.5; ‘advanced version’ of conditional probabilities / expectations is needed, i.e. conditioning on σ -algebras)
- 2.5. ??: pp 45–49 (Sections 2.6, 2.7)
- 9.5. ??: pp 49–52 (Section 2.8, requires knowledge of martingales)
- 16.5. ??: pp 57–61 (Section 3.1)
- 23.5. ??: pp 62–66 (Section 3.1.2 till before Section 3.2.1)
- 6.6. ??: pp 66–72 (Section 3.2.1 till end of Section 3.3.4)
- 27.6. ??: pp 72–77 (Section 3.4, spectral representation; in some sense easier than what we did in the convergence results of ‘Einführung’ since here the chain is assumed reversible)
- 4.7. ??: pp 77–79 (Section 3.5 on complete monotonicity), 85–87 (Section 3.5.4 on approximate exponentiality of hitting times; ‘proofs’ of further results needed here can be given in a heuristic / non-rigorous manner)

Bei Interesse: Bis 30.1.2019 verbindliche Anmeldung via Email an drewitz@math.uni-koeln.de mit

- Name & Matrikelnummer
- relevante besuchte Vorlesungen & Studiengang
- Ihren drei Favoriten aus den o.g. Vorträgen

References

- [AF02] David Aldous and James Allen Fill. Reversible markov chains and random walks on graphs, 2002. Unfinished monograph, recompiled 2014, available at <https://www.stat.berkeley.edu/~aldous/RWG/book.html>.
- [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.