



Einladung zum Oberseminar Stochastik

**Am Mittwoch, 19.11.2025 um 17:45 Uhr, im Seminarraum 1
(Raum 005)**

der Abteilung Mathematik, Weyertal 86–90, 50931 Köln, spricht:

Prof. Dr. Peter Müller
(LMU München)

zum Thema

Return probability on Bienaymé-Galton-Watson trees and spectral asymptotics of Erdős-Rényi random graphs

Abstract

We derive an upper bound for the annealed return probability of the simple random walk on supercritical Bienaymé-Galton-Watson trees. The bound decays subexponentially in time t with $t^{1/3}$ in the exponent. It is valid for all offspring distributions with a finite first moment larger than one and is optimal whenever the offspring distribution does not forbid leaves or linear pieces in the tree. This solves completely the open case left by Piau [Ann. Probab. 26, 1016-1040 (1998)]. In the special case of a Poissonian offspring distribution we apply this upper bound to deduce a Lifshits tail for the eigenvalue density of the graph Laplacian on supercritical sparse Erdős-Rényi random graphs. This is joint work with Markus Heydenreich and Sara Terveer.

Interessenten sind herzlich eingeladen.

Die Dozenten der Stochastik