

Institute for Applied Mathematics, Bonn University

Oberseminar Stochastik

Thursday, 17 November 2022, 16:30

Lipschitz-Saal (LWK 1.016)

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Universität Wien

On the universality of fluctuations for the cover time

What is the structure of the set of the last few points visited by a random walk on a graph? We show that on vertex-transitive graphs of bounded degree, this set is decorrelated (it is close to a product measure in total variation) if and only if a simple geometric condition on the diameter of the graph holds. In this case, the cover time has universal fluctuations: properly scaled, this time converges to a Gumbel distribution.

To prove this result we rely on recent progress on the geometric group theory, and we prove refined quantitative estimates showing that the hitting time of a set of vertices is typically approximately an exponential random variable.

This talk is based on joint work with Nathanaël Berestycki and Jonathan Hermon.