

Stanford University
Departments of Mathematics and Statistics

PROBABILITY SEMINAR

4:30pm, Monday, February 29, 2016
Sequoia Hall Room 200

Cookies served at 4pm, 1st floor Lounge.

Speaker: Yuval Peres, *Microsoft Research*

Title: Pinpointing mixing time in expanders and random graphs

Abstract:

We determine precisely the mixing time of random walk on optimal d -regular expander graphs (also known as Ramanujan graphs), and show it is the time it takes the walk to reach the maximum distance from its starting point. These walks exhibit cutoff: a sharp decrease of the total variation distance to the stationary measure in a relatively short time interval. On the other hand, we show that for random walks on the giant component of supercritical Erdős–Renyi random graphs, mixing occurs long after the maximal distance from the starting point is reached; this is explained via a dimension drop for random walks on Galton–Watson trees. Nevertheless, from most starting nodes, the cutoff phenomenon holds.

This talk is based on joint works with Eyal Lubetzky (arxiv.org/abs/1507.04725) and with Berestycki-Lubetzky-Sly (arxiv.org/abs/1504.01999).