מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Geometric Functional Analysis and Probability Seminar

Room 155 ,Ziskind Building
on Thursday, Nov 29, 2018
at 13:30

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Large deviations of subgraph counts for sparse random graphs

Abstract:

For fixed t>1 and L>3 we establish sharp asymptotic formula for the log-probability that the number of cycles of length L in the Erdos - Renyi random graph G(N,p) exceeds its expectation by a factor t, assuming only that p >> log N/sqrt(N). We obtain such sharp upper tail bounds also for the Schatten norms of the corresponding adjacency matrices, and in a narrower range of p=p(N), also for general subgraph counts. In this talk, based on a recent joint work with Nick Cook, I will explain our approach and in particular our quantitative refinement of Szemeredi's regularity lemma for sparse random graphs in the large deviations regime.