

Séminaire de Probabilités et Statistique

Mardi 14 Septembre à 14h00

Laboratoire Dieudonné

Salle de réunion Fizeau - LJAD

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Large deviations of random walks on random graphs.

We study the large deviations of time-additive observables of unbiased random walks evolving on large (typical) Erdos-Renyi random graphs, and construct a modified random walk that explains, by means of an effective process, how atypical fluctuations of these observables arise in the long-time limit. Two observables are considered : the mean degree of the nodes visited by the random walk and the mean logarithm of the degree of the nodes visited. For the first, the effective process provides a new way to understand dynamical phase transitions arising in degree fluctuations, which can be related to localization transitions. For the second, we re-obtain using a completely new approach, recent results about the maximum entropy random walk.