

The number of edges in certain random graphs

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Consider a random graphs with randomly coloured vertices where the probability of the presence or absence of an edge depends only on the colours of its vertices and, given the colouring, edges are independent. The talk will discuss (the decay of) the probability of getting an average number of edges that is far from its mean when the number of vertices is large. There are two different regimes, one arising from unusual colouring followed by typical edge placement and the other from unusual edge placement. (In the process, I intend to illustrate the use of a large-deviation result for mixtures.)