

1 Title

Maximum cut on random regular graphs

2 Abstract

The maximum cut problem is one of the pivotal random graph problems. One aims to partition the vertex set of a random graph into two classes such that the maximum number of edges lies in the cut between the two classes. In this talk, we consider the maximum cut problem on random d -regular graphs $G(n,d)$ with n vertices. Using the interpolation method, we establish tighter bounds on the expected maximum cut size on $G(n,d)$, thereby confirming conjectured values by Zdeborova and Boettcher (2009). Moreover, we are able to pinpoint a structural phase transition which marks the onset of long-range correlations in $G(n,d)$.