



Mathematics and CS Seminar

Extreme Eigenvalues of critical Erdős-Rényi graphs

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Host: Laszlo Erdős

In this talk, we present recent results on the extreme eigenvalues of the adjacency matrix of Erdős-Rényi graphs. The Erdős-Rényi graph G has N vertices and any two vertices are connected with probability p , independently of other edges.

If p is large then the adjacency matrix A of G behaves like a Wigner random matrix and has the semicircle law on $[-2,2]$ as limiting eigenvalue density. Moreover, the extreme eigenvalues converge to -2 and 2 , respectively.

If p is small then, however, A has many eigenvalues outside $[-2,2]$.

Recently, the critical value of p for this transition has been determined and a precise connection between the large degrees of G and the extreme eigenvalues of A has been established.

This is joint work with Raphael Ducatez and Antti Knowles.

Thursday, July 11, 2019 03:30pm - 06:00pm

IST Austria Campus Heinzl Seminar Room / Office Bldg West (I21.EG.101)



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