Roma Tre

DIPARTIMENTO DI MATEMATICA E FISICA

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Spectra of critical Erdős-Rényi graphs

Speaker: Johannes Alt - University of Bonn

Time: Wednesday May 13, 13:00-14:00

Location: Room B308, Largo S. Murialdo 1 (Roma)

We consider the Erdős-Rényi graph G in its critical regime when its expected degree d scales like the logarithm of its number of vertices. On this critical scale, G undergoes a connectivity transition through the formation of isolated vertices. Moreover, localized eigenvector emerge. The time evolution of a free quantum particle on G is governed by the adjacency matrix A of G through the Schrödinger equation. We determine the solution to this Schrödinger equation by comparison to an infinite tree. As A possesses localized and delocalized eigenvectors, the solution is in general a mixture of localized and scattering waves.