

Institut für Diskrete Mathematik

Combinatorics Seminar

Friday 22nd November 12:30

AE06, Steyrergasse 30

Local resilience for random geometric graphs

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(ISTA)

Given an increasing graph property P, a graph G is x-resilient with respect to P if, for every spanning subgraph H of G where each vertex keeps more than a (1 - x)-proportion of its neighbours, H has property P. Since its introduction by Sudakov and Vu, the analysis of local resilience for the Erdős-Rényi random graph has seen important developments in the last 15 years, culminating in recent results of Montgomery and Nenadov, Steger and Trujić confirming that Hamiltonicity is born resilient.

This talk concerns results around the local resilience of random geometric graphs with respect to connectivity and containment of long cycles. In particular, we are going to see why the 2-dimensional random geometric graph is very far from being born resilient. This talk is based on a joint paper with Alberto Espuny Díaz (University of Heidelberg) and Alexandra Wesolek (TU Berlin).

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