

Institut für Diskrete Mathematik

Seminar für Kombinatorik und Optimierung

Friday 21st May 14:15

Online meeting (Webex)

A sharp threshold for Ramsey's theorem

WOJCIECH SAMOTIJ

(Tel Aviv University)

Given graphs G and H and an integer $r \geq 2$, we write $G \rightarrow (H)_r$ if every r -colouring of the edges of G contains a monochromatic copy of H . It follows from Ramsey's theorem that, when n is sufficiently large, $G \rightarrow (H)_r$ is a nontrivial, monotone property of subgraphs G of K_n . The celebrated work of Rödl and Ruciński from the 1990s located the threshold for this property in the binomial random graph $G_{n,p}$ for all H and r . We prove that this threshold is sharp when H is a clique or a cycle, for every number of colours r ; this extends earlier results of Friedgut, Rödl, Ruciński, and Tetali and of Schacht and Schulenburg.

This is joint work with Ehud Friedgut, Eden Kuperwasser, and Mathias Schacht.

Meeting link:

<https://tugraz.webex.com/tugraz/j.php?MTID=me01f43109c693c884b459339d643d7d9>

Meeting number: 121 128 5385

Joshua Erde, Mihyun Kang