

Institut für Diskrete Mathematik

## Combinatorics Seminar

Thursday 10th March 16:30 (Irregular date and time)

Online meeting (Webex)

## Size Ramsey Numbers

JACOB FOX

(Stanford University)

The size Ramsey number of a graph  $H$  is defined as the minimum number of edges in a graph  $G$  such that there is a monochromatic copy of  $H$  in every two-coloring of the edges of  $G$ . The size Ramsey number was introduced by Erdős, Faudree, Rousseau, and Schelp in 1978 and they ended their foundational paper by asking whether one can determine up to a constant factor the size Ramsey numbers of three families of graphs: complete bipartite graphs, book graphs, and starburst graphs. In this talk, we completely resolve the latter two questions and make substantial progress on the first by determining up to a constant factor the size Ramsey number of complete bipartite graphs with parts of size  $s$  and  $t$  for all  $t = \Omega(s \log s)$ . The proofs involve a variety of unusual random graph models.

Based on joint work with David Conlon and Yuval Wigderson.

Meeting link:

<https://tugraz.webex.com/tugraz/j.php?MTID=m40f85343e56ff5051d731ace1bea82e4>

Meeting number: 2731 089 0467

Password: btHRJxCa252

Joshua Erde, Mihyun Kang