Graz University of Technology

Institut für Diskrete Mathematik

Combinatorics Seminar

Friday 14th October 14:15

Online meeting (Webex)

Monochromatic components with many edges

Mykhaylo Tyomkyn

(Charles University Prague)

Given an r-edge-colouring of the complete graph K_n, what is the largest number of edges in a monochromatic connected component? This natural question has only recently received the attention it deserves, with work by two disjoint subsets of the authors resolving it for the first two special cases, when $r = 2$ or 3. Here we introduce a general framework for studying this problem and apply it to fully resolve the $r = 4$ case, showing that such a coloring always yields a monochromatic component with at least $\frac{1}{12}\binom{n}{2}$ edges, where the constant $\frac{1}{12}$ is optimal only when the coloring matches a certain construction of Gyarfas.

Joint work with David Conlon and Sammy Luo.

Meeting link:

https://tugraz.webex.com/tugraz/j.php?MTID=m44797227fd680cc7956ebb840b6f033a

Meeting number: 2730 500 3129

Password: vQydpg372D4

Joshua Erde, Mihyun Kang, Michael Missethan