Combinatorics
Seminar

Homogeneous Substructures in Ordered Matchings

Andrzej Rucinski
Adam Mickiewicz University, Poznan

Abstract: An ordered matching M_n is a partition of a linearly ordered set of size 2n into n pairs (called edges). Taking the linear ordering into account, every pair of edges forms one of three patterns: AABB, ABBA, or ABAB. A submatching with all pairs of edges forming the same pattern is called a clique. In my talk, I will first show an Erdos-Szekeres type result guaranteeing a large clique in every matching M_n. Then I will move on to a random (uniform) setting and investigate the largest size of a clique of a given type (pattern) present in almost all matchings. Finally, I will attempt to generalize these results to r-uniform hypermatchings, that is, partitions of a linearly ordered set of size rn into n r-element subsets. This is joint work with Andrzej Dudek and Jarek Grytczuk.

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