

Abstract - Edge-partitioning graphs into paths and trees – (Tereza Klimosova)

In 2006, Barat and Thomassen conjectured that for a fixed tree T , every sufficiently edge-connected graph with the number of edges divisible by $|E(T)|$ has a T -decomposition. That is, the edge set of the graph can be partitioned into isomorphic copies of T . The conjecture was recently proven by Bensmail, Harutyunyan, Le, Merker and Thomasse. Bensmail, Harutyunyan, Le, and Thomasse posed a strengthened version of the conjecture of Barat and Thomassen, that for a fixed tree T , every graph with sufficiently high degree and with the number of edges divisible by $|E(T)|$ has a T -decomposition if it is sufficiently highly edge-connected in terms of maximal degree of T . They proved the strengthened conjecture for T being a path. The talk will contain several extensions of the results above. We give the optimum edge-connectivity bound of the strengthened version of Barat-Thomassen conjecture for paths and we disprove the conjecture for trees of maximal degree at least three. We also prove a relaxed version of the conjecture, showing that for two fixed trees T and T' with coprime numbers of edges, every connected graph with sufficiently high degree has a T, T' -decomposition. Joint work with Stephan Thomasse.

Abstract - Fringe subtree counts of random trees – (Matas Šileikis)

A fringe tree of a rooted tree is the subtree induced by a vertex and all its descendants. I will present our result with C. Holmgren and S. Janson on the asymptotic normality of the number of small fringe trees in two random tree models: preferential attachment and m -ary search trees.