

Induced Turán numbers

Michael Tait (Carnegie Mellon University)

The Kővari-Sós-Turán theorem says that if G is an n -vertex graph with no $K_{s,t}$ as a subgraph, then $e(G) = O(n^{2-1/s})$. Our main theorem states that if H is any fixed graph, and if G is H -free and does not contain $K_{s,t}$ as an *induced subgraph*, then still $e(G) = O(n^{2-1/s})$. A key step in our proof is to give a nontrivial upper bound on the number of cliques of fixed size in a K_r -free graph with no induced copy of $K_{s,t}$. This result is an induced analog of a recent theorem of Alon and Shikhelman and is of independent interest. Joint work with Po-Shen Loh and Craig Timmons.