Induced Ramsey Numbers of P_3 with other graphs

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Abstract

The induced Ramsey number $IR(G, H)$ equals n if there is a graph F on n vertices such that every 2-colouring of its edges with red and blue results in either a red copy of G as an induced subgraph of F, or an induced blue H, and no graph with fewer than n vertices has this property. The talk will present a few results on induced Ramsey numbers of P_3 with other graphs. We prove that $IR(P_3, G) \le |V(G)| + |E(G)|$ and then show that this bound is sharp when G is a complete graph. We will also show a stronger bound that is sharp for complete multipartite graphs and vertex disjoint unions of such graphs. Finally, we will present a generalization of the general upper bound to stars, instead of P_3. (This is joint work with A. Kostochka.)