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Zero Forcing Sets in H-matchable graphs and a few other infinite classes of graphs

Abstract:

In this talk, a graph $G = (V(G), E(G))$ has no isolated vertices and is finite, simple, and undirected. Fix a non-trivial connected graph H. A *perfect H-matching* of a graph G is a set $\{H_1, ..., H_n\}$ of vertex-induced subgraphs of G (i.e., all $G[V(H_i)] = H_i$) where $\{V(H_1), ..., V(H_n)\}$ partitions $V(G)$ and each subgraph $H_i \cong H$. Two perfect H-matchings of G are *equal* iff they are equal as sets of graphs. A perfect matching of G is then a perfect P_2-matching of G. We say that G is *H-matchable* (*matchable*) iff G has a perfect H-matching (perfect matching). We will explore the possibilities for a zero forcing number of an H-matchable graph as well as a few other infinite classes of graphs.

Keywords: perfect matching, perfect H-matching, trees, graphs, zero forcing number