Zero Forcing Sets in H-matchable graphs

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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). The zero forcing number of a simple graph was introduced by the "AIM Minimum Rank-Special Graphs Work Group" to bound the minimum rank for numerous families of graphs. Zero forcing parameters has been investigated further and has been applied to the minimum rank problem in much recent literature. We will explore the possibilities for a zero forcing number of a H-matchable graph.

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