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DOMINATING INDUCED MATCHING IN GRAPHS

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Abstract

The concept of domination in graphs appears as a natural model for facility location problems, and has many applications in design and analysis of communication networks, network routing and coding theory, among others.

An edge of G dominates itself and every edge adjacent to it. A *dominating induced matching* (DIM) (or *efficient edge dominating set* (EEDS) in some paper) of G is an induced matching that dominates every edge of G . We denote $dim(G)$ the size of the smallest DIM in G . Clearly, not every graph has DIM. For every edge e , let D_e be the set of edges that are dominated by e . Note that for a DIM, all edges are being dominated by exactly one of the edges in DIM.

In this talk, we present some graph theoretic and algorithmic property of dominating induced matching in graphs. Also, we show the relation between dominating induced matching and some other graph parameters.

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