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Vertices contained in all or in no minimum semitotal dominating set of a tree. (English)

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Summary: Let G be a graph with no isolated vertex. In this paper, we study a parameter that is squeezed between arguably the two most important domination parameters; namely, the domination number, $\gamma(G)$, and the total domination number, $\gamma_t(G)$. A set S of vertices in a graph G is a semitotal dominating set of G if it is a dominating set of G and every vertex in S is within distance 2 of another vertex of S . The semitotal domination number, $\gamma_{t2}(G)$, is the minimum cardinality of a semitotal dominating set of G . We observe that $\gamma(G) \leq \gamma_{t2}(G) \leq \gamma_t(G)$. We characterize the set of vertices that are contained in all, or in no minimum semitotal dominating set of a tree.

MSC:

05C69 Vertex subsets with special properties (dominating sets, independent sets, cliques, etc.)

Cited in 10 Documents

Keywords:

domination; semitotal domination; trees

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