On minimum intersections on certain secondary dominating sets

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Let $k \geqslant 1$ be an integer. A subset $D \subset V(G)$ is (1,k)-dominating if for every vertex $v \in V(G) \setminus D$ there are $u, w \in D$ such that $uv \in E(G)$ and $d_G(v, w) \leqslant k$. If $k = 1$ then we obtain the definition of (1,1)-dominating sets, which are also known as 2-dominating sets. If $k = 2$ then we have the concept of (1,2)-dominating sets, see [1]. A *proper* (1,2)*-dominating set* is (1,2)-dominating set that is not (1,1)-dominating, see [3]. Even though (1,1)-dominating sets and proper (1,2)-dominating sets cannot be equal, they do not have to be disjoint. Therefore, it is natural to ask what is the minimum possible cardinality of the intersection of such sets in a given graph.

In the talk we present some results concerning minimum intersections of the (1,1)-dominating sets and proper (1,2)-dominating sets in some classes of graphs.

References

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