ON PROPER (1,1,2)-KERNELS IN GRAPHS

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Let $G$ be an undirected, connected, simple graph. A subset $J \subset V(G)$ is a $(1,1,2)$-kernel of $G$ if $J$ is independent and for each vertex $x \in V(G) \setminus J$ there are in $J$ three distinct vertices $y, u, v$ such that $xy \in E(G)$, $xu \in E(G)$ and $d_G(x, v) \leq 2$. If for each vertex $x \in V(G) \setminus J$ there is $v \in J$ such that $d_G(x, v) = 2$ then a subset $J$ is a proper $(1,1,2)$-kernel of $G$.

Every $(1,1,2)$-kernel (also a proper $(1,1,2)$-kernel) is a kernel, a 2-dominating kernel and a $(1,2)$-kernel of $G$.

In the talk we give necessary and sufficient conditions for the existence of proper $(1,1,2)$-kernels in graphs.

Keywords: independence, domination, kernel.

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References