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# Global 2-Point Set Domination Number of a Graph

Purnima Gupta [1] and Deepti Jain [2]

*Sri Venkateswara College*
*University of Delhi*
*Delhi, India.*

**Abstract**

A set $D$ of vertices in a graph $G = (V, E)$ is called a *2-point set dominating set* of $G$ if for every set $T \subseteq V - D$ there exists a non-empty set $S \subseteq D$ containing at most two vertices such that the induced subgraph $\langle S \cup T \rangle$ is connected. A set $D \subseteq V(G)$ is called a *global 2-point set dominating set* of $G$ if $D$ is a 2-point set dominating set of both $G$ and $\bar{G}$. The *global 2-point set domination number*(2-point set domination number) is the minimum cardinality of a global 2-point set dominating set (2-point set dominating set) in $G$. In this paper we determine bounds on the global 2-point set domination number of a graph in terms of other graph invariants. We have also given relation between global 2-point set domination number and 2-point set domination number for some classes of graphs.

*Keywords:* 2-Point Set Domination, Global 2-Point Set Domination.

[1] Email: purnimachandni1@gmail.com
[2] Email: djain@svc.ac.in

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