

# Signed Edge Domination Numbers of Complete Tripartite Graphs

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## Abstract

The closed neighborhood  $N_G[e]$  of an edge  $e$  in a graph  $G$  is the set consisting of  $e$  and of all edges having an end-vertex in common with  $e$ . Let  $f$  be a function on  $E(G)$ , the edge set of  $G$ , into the set  $\{-1, 1\}$ . If  $\sum_{x \in N[e]} f(x) \geq 1$  for each edge  $e \in E(G)$ , then  $f$  is called a signed edge dominating function of  $G$ . The signed edge domination number  $\gamma'_s(G)$  of  $G$  is defined as  $\gamma'_s(G) = \min\{\sum_{e \in E(G)} f(e) \mid f$  is a signed edge dominating function of  $G\}$ . In this presentation, we find the signed edge domination number for the complete tripartite graph  $K_{m,n,p}$ , where  $m \leq n \leq p \leq m + n$ .