ON THE TOTAL EDGE IRREGULARITY STRENGTH OF GENERALIZED HELM

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Abstract

A total $k$-labeling is a map that carries vertices and edges of a graph $G$ into a set of positive integer labels $\{1, 2, ..., k\}$. An edge irregular total $k$-labeling of a graph $G$ is a total $k$-labeling such that the weights calculated for all edges are distinct. The weight of an edge $uv$ in $G$ is defined as the sum of the label of $u$, the label of $v$ and the label of $uv$. The total edge irregularity strength of $G$, denoted by $tes(G)$, is the minimum value of the largest label $k$ over all such edge irregular total $k$-labelings. In this paper, we investigate the total edge irregularity strength of generalized helm, $H_{m,n}$ for $n \geq 3$, $m = 1, 2$, and $m \equiv 0 \ (mod\ 3)$.

Keywords: total $k$-labeling, edge irregular total $k$-labeling, total edge irregularity strength, generalized helm.

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