ABSTRACT

Maximal Edges of Trees with Locating-Chromatic Number Three

By

Triani

Let c be a proper k-coloring of a connected graph G. Let $\prod = \{C_1, C_2, ..., C_k\}$ be a induced partition of $V(G)$ by c, where C_i is the partition class having all vertices with color i. The color code $c_{\prod}(v)$ of vertex v is the ordered k-tuple $(d(v, C_1), d(v, C_2), ..., d(v, C_k))$, where $d(v, C_i) = \min \{d(v, x) | x \in C_i\}$, for $1 \leq i \leq k$. If all vertices of G have distinct color codes, then c is called a locating-coloring of G. The locating-chromatic number of G, denoted by $\chi_L(G)$. A tree has locating-chromatic number three if only if T is either a path P_3 or P_4, a double star $S_{1,2}$ or $S_{2,2}$ or a subtree containing that isomorphic of either G_1 or G_2. By attaching a path of arbitrary lenght to each vertex in a tree that has locating-chromatic number three, then it formed trees with locating-chromatic number four.

Key-words : Locating-chromatic number, graph, tree.