The locating-chromatic number of trees with maximum degree 3 or 4

Hilda Assiyatun[1]

[1]Combinatorial Mathematics Research Group ITB, email :hilda@math.itb.ac.id

Abstract

A k-coloring of G is a function $c : V(G) \to \{1, 2, \ldots, k\}$ where $c(u) \neq c(v)$ for two adjacent vertices u and v in G and k is a positive integer. The partition $\pi = \{C_1, C_2, \ldots, C_k\}$ is induced by the k-coloring c of the vertices of G. The color code of vertex v is $c_\pi(v) = (d(v, C_1), d(v, C_2), \ldots, d(v, C_k))$ where $d(v, C_i) = \min\{d(v, x)|x \in C_i\}$ for $1 \leq i \leq k$. If all distinct vertices of G have distinct color codes, then c is called a locating k-coloring of G. The locating chromatic number of G, denoted by $\chi_L(G)$ is the least integer k such that G has a locating k-coloring.

In this talk we will discuss the locating-chromatic number of trees embedded in 2-dimensional grid and binary trees. This is an attempt to answer an open problem of determining the locating-chromatic number of trees with maximum degree 3 or 4