Local Distance Antimagic Labeling of Graphs

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Abstract

Let G be a graph of order n and size m. Define a bijection whose domain is either edge set (or vertex set) of G, then the vertex weight is defined as the sum of the labels of each edge incident to that vertex (or sum of labels of all adjacent vertices). The function f is said to be a local antimagic (local distance antimagic) labeling of G if $w(u) \neq w(v)$ for every pair of adjacent vertices $u, v \in V(G)$. A graph which admits such a labeling is said to be a local antimagic (local distance antimagic) graph. It is clear that the local antimagic labeling of a graph induces a proper vertex coloring of G, where the vertex v is assigned the color $w(v)$. The local antimagic chromatic number $\chi_{la}(G)$ and local distance antimagic chromatic number $\chi_{ld}(G)$ is the minimum number of colors used over all colorings of G.

In this lecture, we discuss some of our preliminary investigation on local distance antimagic labeling of graphs.

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