Local Antimagic Edge Labeling of a Graph

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Let $G = (V, E)$ be a graph with $|V| = n$ and $|E| = m$. Let $f : E \to \{1, 2, ..., m\}$ be a bijection. The weight $w(v)$ of a vertex v is the sum of the labels of the edges incident at v. The labeling f is called a *local anitmagic labeling* if $w(u) \neq w(v)$ for any two adjacent vertices u and v. Thus a local antimagic labeling induces a proper vertex coloring where $w(v)$ is the color of the vertex v. The local antimagic chromatic number $\chi_{la}(G)$ is the minimum number of colors taken over all colorings induced by local antimagic labelings of G. In this talk we present a survey of results on local antimagic chromatic number, open problems and formulation of similar concepts using other types of labelings.

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