On the (super) local antimagic (total) vertex coloring of graphs

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The local antimagic labeling of a graph G with $|V|$ vertices and $|E|$ edges is defined to be an assignment $f : E \to \{1, 2, \cdots, |E|\}$ so that the weights of any two adjacent vertices u and v are distinct, that is, $w(u) \neq w(v)$ where $w(u) = \Sigma_{e \in E(u)} f(e)$ and $E(u)$ is the set of edges incident to u. Following this notion, the local antimagic total labeling of G is defined analogously by adding the label of vertices. Then the weight of a vertex u in the local antimagic total labeling is calculated as $w(u) = f(u) + \Sigma_{e \in E(u)} f(e)$. If the vertices of G receive the smallest labels, that is, $1, 2, ..., |V|$, then the such labeling is called super local antimagic total labeling. All these three types of local antimagic labelings induce a proper vertex coloring of G where the vertex u is assigned the color $w(u)$. The (super) local antimagic (total) chromatic number is the minimum number of colors taken over all colorings induced by (super) local antimagic (total) labelings of G. In this talk, we present the results on these three types of labelings for some particular classes of graphs.