On inclusive and non-inclusive vertex irregular d-distance vertex labelings

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Let k be a positive integer. A *(non-inclusive) vertex irregular d-distance vertex labeling* λ is an irregular labeling of vertices of a graph G, $\lambda : V(G) \to \{1, 2, \ldots, k\}$, where the weight of a vertex $v \in V(G)$ is the sum of all labels of distance up to d from v, i.e.

$$wt(v) = \sum_{\{u:1\leq d(u,v)\leq d\}} \lambda(u).$$

The largest label used in this labeling is called the d-distance irregularity strength of G, denoted by $dis_d^1(G)$. It is called an *inclusive vertex irregular d-distance vertex labeling* if the label of the vertex is included in its own weight. The inclusive d-distance irregularity strength of G, denoted by $dis_d^0(G)$. In this talk, we give the distance irregularity strength for certain family of graphs.

Keywords: Vertex irregular d-distance vertex labeling, inclusive vertex irregular d-distance vertex labeling, distance irregularity strength, inclusive distance irregularity strength.