In this talk we will consider two natural extensions of previously defined graph labelings. The first labeling is a magic labeling whose evaluation is based on the neighbourhood of a vertex and the second is an antimagic labeling whose evaluation is based on the graph’s covering.

We define a 1-vertex-magic vertex labeling of a graph with \( v \) vertices as a bijection \( f \) taking the vertices to the integers 1, 2, ..., \( v \) with the property that there is a constant \( k \) such that at any vertex \( x \), \( \sum_{y \in N(x)} f(y) = k \), where \( N(x) \) is the set of vertices adjacent to \( x \).

A simple graph admits an \( H \)-covering, if every edge belongs to a subgraph that is isomorphic to \( H \). An \((a, d)\)-\( H \)-antimagic total labeling of a graph with \( v \) vertices and \( e \) edges is a bijection \( g \) taking the vertices and edges to the integers 1, 2, ..., \( v + e \) such that for all subgraphs \( H' \) isomorphic to \( H \), the \( H \)-weights \( w(H') = \sum_{x \in V(H')} g(x) + \sum_{xy \in E(H')} g(xy) \) constitute an arithmetic progression \( a, a+d, a+2d, \ldots, a+(t-1)d \) where \( a \) and \( d \) are positive integers and \( t \) is the number of subgraphs isomorphic to \( H \).

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