



## ON 1-2-3-CHROMATIC NUMBER

ANDREA FEŇOVČÍKOVÁ

Let  $G = (V, E)$  be a graph with no component isomorphic to  $K_2$  and let  $f : E \rightarrow \{1, 2, 3\}$  be an edge labeling of  $G$ . The weight of a vertex is defined as the sum of labels of all edges incident with that vertex. If the weights of any two adjacent vertices are distinct then  $f$  is called a chromatic 1-2-3 labeling of  $G$ . In this case the vertex weights give a proper vertex coloring of  $G$  where the color of a vertex is its vertex weight. This naturally leads to the concept of the 1-2-3-chromatic number. The 1-2-3-chromatic number is defined as the minimum number of colors taken over all colorings of  $G$  induced by chromatic 1-2-3 labelings of  $G$ .

In this talk, we present several basic results on this new parameter.