

CSGT 2024, June 3-7 2024, Trojanovice
59th Czech-Slovak Conference on Graph Theory 2024
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## ON 1-2-3-CHROMATIC NUMBER


#### Abstract

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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.


