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Neighbor sum distinguishing total chromatic number of 2-degenerate graphs. (English)

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Summary: Let $G = (V(G), E(G))$ be a graph and ϕ be a proper total k -coloring of G by using the color set $\{1, 2, \dots, k\}$. For any $v \in V(G)$, let $f(v) = \sum_{uv \in E(G)} \phi(uv) + \phi(v)$. The coloring ϕ is neighbor sum distinguishing, if $f(u) \neq f(v)$ for each edge $uv \in E(G)$. The neighbor sum distinguishing total chromatic number of G , denoted by $\chi''_{\Sigma}(G)$, is the smallest integer k such that G admits a k -neighbor sum distinguishing total coloring. In this paper, by using the famous Combinatorial Nullstellensatz, we determine $\chi''_{\Sigma}(G)$ for any 2-degenerate graph G with $\Delta(G) \geq 6$.

MSC:

05C15 Coloring of graphs and hypergraphs

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