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Neighbor sum distinguishing total colorings of graphs with bounded maximum average degree. (English) [Zbl 1408.05061](#)

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Summary: A proper $[h]$ -total coloring c of a graph G is a proper total coloring c of G using colors of the set $[h] = \{1, 2, \dots, h\}$. Let $w(u)$ denote the sum of the color on a vertex u and colors on all the edges incident to u . For each edge $uv \in E(G)$, if $w(u) \neq w(v)$, then we say the coloring c distinguishes adjacent vertices by sum and call it a neighbor sum distinguishing $[h]$ -total coloring of G . By $\text{tn}_{\Sigma}(G)$, we denote the smallest value h in such a coloring of G . In this paper, we obtain that G is a graph with at least two vertices, if $\text{mad}(G) < 3$, then $\text{tn}_{\Sigma}(G) \leq k + 2$ where $k = \max\{\Delta(G), 5\}$. It partially confirms the conjecture proposed by *M. Piłśniak* and *M. Woźniak* ["On the adjacent vertex distinguishing index by sums in total proper colorings", Preprint MD 051, Instytut Informatyki i Matematyki Komputerowej, Uniwersytetu Jagiellońskiego].

MSC:

05C15 Coloring of graphs and hypergraphs

05C07 Vertex degrees

Cited in **1** Review
Cited in **37** Documents

Keywords:

total coloring; neighbor sum; average degree

Full Text: [DOI](#)

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