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An improved upper bound on the adjacent vertex distinguishing total chromatic number of graphs. (English) [Zbl 1383.05124](#)

Discrete Math. 341, No. 5, 1472-1478 (2018).

Summary: An adjacent vertex distinguishing total k -coloring of a graph G is a proper total k -coloring of G such that any pair of adjacent vertices have different sets of colors. The minimum number k needed for such a total coloring of G is denoted by $\chi''_a(G)$. In this paper we prove that $\chi''_a(G) \leq 2\Delta(G) - 1$ if $\Delta(G) \geq 4$, and $\chi''_a(G) \leq \lceil \frac{5\Delta(G)+8}{3} \rceil$ in general. This improves a result in *D. Huang et al.* [*ibid.* 312, No. 24, 3544–3546 (2012; [Zbl 1258.05037](#))] which states that $\chi''_a(G) \leq 2\Delta(G)$ for any graph with $\Delta(G) \geq 3$.

MSC:

[05C15](#) Coloring of graphs and hypergraphs

[05C07](#) Vertex degrees

[05C35](#) Extremal problems in graph theory

Cited in 1 Document

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