

LIST STAR EDGE-COLORING OF SUBCUBIC GRAPHS

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Abstract

A *star edge-coloring* of a graph G is a proper edge coloring such that every 2-colored connected subgraph of G is a path of length at most 3. For a graph G , let the *list star chromatic index* of G , $ch'_{st}(G)$, be the minimum k such that for any k -uniform list assignment L for the set of edges, G has a star edge-coloring from L . Dvořák, Mohar and Šámal asked whether the list star chromatic index of every subcubic graph is at most 7. We prove that it is at most 8. We also prove that if the maximum average degree of a subcubic graph G is less than $\frac{7}{3}$ (respectively, $\frac{5}{2}$), then $ch'_{st}(G) \leq 5$ (respectively, $ch'_{st}(G) \leq 6$).

Keywords: graph coloring, edge coloring, star coloring, planar graphs.

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