

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.

2010 Mathematics Subject Classification: 05C15.

¹Research of this author is supported in part by NSF grant DMS-1266016 and by grant 15-01-05867 of the Russian Foundation for Basic Research.

²This study has been carried out with financial support from the French State, managed by the French National Research Agency (ANR) in the frame of the "Investments for the future" Programme IdEx Bordeaux - CPU (ANR-10-IDEX-03-02).

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Received 16 September 2015

Revised 11 May 2017

Accepted 11 May 2017