

## LIST STAR EDGE-COLORING OF SUBCUBIC GRAPHS

SAMIA KERDJOUJ

*L'IFORCE, Faculty of Mathematics  
USTHB, BP 32 El-Alia, Bab-Ezzouar 16111, Algiers, Algeria*  
**e-mail:** s\_kerdjoudj@yahoo.fr

ALEXANDR KOSTOCHKA<sup>1</sup>

*University of Illinois at Urbana-Champaign  
Urbana, IL 61801, USA and Sobolev Institute of Mathematics  
Novosibirsk 630090, Russia*  
**e-mail:** kostochk@math.uiuc.edu.

AND

ANDRÉ RASPAUD<sup>2</sup>

*LaBRI (Université de Bordeaux), 351 cours de la Libération  
33405 Talence Cedex, France*  
**e-mail:** andre.raspaud@labri.fr

### 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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