1126-05-120 **Hui Lei** and **Yongtang Shi*** (shi@nankai.edu.cn), No. 94 Weijin Road, Nankai District, Center for Combinatorics, Nankai University, Tianjin, 300071, Peoples Rep of China, and **Zixia Song**. *Star chromatic index of subcubic multigraphs.*

The star chromatic index of a multigraph G, denoted $\chi'_s(G)$, is the minimum number of colors needed to properly color the edges of G such that no path or cycle of length four is bi-colored. A multigraph G is star k-edge-colorable if $\chi'_s(G) \leq k$. Dvořák, Mohar and Šámal [Star chromatic index, *J. Graph Theory* **72** (2013), 313–326] proved that every subcubic multigraph is star 7-edge-colorable. They conjectured in the same paper that every subcubic multigraph should be star 6-edge-colorable. In this paper, we first show that the problem of deciding whether a subcubic multigraph is star 3-edge-colorable is NP-complete. We then apply the structure results, along with a simple discharging method, to prove that every subcubic multigraph G is star 6-edge-colorable if $mad(G) < 5/2$ and star 5-edge-colorable if $mad(G) < 24/11$, respectively, where $mad(G)$ is the maximum average degree of a multigraph G. This partially confirms the conjecture of Dvořák, Mohar and Šámal. (Received January 08, 2017)