1155-05-388 **Yan Cao**, **Guantao Chen** and **Guangming Jing*** (gjing@augusta.edu), 1120 15th Street, Augusta, GA 30912. *A note on the Total Coloring of multigraphs.*

Let $G = (V(G), E(G))$ be a multigraph with maximum degree $\Delta(G)$, chromatic index $\chi'(G)$ and total chromatic number $\chi''(G)$. The Total Coloring conjecture proposed by Behzad and Vizing, independently, states that $\chi''(G) \leq \Delta(G)+\mu(G)+1$ for a multigraph G, where $\mu(G)$ is the multiplicity of G. Moreover, Goldberg conjectured that $\chi''(G) = \chi'(G)$ if $\chi'(G) \geq \Delta(G) + 3$ and noticed the conjecture holds when G is an edge-chromatic critical graph. We recently showed that $\chi''(G) = \chi'(G)$ if $\chi'(G) \geq \max\{\Delta(G) + 2, |V(G)| + 1\}$, and as a consequence $\chi''(G) = \chi'(G)$ if G contains a critical subgraph of size at least $|V(G)|/2$. (Received January 19, 2020)