1150-05-310 **Yan Cao**, **Guantao Chen**, **Guoli Ding**, **Guangming Jing*** (jingguangming@gmail.com) and **Wenan Zang**. *Gupta's Co-density Conjecture on edge cover index.*

Let $G = (V, E)$ be a multigraph. The *cover index* $\chi^c(G)$ of G is the greatest integer k for which there is a coloring of E with k colors such that each vertex of G is incident with at least one edge of each color. Let $\delta(G)$ be the minimum degree of G and let $\Gamma^c(G)$ be the *co-density* of G, defined by

$$\Gamma^c(G) = \min\left\{\frac{2|E^+(U)|}{|U|+1} : \ U \subseteq V, \ |U| \geq 3 \text{ and odd}\right\},$$

where $E^+(U)$ is the set of all edges of G with at least one end in U. Clearly, $\chi^c(G) \leq \min\{\delta(G), \Gamma^c(G)\}$. In 1978 Gupta proposed the following co-density conjecture: Every multigraph G satisfies $\chi^c(G) \geq \min\{\delta(G) - 1, \lfloor \Gamma^c(G) \rfloor\}$, which is the dual version of the Goldberg-Seymour conjecture on edge-colorings of multigraphs. In this talk we discuss a partial result towards this conjecture saying that $\chi^c(G) \geq \min\{\delta(G) - 2, \lfloor \Gamma^c(G) \rfloor - 1\}$. (Received July 12, 2019)