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Given a multigraph  $G = (V, E)$ , the *Chromatic index*  $\chi'(G)$  is the minimum number of colors needed to color the edges of  $G$  such that no two incident edges receive the same color. Let  $\Delta(G)$  be the maximum degree of  $G$  and let  $\Gamma(G) := \max \left\{ \frac{2|E(U)|}{|U|-1} : U \subseteq V, |U| \geq 3 \text{ and odd} \right\}$ .  $\Gamma(G)$  is called the *density* of  $G$ . Clearly, the density is a lower bound for the chromatic index  $\chi'(G)$ . Moreover, this value can be computed in polynomial time. Quite a few problems and conjectures in this field are related to the density, such as the Overfull conjecture, Seymour's exact conjecture, the Goldberg-Seymour conjecture, and the Core conjecture of Hilton and Zhao. In this talk, we will discuss some recent development on several density-related edge coloring problems. (Received January 15, 2021)