On the Chromatic Edge Stability Number of Graphs

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The chromatic edge stability number $es_\chi(G)$ of a graph G is the minimum number of edges whose removal results in a graph $H \subseteq G$ with chromatic number $\chi(H) = \chi(G) - 1$. The chromatic bondage number $\rho(G)$ of G is the minimum number of edges between any two color classes in a $\chi(G)$-coloring of G, where the minimum is taken over all $\chi(G)$-colorings of G.

In this talk, we characterize graphs for which these two parameters coincide. Moreover, we give general bounds and we determine these parameters for several classes of graphs.

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