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Some results on strong edge colourings

A strong edge-coloring of a graph G is an edge-coloring where any two vertices belonging to distinct edges with the same color are not adjacent; the fewest colours for which a graph G has a strong edge-colouring is its strong chromatic index, denoted $\chi'_s(G)$. Two major conjectures on the strong chromatic index are still oustanding – (1) $\chi'_s(G) \leq \frac{5}{4}\Delta(G)^2$ for any graph G (Erdős and Nešetřil, 1985) and (2) $\chi'_s(G) \leq \Delta(G)^2$ for any bipartite graph G (Faudree, Gyárfás, Schelp, Tuza, 1989). In this talk, I will survey the progress that has been made on these conjectures.