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On the chromatic index of STS block intersection graphs

Given a combinatorial design, its block intersection graph is obtained by creating a vertex for each block and making vertices adjacent when their blocks have non-empty intersection. The chromatic index $\chi'(G)$ of a graph G is the least number of colours with which the edges can be labelled such that adjacent edges are never of the same colour. For any simple graph of maximum degree $\Delta(G)$, Vizing has established that $\Delta(G) \leq \chi'(G) \leq \Delta(G) + 1$. Here we consider the chromatic index of block intersection graphs of Steiner triple systems. This is joint work with Jonathan Poulin.