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The inertia bound of a graph

The inertia bound is an upperbound on the independence number of a graph. Attributed to D.M. Cvetković, and sometimes referred to as the Cvetković bound, it uses eigenvalues of adjacency-like matrices. It was shown recently that graphs exist for which this bound is not tight. We share some results from a recent undergraduate research project focused on finding such graphs. This is joint work with University of Waterloo undergraduate Zach Dockstader.