ROBERT BAILEY, Carleton University, Ottawa

Metric dimension of distance-regular graphs

The metric dimension of a graph is the least size of a subset of vertices $\{v_1, v_2, \ldots, v_k\}$ such that for any vertex w, the list of distances $\big(d(w, v_1), d(w, v_2), \ldots, d(w, v_k)\big)$ uniquely identifies w. Introduced in the 1970s, this parameter has seen a flurry of recent interest from a variety of authors.

In this talk, we consider distance-regular graphs (and in particular, the special cases of distance-transitive and strongly regular graphs). By digging into the literature, we find some interesting results from other contexts from the early 1980s and rephrase them in terms of metric dimension. We also present some new results for Johnson graphs.

If time permits, we will also consider links between metric dimension of graphs and the base size of permutation groups.