Tripartite distance-regular graphs

Willem Haemers
Universiteit van Tilburg

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We give some necessary conditions for a graph to be 3-chromatic (tripartite) in terms of the spectrum of the adjacency matrix. For all known distance-regular graphs it is determined whether they are 3-chromatic. A start is made with the classification of 3-chromatic distance-regular graphs, and it is shown that such graphs, if not complete 3-partite, must have $\lambda \leq 1$.

(joint work with with Aart Blokhuis and Andries Brouwer)