

University of Delaware
Discrete Mathematics Seminar

Matchings and Eigenvalues

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Ewing Hall 336 4-5pm

Abstract

Brouwer and Haemers showed that in a k -regular graph with an even number of vertices if the third eigenvalue of the adjacency matrix is less than $k - 1 + \frac{3}{k+2}$ then there must be a perfect matching. Later Cioabă, Gregory and Haemers found the best possible bound on the third eigenvalue that guarantees the existence of a perfect matching. In this talk we find similar conditions that guarantee every edge is in a perfect matching.