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Erdős-Ko-Rado theorem for t -intersecting families of perfect matchings

An interesting way to answer some questions arising in design theory is to use both graph theory and matrix theory, which is the approach I employ to find extensions of the famous Erdős-Ko-Rado theorem to t -intersecting families of objects. Such a result would give the size and structure of the largest set of the t -intersecting objects. In this approach we define a graph so that finding the largest set of t -intersecting perfect matchings is equivalent to finding the largest coclique of this graph. Bounds on the size of max cliques can be found if we can determine the least eigenvalue of the adjacency matrix of our graph. In this talk I will present the progress I have made in determining these eigenvalues.