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Intersecting Families of Perfect Matchings

A family of perfect matchings of K_{2n} is t-intersecting if any two of its members have t edges in common. It has been conjectured that such a family cannot have size larger than $(2(n-t)-1)!!$ for sufficiently large n, and that the extremal families are precisely those comprised of every perfect matching containing a fixed set of t disjoint edges. We discuss a proof of this conjecture, emphasizing the algebraic aspects and techniques surrounding the proof.