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*On a generalization of the Erdos-Ko-Rado theorem to intersecting and set-wise intersecting perfect matchings*

A perfect matching ( $\mathcal{PM}$ ) in the complete graph  $K_{2k}$  is a set of edges in which every vertex is covered exactly once. Two  $\mathcal{PM}$ s are  $t$ -intersecting if they have at least  $t$  edges in common. Two  $\mathcal{PM}$ s  $P$  and  $Q$  of a graph on  $2k$  vertices are said to be set-wise  $t$ -intersecting if there exist edges  $P_1, \dots, P_t$  in  $P$  and  $Q_1, \dots, Q_t$  in  $Q$  whose unions of edges have the same set of vertices. In this talk we show an extension of the famous Erdős-Ko-Rado theorem to intersecting and set-wise intersecting  $\mathcal{PM}$  for  $t = 2$  and  $t = 3$ .