

Cliques in Steiner Systems

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A partial Steiner (k,l) -system is a k -uniform hypergraph $G=(V,E)$ with the property that every l -element subset of V is contained in at most one edge of G . In this talk we show that for given k , l and t there exists a partial Steiner (k,l) -system such that whenever an l -element subset from every edge is chosen, the resulting l -uniform hypergraph contains a clique of size t . We also establish asymptotic lower and upper bounds on the size of such cliques with respect to the order of Steiner systems.

This is joint work with František Franek and Vojtěch Rödl.