

Union-intersecting set systems

Dániel T. Nagy
Eötvös Loránd University, Budapest

Joint work with Gyula O.H. Katona

Three intersection theorems are proved. First, we determine the size of the largest set system, where the system of the pairwise unions is l -intersecting. Then we investigate set systems where the union of any s sets intersect the union of any t sets. The maximal size of such a set system is determined exactly if $s + t \leq 4$, and asymptotically if $s + t \geq 5$. Finally, we exactly determine the maximal size of a k -uniform set system that has the above described (s, t) -union-intersecting property, for large enough n .