JOZEFIEN D’HAESLEER, Universiteit Gent

Projective solids pairwise intersecting in at least a line

In the last decades, projective subspaces, pairwise intersecting in at least a $t$-space were investigated. The case with $t = 0$ (the Erdős-Ko-Rado-sets), received special attention. Let $\operatorname{PG}(n, q)$ be the projective space of dimension $n$, over the finite field of order $q$. In this talk, I discuss the structure of maximal sets of 3-spaces of $\operatorname{PG}(n, q)$, $n \geq 5$, pairwise intersecting in at least a line, and give an overview of the largest examples of these sets. We also generalize these results to a maximal set of $k$-dimensional spaces, mutually intersecting in at least a $(k - 2)$-dimensional space in $\operatorname{PG}(n, q)$, where $n \geq k + 2$. 