Rowen Louis (Bar-Ilan University): "Subspaces of division algebras"

Much of the structure of a division algebra can be garnered from the structure of its subspaces. For example, a division algebra of prime degree is cyclic if and only if it has a subspace each of whose elements have p-power in the center. We consider this and other conditions on the subspace, and describe the growth of $\set{\dim _K (KaK)^i : i \ge 1}$, for a maximal separable subfield K of a central simple algebra A and $a \in A \setminus K.$ We tie this to Brauer factor sets, the trace form, and the commutator question.

This is joint work with Matzri, Saltman, and Vishne, and in part with~Chapman.