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Universal operator algebras associated to homogeneous varieties

In this talk, we will consider universal operator algebras generated by commuting row contractions satisfying homogeneous polynomial relations. These algebras can be realized as algebras of functions on the varieties defined by the relations. It turns out that their structure is closely related to the geometry of the associated algebraic varieties.

We will discuss the question of when two algebras of this are type isomorphic. In particular, we obtain a geometric condition for two such algebras being topologically isomorphic, thereby giving a positive answer to a conjecture of Davidson, Ramsey and Shalit.