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Decomposing Star Configuration Ideals

Geometrically vertex decomposable ideals have a recursive structure that allows one to study the original ideal by investigating two related ideals, each of which is in one less variable. This underlying structure can be exploited to study important invariants of the ideal. Examples of ideals that are geometrically vertex decomposable include Schubert determinantal ideals and toric ideals of bipartite graphs. In this talk, we determine when the defining ideal of a star configuration in projective space is geometrically vertex decomposable. This is joint work with E. Guardo, E. Marangone, and A. Van Tuyl.