
KIERAN BHASKARA, McMaster University

h -polynomials and the GVD property of toric ideals of graphs

Abstract: Geometrically vertex decomposable (GVD) ideals form a class of ideals that generalize the Stanley-Reisner ideals of vertex decomposable simplicial complexes. It has been shown that some special families of toric ideals of graphs are GVD, but a complete characterization remains unknown. At the same time, several studies have investigated the algebraic invariants of toric ideals of graphs. One such invariant, the h -polynomial, has been explicitly described for only a small number of graph classes. In this talk, we describe a new family of graphs whose toric ideals are GVD. We then illustrate how the GVD property allows us to compute an explicit formula for the h -polynomials of this family. This talk is based on joint work with Higashitani and Shibu Deepthi, and separate joint work with Van Tuyl and Zotine.