

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Keller VandeBogert
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Date: Tuesday, September 14, 2021

Time: 2:30 PM

Location: 125 Hayes-Healy Hall

Zoom URL:

Lecture Title:

Iterated Mapping Cones for Strongly Koszul Algebras

Abstract

In the study of monomial ideals in polynomial rings, one method of constructing free resolutions is via iterated mapping cones. If the ideal under consideration is well behaved (ie, has linear quotients), then the resulting resolution may also be minimal. This was used by Herzog and Takayama to construct a minimal free resolution for certain classes of ideals admitting linear quotients which generalized other resolutions appearing in the literature, such as Eliahou-Kervaire. In this talk, we will see the extent to which iterated mapping cones for monomial ideals can be extended to Koszul algebras, including some of the difficulties in doing so, and construct a generalized version of the Herzog-Takayama resolution.