

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Alexandra Seceleanu
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Date: Thursday, April 15, 2021

Time: 3:00 PM

Location: Zoom

Zoom URL: [notredame.zoom.us/j/97739336655?
pwd=QmUxd3V2Rndyd0VFNlc0RFBxK0xPQT09](https://notredame.zoom.us/j/97739336655?pwd=QmUxd3V2Rndyd0VFNlc0RFBxK0xPQT09)

Lecture Title:

Canonical resolutions over Koszul algebras

Abstract

Koszul algebras are a class of (not necessarily commutative) algebras which show up naturally and abundantly in algebra and topology. An interesting feature of Koszul algebras is that they appear in pairs - every Koszul algebra has a dual algebra, which is also Koszul. One can use this duality to construct free resolutions. We focus on constructing explicit resolutions for the powers of the maximal ideal of a Koszul algebra. This generalizes a result of Buchsbaum and Eisenbud, which applies to the case where the Koszul algebra under consideration is a polynomial ring. The results are joint with Eleonore Faber, Martina Juhnke-Kubitzke, Haydee Lindo, Claudia Miller, and Rebecca R.G.