Department of Mathematics
University of Notre Dame

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Keller VandeBogert
University of Notre Dame

Date: Thursday, September 7, 2023
Time: 3:30 PM
Location: 258 Hurley Hall
Zoom URL: NA

Lecture Title:

The Total Rank Conjecture in Characteristic Two

Abstract

The total rank conjecture is a coarser version of the Buchsbaum-Eisenbud-Horrocks conjecture which, loosely stated, predicts that modules with large annihilators must also have "large" syzygies. In 2017, Walker proved that the total rank conjecture holds over rings of odd characteristic, using techniques that heavily relied on the invertibility of 2. In this talk, I will speak on joint work with Mark Walker where we settle (and generalize) the total rank conjecture over k-algebras of arbitrary characteristic. Our techniques take advantage of the classical Dold-Kan correspondence and allow us to prove an even stronger version of the total rank conjecture when k has characteristic 2.