UNIVERSITY OF NOTRE DAME

Algebraic Geometry and Commutative Algebra Seminar

Department of Mathematics



Guest Speaker: Alessandro Danelon

University of Michigan

Lecture Title:

The geometry of infinite tensors up to symmetry

Date: Wednesday, November 11, 2026 ***Time:*** 1:00 PM

Location: 258 Hurley Hall

Abstract:

Stillman's conjecture and the exponent of matrix multiplication have one thing in common: they deal with limits of tensors, as the number of variables grows. These limits naturally lead to infinite-dimensional varieties of tensors (GL-varieties), whose behavior is surprisingly tame once the symmetry is taken into account. For example, infinite cubic forms (infinite sums of cubic monomials) of infinite strength can be classified up to symmetry by a discrete invariant, while cubic polynomials cannot. I will talk about some aspects of the theory of GL-varieties and explain how they connect to commutative algebra and algebraic complexity theory. This includes joint work with Snowden relating infinite tensors and their automorphism groups to the classical model theory of permutation groups.