

Department Colloquium

Speaker: Mihai Fulger, Princeton University

Date: Friday, January 15

Time: 3:30 p.m.

Place: Jeffery 225

Title: Positivity for cycles

Abstract: It is an industry to study various large mathematical objects by some invariants that encode finite data. The various (co)homology groups are standard examples here. When working with algebraic varieties, one can assign finer invariants by looking at its subvarieties. In this way we obtain closed convex cones living inside homology-like real vector spaces.

Much of the development of higher-dimensional algebraic geometry in the last 50 years through the minimal model program is owed to this construction for subvarieties of dimension one (curves) and codimension one (divisors). The case of arbitrary dimension was seen as pathological due to a host of counterexamples. In recent joint work with Brian Lehmann, we aim to correct this negative outlook. I will present some foundational results about the structure of these cones. They extend classical results for (co)dimension one subvarieties.

NOTE: Change in time and place