

Geometry, Physics, and Representation Theory
Northeastern University

Alex Perry
Columbia University

Thursday, September 14, 2:50-3:50 pm, Lake Hall 509

Intersections of two Grassmannians in \mathbf{P}^9 .

Abstract

I will discuss the intersection of two copies of $\text{Gr}(2, 5)$ embedded in \mathbf{P}^9 , and the intersection of the two projectively dual Grassmannians in the dual projective space. These intersections are deformation equivalent Calabi-Yau threefolds. I will explain why they are derived equivalent but generically not birational, and use this to obtain a counterexample to the birational Torelli problem for Calabi-Yau threefolds, as well as new examples of zero divisors in the Grothendieck ring of varieties. This is joint work with Lev Borisov and Andrei Caldararu.