

Berkeley-Stanford Joint Algebraic Geometry Colloquium

Tuesday, November 27, at Stanford

William Fulton (Michigan)

3:45-4:45, 383-N

On the equivariant cohomology of homogeneous varieties

Abstract: Although equivariant cohomology was constructed by Borel in 1960, it has taken most algebraic geometers a long time to respond to it. For Grassmannians and other homogeneous varieties, working equivariantly gives Schubert calculus a rich and powerful combinatorial structure. I will not assume familiarity with equivariant cohomology, but hope to describe a few of the recent results in this active area.

Aaron Bertram (Utah)

5:00-6:00, 383-N

Vanishing and stability

Abstract: In this talk I will discuss how Bridgeland stability conditions for algebraic surfaces can be used to prove classical vanishing theorems. Although Bridgeland stability involves esoteric notions such as the derived category of coherent sheaves (or “D-branes,” as the physicists like to call them), this talk is designed for a broad audience. It is my intention to show how, once again, a crazy idea coming from string theory sheds new light on old problems in mainstream algebraic geometry. This is joint work with Daniele Arcara.

There will be a dinner afterward.

The Berkeley-Stanford Algebraic Geometry Colloquium covers the full range of topics in algebraic geometry, and is intended for a broader audience than a typical research seminar. Graduate students and researchers in nearby fields are particularly welcome. Each meeting features two speakers chosen for their contributions to the field and their expository ability. There will be a dinner afterwards.

To organize transportation from Berkeley to Stanford, please contact David Eisenbud, Dagan Karp, Martin Olsson, or Mauricio Velasco.