Algebra
Seminar

Equivariant analogs of the arithmetic of del Pezzo surfaces

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Abstract: Given an algebraic variety X over a non-closed field, one might ask if X is rational, is unirational, has a rational point, has a Zariski-dense set of rational points, or has a 0-cycle of degree 1. All of these properties have "equivariant" generalizations to the case where the variety has an action of algebraic group G. The corresponding properties are interesting even when the base field is algebraically closed. Moreover, one can exploit this connection to establish geometric facts using arithmetic methods and vice versa.

I will outline this correspondence with an emphasis on del Pezzo surfaces. In particular, I will completely characterize the equivariant analogs of the above properties for del Pezzo surfaces of degree greater than or equal to 3 over the complex numbers. I will also discuss some partial results for degrees 1 and 2 that, despite being about complex surfaces, have arithmetic ramifications

Tuesday, April 4, 2017, 5:00 pm

Mathematics and Science Center: W306

Mathematics and Computer Science
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