

Special Colloquium

Low degree points on curves

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Abstract: The central problem of arithmetic geometry is to understand the rational solutions to systems of polynomial equations. A first case is when the algebraic variety cut out by the equations has dimension one, i.e., it is a curve. The behavior of the set of rational solutions varies with the topological type of the curve. It is potentially infinite when the genus is small, but is always finite once the genus is at least two by Faltings' theorem.

In this talk we will consider an invariant of a curve measuring how large of an extension of the base field one must allow in order to have infinitely many solutions. This provides an arithmetic analogue of the gonality of the curve and we will explore these two measures of irrationality using geometric techniques.

Monday, December 3 at 3:00 PM in 636 SEO