FATEME SAJADI, University of Toronto
A Unified Finiteness Theorem For Curves

This talk presents a unified framework for finiteness results concerning arithmetic points on algebraic curves, exploring the analogy between number fields and function fields. The number field setting, joint work with F. Janbazi, generalizes and extends classical results of Birch–Merriman, Siegel, and Faltings. We prove that the set of Galois-conjugate points on a smooth projective curve with good reduction outside a fixed finite set of places is finite, when considered up to the action of the automorphism group of a proper integral model. Motivated by this, we consider the function field analogue, involving a smooth and proper family of curves over an affine curve defined over a finite field. In this setting, we show that for a fixed degree, there are only finitely many étale relative divisors over the base, up to the action of the family's automorphism group (and including the Frobenius in the isotrivial case). Together, these results illustrate both the parallels and distinctions between the two arithmetic settings, contributing to a broader unifying perspective on finiteness.