Algebra
Seminar

Average congruence class biases in the cyclicity and Koblitz conjectures

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Abstract: Given an elliptic curve over the rationals, it is natural to ask about the distribution of primes p for which the reduction of E modulo p has certain properties. Two well-known problems of this type are the cyclicity and Koblitz problems, which ask about the primes of cyclic and prime-order reduction, respectively. In this talk, we will discuss a recent joint work with Sung Min Lee and Tian Wang in which we consider variants of these problems for primes in arithmetic progression. In particular, we will highlight a somewhat counterintuitive phenomenon: on average, primes of cyclic reduction are oppositely biased to primes of prime-order reduction over congruence classes.

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