

Speaker: François Charles

Title: Frobenius distribution and exceptional isogenies for pairs of elliptic curves over number fields

Abstract: We will discuss a proof of the following result: let E and E' be two elliptic curves over a number field. Then there exist infinitely many primes p such that the reductions (mod p) of E and E' are geometrically isogenous. This result can be seen as a partial analog of a density criterion for Hodge loci due to M. Green. It is related to the distribution of the traces of the Frobenius morphism and relies on the dynamics of Hecke correspondences on the modular curve.