

abstract

JOINT IAS/PU NUMBER THEORY SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

In joint work with Barry Mazur, we investigate the 2-Selmer rank in families of quadratic twists of elliptic curves over arbitrary number fields. We give sufficient conditions for an elliptic curve to have twists of arbitrary 2-Selmer rank, and we give lower bounds for the number of twists (with bounded conductor) that have a given 2-Selmer rank. As a consequence, under appropriate hypotheses there are many twists with Mordell-Weil rank zero, and (assuming the Shafarevich-Tate conjecture) many others with Mordell-Weil rank one. The talk will conclude with some speculation about the density of twists with a given Selmer rank.