DANIEL KOHEN, Universidad de Buenos Aires

Heegner point constructions

Given a rational elliptic curve E and an imaginary quadratic field K that satisfies the so called Heegner hypothesis, we can construct points on E defined over abelian extensions of K called Heegner points. These points, that can be explicitly computed, are crucial in order to understand the arithmetic of the elliptic curve.

Whenever the sign of the functional equation of E/K is -1 we expect to find analogues of Heegner points, even if the Heegner hypothesis is not satisfied, according to a conjecture of Darmon. The main goal of this talk is to show how to obtain these points in both a computational and theoretical way in all cases where we expect a construction to take place in an unramified quaternion algebra.