

Computational verification of the Birch and Swinnerton-Dyer conjecture for specific elliptic curves

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Friday, February 11, 2005
L01 Carson Hall, 4:00 pm
(Tea 3:10 pm Math Lounge)

Abstract

This talk is about a long-term project to verify the full Birch and Swinnerton-Dyer conjecture for every elliptic curve in Cremona's book, except the 18 optimal curves of rank 2. The methods involve computation, and whatever else one can use. I'll begin with a discussion of the Birch and Swinnerton-Dyer conjecture for elliptic curves, and methods for computing the order of Shafarevich–Tate groups, along with frustrating difficulties that have yet to be overcome.