
In 1986, Mazur, Tate, and Teitelbaum gave a p-adic analogue of the conjecture of Birch and Swinnerton-Dyer for elliptic curves over the rationals. We discuss a generalization of this conjecture to the case of modular abelian varieties and primes p of good ordinary reduction.

We will briefly outline algorithms to compute the appropriate p-adic L-series and p-adic regulators and discuss numerical evidence for the conjecture in the case of modular abelian surfaces. (Received September 20, 2012)