

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

The l -parity conjecture over the constant quadratic extension

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Monday, Mar 17 at 4:15 pm
111 Cummington Street, MCS B21
Tea and cookies in MCS 144 at 4:00 pm

Abstract: For a prime l and an abelian variety A over a global field K , the l -parity conjecture predicts that, in accordance with the ideas of Birch and Swinnerton-Dyer, the \mathbf{Z}_l -corank of the l^∞ -Selmer group and the analytic rank agree modulo 2. Assuming that $\text{char}K > 0$, we prove that the l -parity conjecture holds for the base change of A to the constant quadratic extension if l is odd, coprime to $\text{char}K$, and does not divide the degree of every polarization of A . Certain elliptic curve cases of this result were known; the techniques that permit arbitrary dimension include the étale cohomological interpretation of Selmer groups, the Grothendieck–Ogg–Shafarevich formula, and the study of the behavior of local root numbers in unramified extensions.