Séminaire de théorie des nombres

Le 10 mai 2021 à 14h (Jussieu)

The p-part of BSD for rational elliptic curves at Eisenstein primes

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Résumé : Let E be an elliptic curve over the rationals and p an odd prime such that E admits a rational p-isogeny satisfying some assumptions. In a joint work with F. Castella, J. Lee and C. Skinner, we study the anticyclotomic Iwasawa theory for E/K for some suitable quadratic imaginary field K. I will give a general introduction to Iwasawa theory and talk about how our results, combined with complex and p-adic Gross-Zagier formulae, allow us to prove a p-converse to the theorem of Gross–Zagier and Kolyvagin and some cases of the p-part of the Birch–Swinnerton-Dyer formula for elliptic curves as above. In particular, for p=3, we obtain improvements on the best known results towards Goldfeld's conjecture on quadratic twists for elliptic curves with a rational 3-isogeny.