

Department of Mathematics, BGU

Algebraic Geometry and Number Theory

On Wednesday, December 6, 2017

At 15:10 – 16:30

In Math 101-

Daniel Disegni (Université Paris-Sud (

will talk about

On the p -adic Bloch-Kato conjecture for Hilbert modular forms

Abstract: The Birch and Swinnerton-Dyer conjecture predicts that the group of rational points on an elliptic curve E over \mathbb{Q} has rank equal to the order of vanishing of the L -function of E . A generalization of this conjecture to all geometric Galois representations V was formulated by Bloch and Kato. I will explain a proof of a version of the Bloch-Kato conjecture in p -adic coefficients, when V is attached to a p -ordinary Hilbert modular form of any weight and the order of vanishing is ≥ 1 . The case of elliptic curves corresponds to classical modular forms of weight two, and was treated by Perrin-Riou in 1987 using the modular points on $E(\mathbb{Q})$ constructed by Heegner. The proof in the general case relies on the universal p -adic deformation of Heegner points and a formula for its height.