

Kazim Buyukboduk

Title: p-adic Gross-Zagier formula at critical slope and a conjecture of Perrin-Riou

Abstract: I will report joint work in progress with R. Pollack and S. Sasaki, where we prove a p-adic Gross-Zagier formula for critical slope p-adic L-functions. Besides the strategy for our proof, I will illustrate a number of applications. The first is the proof of a conjecture of Perrin-Riou, which predicts an explicit construction of the generator of the Mordell-Weil group in terms of p-adic L-values when the analytic rank is one. The second is towards a Birch and Swinnerton-Dyer formula when the analytic rank is one, yielding an improvement of the recent results of Jetchev-Skinner-Wan in this context (and simplifying their proof).