

# Séminaire de théorie des nombres

Le 1 février 2010 à 15h30

## Restricted Selmer groups and special values of $p$ -adic $L$ -functions

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**Résumé :** Let  $E/Q$  be an elliptic curve with complex multiplication by the ring of integers of an imaginary quadratic field  $K$ . In 1991, by studying a certain special value of the Katz two-variable  $p$ -adic  $L$ -function lying outside the range of  $p$ -adic interpolation, K. Rubin formulated a  $p$ -adic variant of the Birch and Swinnerton-Dyer conjecture when  $E(K)$  is infinite, and he proved that his conjecture is true for  $E(K)$  of rank one.

When  $E(K)$  is finite, however, the statement of Rubin's original conjecture no longer applies, and the relevant special value of the appropriate  $p$ -adic  $L$ -function is equal to zero. We shall explain what happens in this case. We shall also describe what happens in an analogous situation associated to CM modular forms of higher weight.