Séminaire de théorie des nombres

Le 9 mars 2009 à 14h

Faltings heights of CM cycles
and derivatives of L-functions

Exposé de Jan Bruinier (Universitat Darmstadt)

Résumé : We report on joint work with T. Yang. We study the Faltings height pairing of arithmetic Heegner divisors and CM cycles on Shimura varieties associated to orthogonal groups. We compute the archimedean contribution to the height pairing and derive a conjecture relating the total pairing to the central derivative of a Rankin L-function. We briefly discuss how the conjecture can be proved in certain low dimensional cases. In particular, it can be used to give a new proof of the Gross-Zagier formula.