Séminaire de théorie des nombres

Le 13 décembre à 10h

Arithmetic properties of the modular polylogarithm

Exposé de Guido Kings

Résumé : The polylogarithm is a very successful tool in the study of special values of L-functions. So far, only the polylogarithm on the multiplicative group and on elliptic curves were subject of deeper investigation. In this talk we will consider the polylogarithm on modular curves and establish some of its properties. We show in particular, that its periods are given by Goncharov's polylogarithmic functions, which are described in terms of Green functions, and show that the dilogarithm is related to the L-value at 2 of a cusp form of weight 2 (this depends on calculations by Brunault in his thesis). Moreover, we show that one gets in a natural way an Euler system for the Galois representation associated to such a cusp form. In the last part of the lecture we discuss work in progress about relations of the modular polylog to Kato's Euler system and the elliptic Zagier conjecture.