

Séminaire de théorie des nombres

Le 17 novembre 2014 à 14h (PRG)

Product decomposition for ℓ -adic Hodge groups

Exposé de Davide Lombardo
(Orsay)

Résumé : Let A be an abelian variety defined over a number field. The algebraic monodromy groups $H_\ell(A)$ are an ℓ -adic analogue of the Hodge group of $A_{\mathbb{C}}$, and they encode a great deal of information about the Galois representations associated with A .

A natural question is whether we can describe $H_\ell(A \times B)$ in terms of $H_\ell(A)$ and $H_\ell(B)$. While the answer is negative in general, I will describe sufficient conditions (involving the dimensions and endomorphism algebras of A and B) to ensure that $H_\ell(A \times B)$ is isomorphic to $H_\ell(A) \times H_\ell(B)$, and show how this can be used to prove the Mumford-Tate conjecture for *nonsimple* abelian varieties of dimension up to 5.