ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification:
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On Galois cohomology of some p-adic representations

Let F be a number field, p an odd prime, S a finite set of primes of F containing primes over p. Let G_S denote Galois group of the maximal S-ramified extension of F. In the talk I am going to show that the p-torsion part of the group $H^2(G_S, T)$, for p-adic representations

$$\rho : G_S - - - - > GL(T)$$

which come from CM elliptic curves and Jacobians of some Fermat curves, is generated by special elements of Deligne-Soule type cf. [BGK]. According to the weak Leopoldt conjecture Galois cohomology group $H^2(G_S, T)$ for T's as above should be finite. I will also discuss the subgroup of infinitely divisible elements in the group $H^2(G(\bar{F}/F, T)$, where T is twisted Tate module of the Jacobian of a proper smooth curve over F. Methods of proofs come from algebraic K-theory.

[BGK] G. Banaszak, W. Gajda and P. Krason: "On Galois cohomology of some p-adic representations and etale K-theory of curves", MPI preprint (1998), pp. 22.