Meeting: 1003, Atlanta, Georgia, SS 32A, AMS Special Session on Arithmetic Algebraic Geometry, I

1003-11-1257  Bo-Hae Im* (im@math.utah.edu), University of Utah, Department of Mathematics, 155 S 1400 E RM 233, Salt Lake City, UT 84112. Infinite multiplicity of roots of unity of the absolute Galois group on elliptic curves.

Let $K$ be a number field, $\bar{K}$ an algebraic closure of $K$ and $E/K$ an elliptic curve defined over $K$. Let $Gal(\bar{K}/K)$ be the absolute Galois group of $\bar{K}$ over $K$. We prove that there is a subset $\Sigma \subseteq Gal(\bar{K}/K)$ of Haar measure 1 such that for every $\sigma \in \Sigma$, the spectrum of $\sigma$ in the natural representation $E(\bar{K}) \otimes \mathbb{C}$ of $Gal(\bar{K}/K)$ consists of all roots of unity, each of infinite multiplicity. (Received October 04, 2004)