

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 σ in the natural representation $E(\bar{K}) \otimes \mathcal{C}$ of $Gal(\bar{K}/K)$ consists of all roots of unity, each of infinite multiplicity. (Received October 04, 2004)