1007-11-246 **Tejaswi Navilarekallu*** (tejaswi@caltech.edu), California Institute of Technology, 1200 E California Blvd MC 253-37, Pasadena, CA 91125. *Equivariant Tamagawa Number Conjecture for Elliptic Curves.* Preliminary report.

Let K/Q be a Galois extension of number fields with Galois group G. Let E be an elliptic curve over Q and let E_K be its lift to K. For a rational prime l let $T_l := \varprojlim_n E_{l^n}(\bar{Q})$ and let $V_l := T_l \otimes_{Z_l} Q_l$. Let S_l be a finite set of primes in K containing the infinite primes, primes over l and primes of bad reduction.

One can then define a perfect $Z_l[G]$ complex $R\Gamma_c(O_{K,S_l}, T_l)$. To these complexes we can associate an element

$$R\Omega(E, Z[G]) \in K_0(Z[G]; R).$$

Now, for a character χ of G let $L(E, \chi, s)$ denote the L-function of E twisted by χ. Let $L^*(E, \chi, 1)$ denote the leading coefficient in its Taylor expansion. Then, $(L^*(E, \chi, 1))_{\chi \in \hat{G}} \in \zeta(R[G])^\times$, where ζ denotes the center. The equivariant conjecture (for the order $Z[G]$) asserts that

$$\hat{\delta}((L^*(E, \chi, 1))_{\chi \in \hat{G}}) = R\Omega(E, Z[G]),$$

where $\hat{\delta} : \zeta(R[G])^\times \to K_0(Z[G]; R)$ is a natural map.

The conjecture is known in very few cases for non-maximal orders such as $Z[G]$. In this presentation we shall look at some possible ways of verifying this conjecture for the order $Z[G]$. (Received February 22, 2005)