Meeting: 998, Houston, Texas, SS 19A, Special Session on Algebraic Geometry

998-14-291 **Francisco Portillo*** (portillo@math.utexas.edu), University of Texas, TX. *Computations on a conjecture of BSD type for elliptic curves of rank 1.* Preliminary report.

Mazur and Tate stated an equation of BSD type that was satisfied for a couple of elliptic curves of rank 1 mod q, for q not dividing the conductor. Such an equation was: $\prod_{a=1}^{(q-1)/2} a^{[a/q]} = g(\langle P, n_q P\rangle)$

The right hand-side of the equation was analytic and computed by evaluating the modular elements $[a/q]$. The right hand side was arithmetic and depended on the x-coordinates of some points in the elliptic curve. Here, P is a generator of the free part of the elliptic curve, and n_q is the number of points of the curve mod q. The function "g" is kind of a bilinear pairing.

We will explain the original computations made by B. Mazur and J. Tate, and we will explore also this kind of equations with more generality. (Received March 01, 2004)