

**Yukako Kezuka**, Institut de Mathématiques de Jussieu

Title: *Non-vanishing theorems for central L-values*

Abstract: The arithmetic of elliptic curves with complex multiplication has attracted many mathematicians, especially in the context of the Birch-Swinnerton-Dyer conjecture. Amongst these curves, Gross has introduced a particularly nice elliptic curve with complex multiplication. Using Iwasawa theory at the prime 2, I will prove nonvanishing theorems for the central values of the complex L-series of a large class of quadratic twists of the Gross elliptic curve. In particular, we obtain the finiteness of the Tate-Shafarevich group for these curves. This is joint work with Yong-Xiong Li.