

1106-11-937

**Jennifer Balakrishnan\*** (balakrishnan@maths.ox.ac.uk), **Mirela Çiperiani**, **Jaclyn Lang**,  
**Bahare Mirza** and **Rachel Newton**. *Shadow lines in the arithmetic of elliptic curves.*

Given a triple  $(E, p, d)$ , where  $E$  is a rank 2 elliptic curve over  $\mathbb{Q}$ ,  $d$  is the discriminant of a quadratic imaginary number field  $K$  that satisfies the Heegner hypothesis for  $E$  with rank  $E(K) = 3$ , and  $p$  is a good ordinary prime that splits in  $K$ , the *shadow line* is a 1-dimensional subspace of  $E(K) \otimes \mathbb{Q}_p$  which originally appeared in the work of Mazur and Rubin. We describe the computation of shadow lines associated to such triples  $(E, p, d)$ . To do so, we give an explicit construction of the anticyclotomic  $p$ -adic height pairing. (Received September 08, 2014)