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)