1086-11-2016   **Alyson Deines*** (`adeines@math.washington.edu`), 1011 NE 126th St, Seattle, WA 98125.
Computing Degrees of Parametrizations of Elliptic Curves by Shimura Curves.

Let E be an elliptic curve over $\mathbb{Q}$ of conductor N. Then E has a modular parameterization, specifically there is a surjective morphism ϕ from the modular curve $X_0(N)$ to E. The degree of this map, m_E, is called the modular degree. There are many theorems and conjectures relating the modular degree m_E of an elliptic curve to the modular form f_E associated to E, of particular interest is the relation to congruence primes. Unfortunately, generalizing to number fields, we no longer always have modular curves. Takahashi and Ribet use the Jaquet-Langlands correspondence to parameterize elliptic curves over $\mathbb{Q}$ by Shimura curves. I will examine how this generalizes to modular elliptic curves and in general modular abelian varieties over number fields. (Received September 25, 2012)

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