1014-11-839   **Amod Agashe*** (`agashe@math.fsu.edu`), Department of Mathematics, Florida State University,
208 Love Building, Tallahassee, FL 32306-4510. *Rational torsion of elliptic curves.*

When the conductor of an optimal elliptic curve is prime, results of Mazur and Emerton show that the rational torsion is explained by a special cuspidal divisor (to be made precise in the talk). Calculations of Cremona and Stein show that this fails when the conductor is no longer prime; however, they indicate that the failure can be completely accounted for by congruences of the associated modular form with a form of lower level. We will explain all the objects involved, describe precisely what the calculations suggest, and state what we can prove, especially with an eye towards the Birch and Swinnerton-Dyer conjecture. (Received September 25, 2005)

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