1070-11-175   **Kristin Lauter** and **Bianca Viray*** (`bviray@math.brown.edu`). *Bounding denominators of Igusa class polynomials using arithmetic intersection theory.* Preliminary report.

The roots of Igusa class polynomials parametrize genus 2 curves whose Jacobian have CM. Giving a sharp bound for the denominators of these Igusa class polynomials is useful for cryptography. We outline how arithmetic intersection theory can translate the problem of finding a sharp bound into a problem about counting embeddings of certain rings of integers into endomorphism rings of products of super-singular elliptic curves. We give an exact formula for the number of these embeddings and will give a high-level sketch of the proof. (Received February 09, 2011)

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