1056-11-1633   **Kristin E. Lauter*** (`klauter@microsoft.com`), Microsoft Research, One Microsoft Way, Redmond, WA 98052, and **Bianca Viray**, **Jennifer Johnson-Leung**, **Adriana Salerno**, **Erika Frugoni** and **Helen Grundman**. *Numerical evidence for Bruinier-Yang conjecture and comparison with denominators of Igusa class polynomials.*

Bruinier and Yang conjectured a formula for an intersection number on the arithmetic Hilbert modular surface, $\mathrm{CM}(K).T_m$, where $\mathrm{CM}(K)$ is the zero-cycle of points corresponding to abelian surfaces with CM by a primitive quartic CM field K, and T_m is the Hirzebruch-Zagier divisors parameterizing products of elliptic curves with an m-isogeny between them. In this talk, we examine fields not covered by Yang's proof of the conjecture. We give numerical evidence to support the conjecture and point to some interesting anamolies. We compare the conjecture to both the denominators of Igusa class polynomials and the number of solutions to the embedding problem stated by Goren and Lauter. (Received September 22, 2009)