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Tonghai Yang* (thyang@math.wisc.edu), Department of Mathematics, University of Wisconsin,
480 Lincoln Dr., Madison, WI 53706. *A basic intersection problem on Hilbert modular surface.*

In this talk, I will explain how a conjectured intersection formula of Brunier and mine will imply a conjecture of Colmez on the Faltings' height of CM abelian surfaces, which is a generalization of the celebrated Chowla-Selberg formula. I will also explain how the conjecture of Colmez implies a conjecture of Lauter on the denominator of Igusa invariants valued at CM abelian surfaces. (Received February 28, 2006)