Algebra and Number Theory Seminar

CM lifting

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Abstract: The classification of isogeny classes of simple abelian varieties over finite fields by Honda and Tate rests on the remarkable fact that, up to a finite ground field extension and isogeny, such abelian varieties admit lifts to CM abelian varieties in characteristic 0. Building on this, Tate proved that every abelian variety over a finite field is "of CM type". But this leaves open the question of whether characteristic-0 CM lifting can be done without introducing an isogeny or ground field extension. There are several precise versions of such a refined CM lifting question, and after reviewing some basics in CM theory I will formulate such problems and discuss positive and negative answers (and examples). This is joint work with C-L. Chai and F. Oort.

Wednesday, March 28, 2012, 4:00 pm
Mathematics and Science Center: W303

Mathematics and Computer Science
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