



Algebra and Number Theory Seminar

Title: On the number of rational points on some abelian varieties over finite fields

Speaker: Safia Haloui (Institut de Math. de Luminy, Marseille)

Date: Mon 29th November 2010 at 4:00PM

Location: Mathematical Sciences Seminar Room

Abstract: Let A be an abelian variety of dimension g defined over $\mathbb{GF}(q)$. By Weil conjectures, we have $(q+1-2q^{1/2})^g \leq A(\mathbb{GF}(q)) \leq (q+1+2q^{1/2})^g$. It is actually possible (as for curves) that Deschamps and Perret gave better bounds when A is a Jacobian variety. We are interested in abelian varieties of dimension $g=3$. We determine exactly the maximum and minimum number of rational points on Jacobians over $\mathbb{GF}(q)$.