Number Theory/Arithmetic Geometry Seminar

Date: May 26 (Thu), 2005, 16:00–17:00

Room: RIMS, Room 206

Speaker: Christopher Rasmussen (Rice University, USA)

Title: On the torsion of Jacobian varieties of $X(p^n)$

Abstract   In this talk, we study the fixed field of the kernel of a particular representation of the absolute Galois group, into the outer automorphisms of the (pro-p) fundamental group of the projective line minus three points. Although well studied, many properties of this representation are still unknown, such as the size of the field in question.

We will present new work, following the techniques of Anderson and Ihara, demonstrating fields of p-power torsion of the Jacobian varieties of modular curves of level p^N are rational over this field, in the case $p = 3$. The result rests on both the arithmetic and geometry of $X(p^N)$, when viewed as a cover of the projective line minus three points. This work is joint with Matt Papanikolas.