



## Algebra and Number Theory Seminar

**Title:** Swan-Like Results Over Finite Fields

**Speaker:** David Thomson (Carleton University, Canada)

**Date:** Mon 28th February 2011 at 4:00PM

**Location:** Mathematical Sciences Seminar Room

**Abstract:** Swan-like results give the parity of the number of irreducible factors of polynomials over finite fields. These give simple necessary conditions on irreducibility when proving irreducibility is hard. Swan's result (Pac. J. Math - 1962) gives the parity of the number of irreducible factors of trinomials over  $GF(2)$ . In this talk, I give an overview of Swan-like results appearing over the last decade, and give necessary conditions on the irreducibility of binomials and trinomials over finite fields of odd characteristic. Special emphasis will be placed on the bottleneck of current methods which provide some interesting open problems in the area.

(This talk is based on joint work with Brandon Hanson (University of Toronto) and Daniel Panario (Carleton University).)