K-Theory, Quadratic Forms and Number Theory Seminar

Title: On stable quadratic polynomials

Speaker: Dr. Omran Ahmadi (UCD)

Date: Thu 1st March 2012 at 4:00PM

Location: Mathematical Sciences Seminar Room (Ag 1.01)

Abstract: A polynomial f(X) in K[X] over a field K is called stable if all its iterates are irreducible over K. We show that almost all monic quadratic polynomials f(X) in Z[X] are stable over Q. We also show that the presence of squares in so-called critical orbits of a quadratic polynomial f(X) in Z[X] can be detected by a finite algorithm; this property is closely related to the stability of f(X). We also prove there are no stable quadratic polynomials over finite fields of characteristic 2 but they exist over some infinite fields of characteristic 2.