



Seminar

## K-Theory, Quadratic Forms and Number Theory

**Title:** Diophantine approximation of  $\pi$

**Speaker:** Dr. Pat McCarthy (NUI Maynooth)

**Date:** Wed 13th April 2011 at 3:00PM

**Location:** Mathematical Sciences Seminar Room

**Abstract:** Diophantine Approximation (in one dimension) is concerned with how well we can approximate a real number  $\alpha$  with a rational number. Specifically, suppose that  $\phi(x) > 0$  and  $\phi(x)/x$  tends to 0 as  $x$  decreases to 0. Can we find infinitely many fractions  $p/q$  such that

$$|\alpha - p/q| \leq \phi(1/q)?$$

We present some results which hold for arbitrary irrational  $\alpha$  and arbitrary algebraic  $\alpha$ . Finally we discuss the current state of knowledge regarding the case where  $\alpha = \pi$ .