K–Theory, Quadratic Forms and Number Theory

Seminar

Title: Fourier Transforms on Finite Fields and an Application of Stickelberger's Theorem

Speaker: Professor Gary McGuire (UCD, Claude Shannon Institute)

Date: Wed 25th April 2007 at 5:00PM

Location: Mathematical Sciences Seminar Room

Abstract: We will introduce the topic of Fourier transforms on finite fields. We explain an approach to determining the Fourier spectrum using Gauss sums and p–adic valued characters on the multiplicative group of a finite field, and Stickelberger's theorem. We apply the techniques to certain functions on fields of characteristic 2. We shall conclude with some open problems, in both odd and even characteristic.