



Algebra and Number Theory Seminar

Title: Some new insight into the algebraic representation of Best's $(10, 40, 4)$ code

Speaker: Dr Habil Marcus Greferath (UCD)

Date: Mon 29th March 2010 at 4:00PM

Location: Mathematical Sciences Seminar Room

Abstract: Best's $(10, 40, 40)$ code is a binary code with an optimal number of code-words. By its cardinality it is apparent that it cannot be represented as a linear code over any local ring alphabet over a local ring. Nonetheless, it was represented as a non-linear $(5, 40, 4)$ code over \mathbb{Z}_4 by Conway and Sloane: the charm of this representation in terms of this pentacode stems from the fact that it gives rise to more insight into the structure of the code in question. This talk revisits the pentacode and derives a so far unknown algebraic representation for it.