Algebra and Number Theory Seminar

Eimear Byrne (Sch. Math. Sci., UCD)

will speak on

On the Parameters of Codes With Two Homogeneous Weights

Mon 13th September 2010 at 4:00PM

Location: Mathematical Sciences Seminar Room

In 1972 Delsarte showed that for any projective linear code over a finite field of characteristic p with two non-zero Hamming weights a ¡ b there exists a positive integer u and such that a = q u and b = q(u+1), where q is a power of p. In fact this emerges as a corollary to his proof that projective two-weight codes have Cayley graphs that are strongly regular. In this talk we show that for any regular projective linear code C over a finite Frobenius ring with two integral non-zero homogeneous weights a ¡ b, there is a positive integer d, a divisor of —C—, and a positive integer u such that a = d u and b = d(u+1). We also give a new proof of the known result that two-weight codes over finite Frobenius rings yield strongly regular graphs. These results can be used to give useful restrictions on the parameters of any of the associated strongly regular graphs.

This talk is part of the **Algebra and Number Theory** series. For more, see
`https://maths.ucd.ie/seminars`