Algebra and Number Theory Seminar

Title: Results of Delsarte-Goethals on Sets of Matrices with Good Rank Properties

Speaker: Gary McGuire (UCD)

Date: Mon 31st March 2008 at 4:00PM

Location: Mathematical Sciences Seminar Room

Abstract: In a 1975 paper, Delsarte and Goethals proved an upper bound on the size of a set of skew-symmetric matrices over a finite field having a good rank property. Here, by a good rank property we mean that the difference of any two matrices has rank at least 2d. We will present their proof of this bound, which uses association schemes, and discuss sets of matrices that meet the bound. Such sets of matrices have applications in network coding and spacetime coding.