



**UCD School of  
Mathematics and Statistics**

University College Dublin  
Belfield, Dublin 4, Ireland

Tel +353 1 716 2580  
Fax +353 1 716 1196

**Scoil na  
Matamaitice agus na Staitisticí UCD**

An Coláiste Ollscoile, Baile Átha Cliath  
Belfield, Baile Átha Cliath 4, Éire

Email seminars@maths.ucd.ie  
Web [maths.ucd.ie/seminars](https://maths.ucd.ie/seminars)

## Algebra and Number Theory Seminar

---

**Gary McGuire (UCD)**

will speak on

### **Results of Delsarte-Goethals on Sets of Matrices with Good Rank Properties**

Mon 31st March 2008 at 4:00PM

Location: Mathematical Sciences Seminar Room

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.

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