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## Algebra and Number Theory Seminar

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**Prof Steve Kirkland (Hamilton Institute, NUIM)**

will speak on

**Totally Nonnegative  $(0,1)$  Matrices**

Mon 12th October 2009 at 4:00PM

Location: Mathematical Sciences Seminar Room

Motivated by a result of McKay et al, we investigate the class of square  $(0,1)$  matrices which have all of their eigenvalues equal to nonnegative real numbers. We pay particular attention to the  $(0,1)$  totally nonnegative matrices – i.e. those  $(0,1)$  matrices with the property that every square submatrix has nonnegative determinant. Over the class of irreducible  $(0,1)$  totally nonnegative matrices of order  $n$ , we determine those matrices having minimum spectral radius, and discuss the maximum number of zeros for such matrices. Joint work with Richard Brualdi.

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