



## Algebra and Number Theory Seminar

**Title:** Algebraic structures determined by Moufang quadrangles

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**Date:** Mon 28th March 2011 at 4:00PM

**Location:** Mathematical Sciences Seminar Room

**Abstract:** Moufang polygons are buildings of rank 2 that satisfy the so-called Moufang property. These geometrical structures form an alternative description of the exceptional linear algebraic groups of relative rank 2. In 2002 an entire classification of Moufang quadrangles was obtained by J. Tits and R. Weiss.

In the classification it is shown that Moufang polygons are always entirely determined by certain algebraic structures. Some examples of these are alternative division rings, cubic Jordan algebras and pseudo-quadratic spaces. The structure determining the Moufang quadrangles of type  $E_6$ ,  $E_7$  and  $E_8$ , however, is still poorly understood. We managed to associate

In this talk I will give an introduction to the theory of Moufang quadrangles; I will focus on how these geometrically defined objects are entirely determined by algebraic structures.