K-Theory, Quadratic Forms and Number Theory Seminar

Title: The 3 Pfister number of quadratic forms

Speaker: M. Raczek (Université Catholique de Louvain)

Date: Wed 27th October 2010 at 3:00PM

Location: Mathematical Sciences Seminar Room

Abstract: Let F be a field of characteristic different from 2 containing a square root of -1. The 3-Pfister number of a quadratic form q in the third power of the fundamental ideal of F, is the least number of terms needed to write q as a sum of 3-fold Pfister forms. We use a combinatorial analogue of the Witt ring of F to prove that, if F is a 2-henselian valued field with at most two square classes in the residue field, then the 3-Pfister number of a d-dimensional quadratic form is less than or equal to $(d^2)/2$.