K-Theory, Quadratic Forms and Number Theory Seminar

Title: Vertex operator algebras on Riemann surfaces

Speaker: Dr. Michael Tuite (NUI Galway)

Date: Wed 4th May 2011 at 3:00PM

Location: Mathematical Sciences Seminar Room

Abstract: A Vertex Operator Algebra (VOA) is essentially a rigourous formulation of chiral conformal field theory in theoretical physics. This talk describes recent progress in defining and computing the partition function and correlation functions for a VOA on a general Riemann surface formed by sewing together lower genus surfaces. We discuss recent results for the Heisenberg VOA (or bosonic string) for which the partition function can be computed by an application of the MacMahon Master Theorem from classical combinatorics. We also discuss modular properties of the partition function which are similar to those of Siegel modular forms.