K-Theory, Quadratic Forms and Number Theory Seminar

Title: Torsion subcomplex reduction and conjugacy classes graphs

Speaker: Dr. Alexander Rahm (NUI Galway)

Date: Thu 23rd February 2012 at 4:00PM

Location: Mathematical Sciences Seminar Room (Ag 1.01)

Abstract: An innovation in the study of arithmetic groups comes with the recently introduced technique of torsion subcomplex reduction. Given a cell complex acted on by an arithmetic group, the torsion subcomplexes are extracted from the quotient space by collecting the cells with elements of a given prime order in their stabiliser. The torsion subcomplexes determine a great deal of the homological torsion of a group. The conjugacy classes graph is constructed purely group-theoretically, without involving any cell complex. We can show that for all the Bianchi groups with units +/- 1, and all prime numbers, the reduced torsion subcomplex is isomorphic to the conjugacy classes graph. The latter can be computed very efficiently.