

Title: Finite reflection groups and applications

Lecturer: Dr Misha Feigin

Abstract: We start by considering finite groups generated by orthogonal reflections around hyperplanes in a Euclidean space. On the plane these groups are the symmetry groups of regular polygons, and they are symmetry groups of Platonic solids in three-dimensional space. A key example in higher dimensions is the symmetric group. The groups have various nice properties, in particular, the ring of invariant polynomials is a polynomial ring. After initial discussion of these groups we'll look at three directions where they arise. These are integrable systems of particles of Calogero-Moser type, differential geometry associated with Frobenius manifolds, and Huygens Principle in the theory of partial differential equations.

On the Lecturer: Dr Feigin is a Senior Lecturer at the School of Mathematics and Statistics of the University of Glasgow. His area of research is the theory of integrable systems in relations with algebra, geometry and mathematical physics. More precisely he works on quantum integrable systems of Calogero-Moser type and their relativistic analogues known as Ruijsenaars-Macdonald operators, Baker-Akhiezer functions and Darboux transformations in many dimensions, Hadamard's problem in the theory of Huygens' Principle, Coxeter and other hyperplane arrangements, rings of quasi-invariants, representations of Cherednik algebras, Frobenius manifolds, WDVV equations, theory of random matrices. Dr Feigin is the Mathematics Erasmus Coordinator for the University of Glasgow.

Course dates	Time	Room
14/04/2015	09:00-11:00	MT10-30B
15/04/2015	09:00-11:00	MT11-30B
16/04/2015	11:00-13:00	MT11-30B
16/04/2015	16:00-18:00	common room -30B third floor