Welcome to International Group Theory Web Seminar

Moon Duchin

"*The geometry of spheres in free abelian groups*"

March 25, 12:00pm (New York Time).

Abstract:
Consider the rank d free abelian group with a finite generating set. The word metric changes by quasi-isometry with a change of generators, so the group has a well-defined large-scale geometry, which is that of a flat d-dimensional space. However, some interesting geometry is not quasi-isometry invariant. Here, we study asymptotic spheres in (Z^d,S) by considering the "limit shape" L=lim (1/n)S_n in R^d. We show that the counting measure on spheres tends to a "limit measure" on a convex polyhedron, and we use this to study a class of averaging problems in groups. In particular, we define the "sprawl" to be a certain numerical measure of curvature, and we study how it varies over different generating sets for free abelian groups. This is joint work with Samuel Lelièvre and Christopher Mooney.

Next presentation:

April 1. Volodymyr Nekrashevich *TBA*

Algebraic Cryptography Center