Dissertation Defense

Quasi Isometric Properties of Graph Braid Groups

Praphat Fernandes
Emory University

Abstract: In my thesis I initiate the study of the quasi-isometric properties of the 2 dimensional graph braid groups. I do this by studying the behaviour of flats in the geometric model spaces of the graph braid groups, which happen to be CAT(0) cube complexes. I define a quasi-isometric invariant of these graph braid groups called the intersection complex. In certain cases it is possible to calculate the dimension of this intersection complex from the underlying graph of the graph braid group. And I use the dimension of the intersection complex to prove that the family of graph braid groups $B_2(K_n)$ are quasi-isometrically distinct for all n. I also show that the dimension of the intersection complex for a graph braid group takes on every possible non-negative integer value.

Friday, March 30, 2012, 4:00 pm
Mathematics and Science Center: W201

Advisor: Aaron Abrams

Mathematics and Computer Science
Emory University