



Speaker: Christophe Hohlweg
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Wednesday, May 6, 2015
1:00 PM
125 Hayes-Healy Hall

Title: Artin-Tits Braid groups, low elements and weak order in Coxeter groups

Abstract:

In this talk we will explain that the question of solving the conjugacy problem in the context of a general Artin-Tits Braid group reveals strong connections between the weak order of a Coxeter system (W, S) , inversion sets of elements of W and small roots. Small roots are the main ingredient introduced by Brink and Howlett in order to build a ‘canonical automaton’ that recognizes the language of reduced words of elements of W over S . From small roots and inversion sets, we define a new finite class of elements in W called ‘low elements’. These low elements are the key to prove that the smallest subset of W containing S , closed under join (for the right weak order) and suffix is finite, and by ricochet that finitely generated Artin-Tits groups have a finite Garside family. Low elements seem rich in further applications in the study of infinite Coxeter groups, which will discuss if time allows.