Queen's Algebraic Geometry
— Seminar —

Braid groups and Kleinian singularities

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Abstract

We review the relation between the geometry of Kleinian singularities and Dynkin diagrams of types ADE, recalling in particular the construction of a braid group action of type A, D, or E on the derived category of coherent sheaves on the minimal resolution of a Kleinian singularity. By work of Seidel-Thomas, this action was known to be faithful in type A. We extend this faithfulness result to types ADE and then promote this to a faithful action of an extended affine braid group of the appropriate type. Our faithfulness results provide the missing ingredient for completing Bridgeland's description of spaces of stability conditions for certain triangulated categories associated to Kleinian singularities.

This is joint work with Hugh Thomas from the University of New Brunswick.

Monday, November 2, 2009
3:00pm – 4:00pm
319 Jeffery Hall