Séminaire de géométrie algébrique de Rennes [1]

Exposé du jeudi 3 avril 2013

MODULI SPACES OF SHEAVES ON STACKS AND GEOMETRIC REPRESENTATION THEORY

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Résumé : Hilbert schemes of points in the complex affine plane provide a natural framework for realizing geometric representations of Lie algebras. For example, their equivariant cohomology is related to Heisenberg algebras and their equivariant K-theory to elliptic Hall algebras (by the works of Nakajima, Vasserot, Schiffmann and others). In the present talk I describe an orbifold compactification of the minimal resolution X_k of the A_{k-1} toric singularities $\mathbb{C}^2/\mathbb{Z}_k$ inspired by the study of gauge theories on X_k. Moreover, I introduce and characterize moduli spaces of (framed) sheaves over this orbifold. As an application, I show some relations between the equivariant cohomology of these moduli spaces, in the rank one case, and the representation theory of the Kac-Moody algebra of type $\hat{A}_{k-1}$. These relations can be interpreted as generalizations to the ALE case of part of the results stated before for the Hilbert schemes of points.

1. Les jeudis matin, de 10 h 30 à 11 h 30, salle 004, IRMAR (bâtiment 22), Université de Rennes 1, Campus de Beaulieu