

1081-17-213

Sachin Gautam* (sachin@math.columbia.edu), Department of Mathematics, Rm 413, MC 4417, Columbia University, 2990 Broadway, New York, NY 10027, and **Valerio Toledano**

Laredo. *Geometric representation theory of Nakajima quiver varieties.*

For a Dynkin graph $\Gamma = (I, E)$ of A, D, E type and a dimension vectors $\mathbf{w} \in \mathbb{N}^I$, let $\mathcal{M}(\mathbf{w})$ be the Nakajima quiver variety. The equivariant K -theory of $\mathcal{M}(\mathbf{w})$ admits an action of an infinite-dimensional quantum group, namely *the quantum loop algebra* $U_q(L\mathfrak{g})$ of simple Lie algebra \mathfrak{g} associated with Γ . Similarly the equivariant cohomology of $\mathcal{M}(\mathbf{w})$ admits an action of *the Yangian* $Y_h(\mathfrak{g})$ of \mathfrak{g} . These symmetries of the quiver varieties were constructed by Nakajima and Varagnolo respectively.

Motivated by the geometric representation theory of Nakajima quiver varieties, we have constructed several *homomorphisms of geometric type* $U_q(L\mathfrak{g}) \rightarrow Y_h(\mathfrak{g})$. In this talk, I will discuss the compatibility between the homomorphisms of geometric type and (certain variants of) the equivariant Chern character relating equivariant K -theory and cohomology of Nakajima quiver varieties. This talk is based on a joint work with V. Toledano Laredo. (Received February 12, 2012)