

Title: A geometric R-matrix for the Hilbert scheme of points on a general surface

Abstract: Maulik and Okounkov demonstrated how quantum group structures govern the quantum cohomology of Nakajima quiver varieties. A key construction in their work is the geometric R-matrix, a solution to the quantum Yang-Baxter equation acting on the equivariant cohomology of a quiver variety.

I will show how to extend aspects of this algebraic structure beyond the setting of quiver varieties. In particular, I will explain how to use the Virasoro algebra to construct an R-matrix acting on the tensor square of the cohomology of the Hilbert scheme of points on a general surface.