

Title: Affine Springer fibers, Procesi bundles and Cherednik algebras

Abstract: Using the Springer action Oblomkov-Yun construct a Cherednik algebra action on the cohomology of homogeneous Springer fibers and this is identified in the case of elliptic homogeneous elements.

In joint work with Ivan Losev, we construct an additional Cherednik algebra action on the cohomology of split homogeneous Springer fibers. We then identify this with the global sections of a suitable bundle constructed using the Procesi bundles.

I will also mention some connections with the center of the small quantum group using joint work with Bezrukavnikov, Shan and Vasserot and some categorification joint work with Bezrukavnikov, McBreen and Yun.