YURI BEREST
Cornell University

Cherednik Algebras and Differential Operators on Quasi-invariants (50-60)

In this talk I will discuss a class of commutative algebras which are natural extensions of the algebras of polynomial invariants of finite reflection groups. Though the definition of these algebras (originally due to O. Chalykh and A. Veselov) is very simple, their properties seem to be hard to establish using the standard gadget of commutative algebra. Instead, some of the deeper properties (for example, Cohen-Macaulayness) can be deduced from the structure of the ring of differential operators on the corresponding (singular) variety which, in turn, can be studied by means of representation theory of (a certain rational degeneration of) the double affine Hecke algebra of I. Cherednik. (The talk is based on joint work with P. Etingof and V. Ginzburg)