Symplectic reflection algebras in Geometry and Representation theory

Victor Ginzburg
Department of Mathematics
University of Chicago
5734 S. University Avenue
Chicago, IL 60637-1546
U.S.A.

Abstract

Symplectic reflection algebras is a new wide class of associative algebras that should play an important role both in geometry and in representation theory. A symplectic reflection algebra H is associated to any finite dimensional complex symplectic vector space V and a finite subgroup G of linear symplectic automorphisms of V. Roughly speaking, the algebra H is related to the orbifold V/G (resp., its symplectic resolutions) in the same way as (a primitive quotient of) the enveloping algebra of a semisimple Lie algebra $\mathfrak{g}$ is related to the nilpotent variety in $\mathfrak{g}$ (resp., its Springer resolution). In the talk, I am going to survey main aspect of this theory.