

Symplectic reflection algebras in Geometry and Representation theory

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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.