Chiral differential operators on the basic affine space

Tomoyuki Arakawa

RIMS, Kyoto University

Abstract:

We investigate chiral differential operators on the basic affine space G/U, where G is a simple, simply connected algebraic group of type ADE, and U is a maximal unipotent subgroup of G.

Our results demonstrate that the associated variety is isomorphic to the affine closure of G/U, a symplectic singularity and corresponds to the Higgs-Coulomb branch of certain physical theories, particularly in type A.

As a consequence, the vertex algebra of global chiral differential operators on G/U is quasi-lisse.

This is a work in progress with Xuanzhong Dai and Bailin Song.