
THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
Algebraic Geometry and Representation Theory Seminar

Room 108 ,Elaine and Bram Goldsmith Building
on Monday, Nov 23, 2015at 14:30

Arkady Berenstein University of Oregon, Eugene

Hecke-Hopf algebras

Abstract:

It is well-known that Hecke algebras $H_q(W)$ do not have interesting Hopf algebra structures because, first, the only available one would emerge only via an extremely complicated isomorphism with the group algebra of W and, second, this would make $H_q(W)$ into yet another cocommutative Hopf algebra.

The goal of my talk (based on joint work with D. Kazhdan) is to extend each Hecke algebra $H_q(W)$ to a non-cocommutative Hopf algebra (we call it Hecke-Hopf algebra of W) that contains $H_q(W)$ as a coideal.

Our Hecke-Hopf algebras have a number of applications: they generalize Bernstein presentation of Hecke algebras, provide new solutions of quantum Yang-Baxter equation and a large category of endo-functors of $H_q(W)$ -Mod, and suggest further generalizations of Hecke algebras.