



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, 2015
at 14:30

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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 $H_q(W)\text{-Mod}$, and suggest further generalizations of Hecke algebras.