THE WEIZMANN INSTITUTE OF SCIENCE  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE  
Algebraic Geometry and Representation Theory Seminar  
Room 108, Math & CS Building II 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 $H_q(W)$-Mod, and suggest further generalizations of Hecke algebras.