



# Frontiers of Mathematics Lecture

## Simple character formula arising from based Schur duality, and beyond

### Abstract

Schur duality is a duality between general linear Lie algebras and symmetric groups. It admits a  $q$ -deformation due to Jimbo between quantum groups and Hecke algebras. We will explain how Lusztig's canonical basis in this  $q$ -setting gives a simple character formula in the BGG category of Lie (super) algebras of type A. Then we will explain our work with Shun-Jen Cheng on a generalization which provides a canonical basis simple character formula in the BGG-type category for finite  $W$ -algebras.



**Professor Weiqiang Wang**  
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### Biography

Weiqiang Wang received his PhD in Mathematics from Massachusetts Institute of Technology in 1995. He has been a faculty member at University of Virginia since 2001 and currently holds the Gordon Whyburn Professorship in Mathematics.

Weiqiang Wang's research area is Representation Theory. In the past decade, he and collaborators have been developing the iProgram, aiming at generalizing all fundamental (algebraic, geometric, and categorical) constructions from Drinfeld-Jimbo Quantum Groups to iQuantum Groups arising from quantum symmetric pairs. He is a fellow of American Mathematical Society (AMS), Class of 2018. He (jointly with Huanchen Bao) received Chevalley Prize in Lie Theory from AMS in 2020. He was an Invited Speaker at International Congress of Mathematicians in 2022.

Date :  
March 06, 2026 (Friday)

Time :  
2:00 – 3:00 pm

Venue :  
P4, Chong Yuet Ming Physics Building,  
HKU