



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PURE MATHEMATICS

Presentations of Quantum Affine Algebras and Extended Quantum Affine Algebras

by

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Abstract

Quantum affine algebras are quantum enveloping algebras of affine Lie algebras, introduced independently by Drinfeld and Jimbo in their study of the Yang-Baxter equation. Representation theory of quantum affine algebras depends mostly on the Drinfeld realization, which was announced in 1987. Ding and Frenkel proved the presentation using the Faddeev school's R-matrix method in type A in 1993. We will discuss our recent joint work with A. Molev and M. Liu on the Drinfeld realization for other classical types. Our proof extended the R-matrix method with the help of quasideterminants, and we constructed a sequence of larger quantum algebras associated with the spectral parameter dependent R-matrix. In the end, I will also briefly discuss another presentation of quantum extended affine algebras (jointly with F. Chen, F. Kong and S. Tan).

Date : 21 June 2022 (Tuesday)

Time : 11:00am – 12:00nn

Zoom Meeting : <https://hkust.zoom.us/j/8835519266> (Passcode: 123456)

All are Welcome!