Lie Groups and Representation Theory Seminar at the University of Tokyo

DATE   October 15 (Thu), 2009, 16:30–18:00

PLACE   Room 122, Graduate School of Mathematical Sciences

SPEAKER   **Shunsuke Tsuchioka (**   **)** (RIMS, Kyoto University)

TITLE   Hecke–Clifford superalgebras and crystals of type $D_l^{(2)}$

ABSTRACT   It is known that we can sometimes describe the representation theory of "Hecke algebra" by "Lie theory". Famous examples that involve the Lie theory of type $A_n^{(1)}$ are Lascoux–Leclerc–Thibon's interpretation of Kleshchev's modular branching rule for the symmetric groups and Ariki's theorem generalizing Lascoux–Leclerc–Thibon's conjecture for the Iwahori–Hecke algebras of type A.

Brundan and Kleshchev showed that some parts of the representation theory of the affine Hecke–Clifford superalgebras and its finite-dimensional "cyclotomic" quotients are controlled by the Lie theory of type $A_{2l}^{(2)}$ when the quantum parameter q is a primitive $(2l + 1)$-th root of unity. In this talk, we show that similar theorems hold when q is a primitive $4l$-th root of unity by replacing the Lie theory of type $A_{2l}^{(2)}$ with that of type $D_l^{(2)}$.