Lie Group and Representation Theory Seminar

Date:	February 24 (Thu), 11:00–12:00
Place:	RIMS Room 005
Speaker:	和地 輝仁 Wachi Akihito
Affiliation:	Hokkaido Institute of Technology
Title:	Capelli identities for symmetric pairs of non-Hermitian type

Abstract:

Consider a see-saw pair of real reductive Lie groups in the real symplectic group $Sp_{2N}(R)$,

$$\begin{array}{ccc} G_0 & & M_0 \\ & X & \\ K_0 & & H_0, \end{array}$$

where both (G_0, H_0) and (K_0, M_0) form dual pairs, and both (G_0, K_0) and (M_0, H_0) are symmetric pairs.

Let ω be the Weil (oscillator) representation of $Sp_{2N}(R)$. Then we have the equality,

$$\omega(U(g)^K) = \omega(U(m)^H),$$

where g is the complexified Lie algebra of G_0, K is the complexification of K, and $U(g)^K$ is the set of K-invariants of $U(g)$.

When (G_0, K_0) is a symmetric pair of Hermitian type, we have already given the Capelli identities, which expresses particular elements of $U(g)^K$ by $U(m)^H$ in the image of ω.

In this talk, we give the Capelli identities, which conversely expresses particular elements of $U(m)^H$ by $U(g)^K$ for the see-saw pair called Case C:

$$\begin{array}{ccc} U(p,q) & & U(r,s)xU(r,s) \\ & X & \\ U_pxU_q & & U(r,s). \end{array}$$

This is a joint work with Kyo Nishiyama.

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