Math Physics Seminar - Kyungtak Hong, Purdue University, SCHM 316

Wednesday, Feb 12th 1:30 - 2:30pm

Title: Orthosymplectic R-matrices

Abstract: In this talk, we present formulas for the finite and affine orthosymplectic R-matrices associated with any parity sequence, evaluated on the first fundamental representation. The finite R-matrices factorize as ordered products of q-exponents, parametrized by positive roots in the reduced root system. Using combinatorial methods in shuffle superalgebras, we compute the evaluation of each q-exponent, thereby deriving the formulas for the finite R-matrices. We then guess the formulas for the affine R-matrices by applying the Yang-Baxterization process to the finite R-matrices, which produces solutions to the Yang-Baxter equation. Finally, we verify their intertwining properties, confirming that the obtained solutions are indeed affine R-matrices. This is joint work with Sasha Tsymbaliuk (Purdue).