

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

May 31 **Wiktor Ejsmont**, University of Wrocław

Title: *Positive definite reflection length in type B*

I will present a joint work with Marek Bożejko, Maciej Dołęga and Światosław R. Gal. I introduce a two-parameter function q_+, q_- on the infinite hyperoctahedral group, which is a bivariate refinement of the reflection length keeping track of the long and the short reflections separately. I provide a complete characterization of the parameters q_+, q_- when the signed reflection function q_+, q_- is positive definite. I apply our characterization to construct a cyclic Fock space of type B which generalizes the one-parameter construction in type A found previously by Bożejko and Guta. I also present a new cyclic Gaussian operator of type B and we relate its moments with the Askey–Wilson–Kerov distribution by using the notion of cycles on pair-partitions.