

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

October 11 **Jacob Mashburn**, Texas A&M University

Title: *Fock Spaces with Nearest-Neighbor Coupling*

I will discuss operators represented on Fock spaces whose behavior on one level depends only on two of its neighbors. We extend a number of results from prior works to our more general framework. These include the quadratic relation satisfied by the free cumulant generating function (or rather a variant of it), the resolvent form of the generating function for the Wick polynomials and classification results for the case when the vacuum state on the operator algebra is tracial. We also handle the generating functions in infinitely many variables by considering their matrix-valued versions. This is joint work with Michael Anshelevich and is based on our preprint arXiv:2103.13936.