

# Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

May 17    **Pei-Lun Tseng**, Queen's University

Title: *On operator-valued infinitesimal Boolean and monotone independence*

In this talk, we are going to review some basic concepts of (operator-valued) infinitesimal free probability. Then we will introduce the notion of operator-valued infinitesimal (OVI) independence for the Boolean and monotone case. We show that OVI Boolean (resp. monotone) independence is equivalent to the operator-valued Boolean (resp. monotone) independence over an algebra of  $2 \times 2$  upper triangular matrices. Based on this result, it provides a way to switch problems from an OVI probability to an operator-valued probability space. By applying this method, we will discuss some OVI Boolean and monotone properties and derive the OVI Boolean and monotone additive convolutions. Joint work with D. Perales.