

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

November 4 **Irene Sabadini**, Politecnico di Milano

Title: *Quaternionic linear operators, S-spectrum and Grothendieck-Lidskii formula*

We discuss the notion of S-spectrum for quaternionic linear operators and we show the peculiarities of notion of spectrum and eigenvalues in this noncommutative framework. We then introduce an appropriate notion of trace in the setting of quaternionic linear operators, arising from the well-known companion matrices. We use it to define the quaternionic Fredholm determinant of trace-class operators in Hilbert spaces, and show an analog of the classical Grothendieck-Lidskii formula. We discuss the particularities of the problem, which include, among others, the definition of an appropriate trace that differs from the usual one. This is a joint work with P. Cerejeiras, F. Colombo, A. Debernardi Pinos, U. Kaehler