

Probabilistic Operator Algebra Seminar

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February 14 **Philippe Biane**, Institut Gaspard Monge, CNRS U. Paris-Est

Title: *Quantum exclusion process. Schroeder trees and free cumulants*

The Quantum Symmetric Simple Exclusion Process (QSSEP) is a model of quantum fermionic particles hopping on a finite interval. In this talk I will present this model and explain how the asymptotics of the fluctuations of the invariant measure of the process, when the number of sites grows, can be expressed in terms of polynomials for which a combinatorial formula, based on Schroeder trees, can be given. Quite surprisingly, these polynomials turn out to be the free cumulants of a very simple family of commuting random variables.