Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

April 5   **Leonard Cadilhac**, Universite Paris-Saclay

Title: *A metric characterization of freeness*

In 1958, Kesten showed that the norm of the Markov operator associated to a symmetric random walk on a group is minimal if and only if it is supported by free elements. More generally, for unitaries that are not necessarily constructed from group elements, we can consider a formula analogous to the one of the Markov operator and naturally try to extend this characterization. I will present a joint work with B. Collins where we show that if said unitaries are contained in a finite tracial von Neumann Algebra, Kesten's result remains true. Our proof relies essentially on free group combinatorics. I will also explain our motivations which come on one hand from the von Neumann conjecture and on the other from strongly asymptotically free sequences.