Probabilistic Operator Algebra Seminar

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May 23 **Uwe Franz**, Universite de Bourgogne Franche-Comte

Title: *De Finetti Theorems for the unitary dual group.*

We start by recalling the dual group structure of the Brown algebra i.e. the universal C^*-algebra generated by the coefficients of a unitary matrix, and its action on sequences of noncommutative random variable. Then we investigate noncommutative distributions that are invariant under this action. We prove a finite de Finetti Theorem characterizing R-diagonal elements with identical distribution. This is surprising since it applies to finite sequences in contrast to the de Finetti Theorems for classical and quantum groups; and also, because it does not involve any known notion of independence. Considering infinite sequences in W^*-probability spaces, we show that our characterization boils down to operator-valued free centered circular elements, as in the case of the unitary quantum group U_n^+. Based on joint work with Isabelle Baraquin, Guillaume Cebron, Laura Maassen, and Moritz Weber. See also https://arxiv.org/abs/2203.05852