Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

November 25   **Benoit Collins**, Kyoto University

Title: *Operator-Valued Martin Boundaries and Their Connections to Quantum Information Theory*

In this talk, I will present joint work with Thierry Giordano and Ryosuke Sato (arXiv:2402.09713). We explore an operator-valued extension of Biane-Izumi's Quantum Martin boundary theory, which turns out to encapsulate the concept of entanglement. By integrating this framework with an appropriately structured quantum random walk, we can reestablish the Quantum de Finetti theorems and propose enhancements. I will discuss these results and describe the underlying proof techniques.