

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

September 9 **Adrian Ioana**, UCSD

Title: *Asymptotic freeness in tracial ultraproducts*

I will present a recent asymptotic freeness result in tracial ultraproducts of von Neumann algebras. This result in particular implies that if $M = M_1 * M_2$ is a tracial free product of von Neumann algebras, then the relative commutants of Haar unitaries $u_1 \in M_1$ and $u_2 \in M_2$ are freely independent in the ultraproduct $M^{\mathcal{U}}$. The proof of this result relies on an application of Mei-Ricard's L^p -boundedness theorem for certain Fourier multipliers in tracial free product von Neumann algebras. I will also discuss applications of this result to absorption phenomena and the model theory of II_1 factors. This talk is based on joint work with Cyril Houdayer.