

Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

August 16 **Patrick Hiatt**, UCSD

Title: *On the Singular Abelian Rank of Ultraproduct II_1 Factors*

I will present some recent joint work with Sorin Popa where we show that, under the continuum hypothesis, any ultraproduct II_1 factor contains more than continuum many mutually disjoint singular MASAs. In other words, the singular abelian rank of any ultraproduct II_1 factor M , $r(M)$, is larger than \mathfrak{c} . Moreover, if the strong continuum hypothesis $2^{\mathfrak{c}} = \aleph_2$ is assumed, then $r(M) = 2^{\mathfrak{c}}$. More generally, these results hold true for any II_1 factor M with unitary group of cardinality \mathfrak{c} that satisfies the bicommutant condition $(A'_0 \cap M)' \cap M = M$, for all $A_0 \subset M$ separable abelian.