

Department of Mathematics

University of Houston

# Analysis Seminar

FRIDAY, April 28, 2017

13:00-14:00 – Room 646 PGH

**Speaker:** Michael Brannan (Texas A&M University)

**Title:** The structure of orthogonal free quantum group factors

**Abstract:** In this talk I will survey some recent results on the structural theory of a class of  $II_1$ -factors arising from a family of discrete quantum groups, called the orthogonal free quantum groups  $FO_n$ . A question that has been around for some time is whether or not an orthogonal free quantum group factor  $L(FO_n)$  can be isomorphic to a free group factor  $L(F_k)$ . We answer this question in the negative by proving that  $L(FO_n)$  is a strongly 1-bounded von Neumann algebra in the sense of Kenley Jung. We obtain this result by proving a certain spectral regularity result for the edge reversing operator on the quantum Cayley tree of  $FO_n$  and connect this result to a recent free entropy dimension result of Jung and Shlyakhtenko. This is joint work with Roland Vergnioux.