

GRADUATE SEMINAR

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C^* -Quantum Convolution Systems

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March 30, 2017

12:30–1:30 PM

Math Lounge (CW 307.20)

Abstract: A C^* -quantum convolutive system consists of a family of C^* -quantum probability spaces $(\mathcal{A}_{s,t}, \varphi_{s,t})$, given for all $s, t \in \mathbb{R}$, $s < t$, and morphisms $\Delta_{r,s,t} : (\mathcal{A}_{r,t}, \varphi_{r,t}) \rightarrow (\mathcal{A}_{r,s}, \varphi_{r,s}) \otimes (\mathcal{A}_{s,t}, \varphi_{s,t})$ given for all $r, s, t \in \mathbb{R}$, $r < s < t$, satisfying the co-associativity condition:

$$(\text{id}_{\mathcal{A}_{r,s}} \otimes \Delta_{s,t,u}) \Delta_{r,s,u} = (\Delta_{r,s,t} \otimes \text{id}_{\mathcal{A}_{t,u}}) \Delta_{r,t,u}$$

whenever $r, s, t, u \in \mathbb{R}$, $r < s < t < u$.

In this presentation, we discuss the main motivation behind this new mathematical concept, and study its existence.