Fun with Logic and Operator Algebras

Abstract:
Yes, the title makes sense: there are (a lot of) connections between logic and operator algebras! And in this talk we are going to cover some. The first goal will be to introduce a generalization of classical first order logic, a “continuous logic” which can be used to describe continuous structures like metric spaces, operator algebras, etc. We will see how this can help us to study some questions concerning such structures. In particular, we will cover two natural questions that arise in the context of operator algebras which turn out to be independent of ZFC - our everyday axiom system all of set theory is based on!

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