



QUANTUM COMPUTING SEMINAR

The Sheaf-Theoretic Structure Of Non-Locality and Contextuality

By

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Abstract: Sheaf theory is a branch of mathematics where the fundamental notion is one of restriction. This basic tool allows for a systematic study of measurement scenarios satisfying the no-signaling principle. In this session we introduce the event sheaf and the pre-sheaf of empirical models. Intuitively, the fact that the latter is only a pre-sheaf (as opposed to sheaf) amounts to the fact that nonclassical (e.g., quantum) statistics are those that do not come from a joint distribution over all measurement outcomes. This couches the notion of contextuality in a setting that is independent of quantum theory.

Date: Friday, November 18, 2022

Time: 14:30

Place: SA141 - Mathematics Seminar Room