



QUANTUM COMPUTING SEMINAR

The Sheaf-Theoretic Structure of Definite Causality

By

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Abstract: In its full generality MBQC is adaptive: the outcomes of a prior measurement determine the measurement bases of a subsequent measurement. One possible way to incorporate this adaptivity is by introducing the notion of a causal order. This can be done by introducing the notion of partially ordered sets (posets) as a bookkeeping device which takes this causal ordering into account. Here the notion of causal sheaves is introduced, which in one sense generalizes the sheaf-theoretic approach to include causal order, but at the same time considers a more restricted set of measurement scenarios dealing only with space-like separated parties.

References: [arXiv:1701.01888](https://arxiv.org/abs/1701.01888)

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