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Causality for nonlocal phenomena

Friday, 16 September 2016 16:35 (25 minutes)

The talk will be based on a joint work with M. Eckstein (arXiv:1510.06386), in which we propose and study an extension of the causal precedence relation onto the space of Borel probability measures on a given spacetime. The developed formalism draws from the mathematical theory of optimal transport and rigorously codifies the intuition of a subluminal probability flow. This will be illustrated with several conditions, which are all equivalent provided the spacetime has a sufficiently robust causal structure. An application in the study of causality in quantum theory will be discussed.

Summary

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