The Time Machine Factory [unspeakable, speakable] on Time Travel -TM2019



Contribution ID: 32

Type: talk

The role of causality in quantum gravity

Wednesday, 9 October 2019 09:00 (45 minutes)

The notion of causality, both local or global, is tied inextricably to the Lorentzian character of spacetime. This is embodied by the causal structure poset which, given weak causality constriants, determines the conformal

spacetime geometry. This is the starting point for the causal set approach to quantum gravity, where the underlying continuum is replaced by a locally finite partially ordered set. In this talk I will discuss the role played by

causality both kinematically and dynamically in quantum gravity, with a focus on the causal set approach.

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Session Classification: The Mathematical side of Causality