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Title: « Lorentzian noncommutative geometry: introducing distance and time »

Abstract:

A generalization of Connes' noncommutative geometry is required in order to deal with Lorentzian signature space-times. We will discuss the difficulties arising from such generalization and present some approaches to deal with. In particular, we will show how the Riemannian distance formula can be adapted to Lorentzian manifolds as well as how to introduce a notion of global time through the construction of Lorentzian spectral triples.