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HIGH ENERGY PHYSICS COLLOQUIA

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RELATIVE LOCALITY IN THEORIES WITH PLANCK-SCALE DEFORMED RELATIVISTIC SYMMETRIES AND GENERALIZATION TO CURVED/EXPANDING SPACETIMES

Abstract

I will present an overview of the approach to quantum gravity phenomenology based on Planck scale deformations of relativistic symmetries, showing how in this kind of theories the notion of locality becomes relative to the distance between the observer and the measured event. I will describe some attempts to generalize this scenarios to curved spacetimes and in particular their application to a FLRW expanding universe, stressing its relevance for the opportunity of finding traces of Planck-scale effects in the observation of ultra-high energy particles emitted by transient astrophysical sources. I will finally present an update on recent results connected with the detection of astrophysical neutrinos by the IceCube observatory.

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