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CPT Violation: from matter-antimatter asymmetry in the Early Universe to entangled quantum states

Wednesday, 11 July 2018 09:00 (30 minutes)

In this talk, I will first motivate theoretically some models entailing CPT Violation (CPTV), which might be responsible for the observed matter-antimatter asymmetry in the Cosmos, and may owe its origin to either Lorentz-violating background geometries in the early Universe, or to an ill-defined CPT generator in some quantum gravity models entailing decoherence of quantum matter. For the latter category of CPTV, I argue that entangled states of neutral mesons (Kaons or B-systems) can provide smoking-gun sensitive tests of such phenomena, and describe the relevant phenomenology.

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