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Testing curvature-induced in-vacuo dispersion with gamma-ray-bursts

Tuesday, July 6, 2021 9:30 AM (30 minutes)

We explore the phenomenological viability of scenarios, suggested by different approaches to quantum space-time, where quantum-gravity effects in the propagation of particles are triggered by spacetime curvature/expansion. We rely on a toy model of curvature-induced Lorentz violation for a preliminary exploration, and we find that, differently from what commonly believed, the double suppression due to Planck-length and spacetime curvature is compensated by the high energies and the long (cosmological) distances traveled of the gamma-ray-burst photons.

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