



Contribution ID: 9

Type: **not specified**

Lorentz Violation of Cosmic Photons from a Phenomenological Viewpoint

Tuesday, 24 August 2021 15:10 (20 minutes)

Cosmic photons from astrophysical sources are ideal for investigating the Lorentz symmetry violation (LV). A series of studies on high energy gamma-ray burst (GRB) photons suggest a light speed variation with linear energy dependence at the Lorentz violation scale of $3.6 * 10^{17}$ GeV, with subluminal propagation of high energy photons in cosmological space. Constraints on Lorentz violation from recent observation of PeV scale photons from LHAASO collaboration are also discussed.

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Session Classification: Dark Matter and Astroparticle Physics

Track Classification: Dark Matter and Astroparticle Physics