



Contribution ID: 141

Type: **Oral**

LIV constraints derived from INTEGRAL observations of polarized GRB

Thursday, 1 September 2022 12:30 (30 minutes)

In complement to spectro-imaging and timing observations, polarimetry provides a unique in-sight into the geometry and magnetic configuration of compact gamma-ray sources, such as neutron stars or black holes. Thanks to the Integral coded mask imaging technics which efficiently suppresses most of the background contribution, we have measured linearly polarized emission from the brightest cosmic high energy sources, such as Gamma-Ray Bursts (GRB). These observations have enabled us to put strong constraints on the physical process at work in these sources. Models of Lorentz Invariance Violation (LIV) predict a energy-dependant rotation of the polarization angle along the photon path from the GRB site to Earth. Integral observation of polarized GRB have enable us to put strong constraints on these models. After a short review of Integral as a Compton polarimeter, I will describe these Integral results and their implication.

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Session Classification: Polarization and fundamental physics