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Constraints on LIV effects from EBL absorption using broadband blazar modeling - Online

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Lorentz Invariance Violation (LIV) effects are predicted in some theories of Quantum Gravity (QG) and would manifest as energy-dependent modifications to particle kinematics. Such effects can alter the threshold of the electron–positron pair production process, leading to observable deviations in the absorption of very-high-energy photons by the Extragalactic Background Light (EBL). We exploit this effect to search for LIV signatures in the TeV spectral features of blazars. We have developed a spectral analysis framework based on broadband modeling of the source emission using a classical synchrotron self-Compton (SSC) scenario, combined with an LIV-modified EBL absorption model. In this talk, we introduce and discuss the spectral method for LIV searches and present preliminary results obtained from broadband multiwavelength observations of BL Lac during its flaring activity in 2022.

Orateur: ROSALES DE LEON, Alberto (Observatoire de Paris)

Classification de Session: State-of-the-art LIV studies with photons