Contribution ID: **5** Type: **not specified**

Lorentz Invariance Violation with high-energy neutrinos and gamma-ray bursts

Monday, 25 May 2026 16:00 (15 minutes)

We are performing a search using ANTARES data, exploiting expected time delays between neutrinos and a gamma-ray burst onset, in the presence of Lorentz Invariance Violation (LIV). There are publications from theorists performing a similar search with IceCube public HESE data; they found a hint with a LIV scale of 1/20th of the Planck mass. We used the same data in our full statistical framework and got the same best-fit point.

It would be good to confirm this with internal IceCube data and, eventually, to discuss how we could perform a combined analysis with multiple telescopes, eventually beyond the case of gamma-ray bursts.

Primary author: LAMOUREUX, Mathieu (APC)

Presenter: LAMOUREUX, Mathieu (APC)

Session Classification: Topical Sessions

Track Classification: Higher Level Data Analysis