



Contribution ID: 484

Type: Poster

Tests of Lorentz Invariance at a bi-magic baseline of Protvino-to-ORCA (P2O) experiment.

Lorentz invariance is one of the fundamental propositions of quantum field theory (QFT). In some string theory models, Lorentz symmetry may break spontaneously at very high energy scales (Planck scale). In the Standard Model Extension (SME) of particle physics, one can study the effects of Lorentz Invariance Violation (LIV) in a perturbative method.

The present and future long-baseline neutrino experiments provides an ideal scope to measure such sub-dominant effects in neutrino oscillations stemming from Planck-suppressed LIV effects. Due to the megatonne volume of ORCA and a long baseline of 2600 km, the Protvino-to-Orca (P2O) is envisaged to provide unparalleled sensitivity to the LIV model parameters even with a modest beam power and runtime. In this contribution, we present the expected physics potential of the P2O experiment in constraining the LIV parameters.

First author

Nafis Rezwan Khan Chowdhury

Email

nafissuri@gmail.com

Collaboration / Activity

NA

Primary author: KHAN CHOWDHURY, Nafis Rezwan

Presenter: KHAN CHOWDHURY, Nafis Rezwan

Session Classification: T04: Neutrino Physics

Track Classification: Neutrino Physics