

Exploring better configuration between T2HK/T2HKK to probe CP sensitivity in presence of LIV

Friday, 21 June 2024 17:30 (2 hours)

Studying the conservation/violation of CP symmetry in the leptonic sector is very essential in understanding the evolution of the universe. Lorentz and CPT invariance are fundamental symmetries of nature. Breaching of Lorentz invariance can also lead to CPT violations. We can examine the signature of Lorentz invariance and CP violations within the standard three-flavor neutrino oscillation framework. The scope of this research is how CPT-violating Lorentz invariance violation (LIV) parameters $a_{e\mu}$, $a_{e\tau}$, $a_{\mu\tau}$ impact the sensitivity to CP violation. Specifically, our focus is directed towards evaluating sensitivity within two proposed setups for the forthcoming T2HK experiment: (i) individual detectors placed at 295 km and 1100 km [T2HKK], and (ii) a detector with double capacity positioned at 295 km [T2HK]. We explore the role of different beam channels and the synergy between them in the context of CP sensitivity.

Poster prize

Yes

Given name

Supriya

Surname

Pan

First affiliation

Physical Research Laboratory

Second affiliation

Institutional email

sritic03@gmail.com

Gender

Male

Collaboration (if any)

Primary authors: CHAKRABORTY, Kaustav (Physical Research Laboratory, Ahmedabad); GOSWAMI, Srubabati (Physical Research Laboratory); PAN, Supriya

Presenter: PAN, Supriya

Session Classification: Poster session and reception 2

Track Classification: Beyond Standard Model searches in the neutrino sector