



Contribution ID: 14

Type: **not specified**

CP violation in T2HK and DUNE with non-standard interaction

Tuesday 30 May 2023 14:00 (15 minutes)

CP violation in the quark sector has been established, which is described by the CKM phenomenon, and we are entering the precision era as far as Flavor physics is concerned. Accumulation of more data from the LHCb and Belle II experiments will, hopefully, guide us to the pathway to physics beyond the standard model. But the tiny CP asymmetry observed in the quark sector cannot explain the observed baryon asymmetry of the Universe. In this context, it is widely believed that leptonic CP violation could be the salvage. Interestingly, the measured non-zero value of θ_{13} has opened the door to optimism. Needless to mention, the determination of CP violating phase δ_{CP} is the prime target of most of the current and upcoming neutrino experiments. Unfortunately, non-standard interaction can be a spoiler for the clean determination of the CP phase. We explore, the effect of non-standard interaction and study NSI effect in the future experiments DUNE and T2HK, taking inputs from the currently running long baseline experiments, i.e., T2K and NOvA. Considering non-standard interaction effects from $e - \mu$ and $e - \tau$ sectors, we find interesting and perceptible results concerning the probabilities, the octant of the θ_{23} , and the CP sensitivity. Therefore, better understanding of the NSI effects will be crucial for the immaculate determination of δ_{CP} .

Author: BRAHMA, Barnali (IIT Hyderabad)

Co-author: GIRI, Anjan (IIT Hyderabad)

Presenter: GIRI, Anjan (IIT Hyderabad)

Session Classification: Parallel Talks