



Contribution ID: 1480

Type: Oral Presentation

Theoretical motivations for the precision measurement of the oscillation parameters ($15' + 5'$)

Thursday, 4 August 2016 13:10 (20 minutes)

Current neutrino oscillation data strongly suggests specific flavour structures in the lepton sector which can be explained by underlying flavour symmetries. Discrete flavour symmetries have emerged as a powerful tool to realise the observed mixing patterns in which the values of the parameters are uniquely predicted or specific correlations between parameters are obtained. In many models the values of CP violating phase take special values, for instance conserving or maximally-violating values. The precision measurement of mixing angles and the CP violating phase delta will be crucial tasks in the next-generation neutrino oscillation experiments, such as DUNE and T2HK. They will allow to test the flavour models both by constraining the individual parameters and in probing the correlations among them. We consider the current status, comparing the current neutrino oscillation data with typical mixing patterns. We then present the expected sensitivities in the DUNE and T2HK, and JUNO/RENO-50 experiments and how they will provide the opportunity to distinguish different flavour models. We will discuss the guidance for model building that this will provide.

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