Contribution ID: **173** Type: **Poster accelerator**

Studying the impact of neutrino cross-section mismodelling on the T2K oscillation analysis

The T2K collaboration has reported world-leading results on neutrino oscillation parameters θ_{23}, Δm^2_{32}, and δ_{CP} from measurements of muon (anti)neutrino disappearance and electron (anti)neutrino appearance in accelerator-produced muon (anti)neutrino beam. The oscillation analysis relies on neutrino flux and cross-section models that are tuned by near detector data before being fit to the far detector data. The final systematic uncertainty on the oscillation parameters is evaluated within these models. A cross-section mismodelling might introduce biases to the measurement. A procedure using simulated data sets created from different cross-section models is used to evaluate this effect at T2K, using the full oscillation analysis framework to fit the simulated data. The resulting constraints on the oscillation parameters can be compared to the expected sensitivity to ensure the T2K results are robust with respect to deficiencies in the cross-section model.

Authorship annotation

on behalf of the T2K collaboration

Session and Location

Wednesday Session, Poster Wall #48 (Auditorium Gallery Right)

Poster included in proceedings:

yes

Primary author: Mr BIENSTOCK, Simon (LPNHE)

Presenter: Mr BIENSTOCK, Simon (LPNHE)

Track Classification: Poster (participating in poster prize competition)