Contribution ID: **268** Type: **oral presentation**

Future Sensitivity of the T2K Long-Baseline Neutrino Experiment

Friday, 16 August 2013 14:30 (20 minutes)

Following the measurement of $\sin^2 2\theta_{13}$ by T2K and reactor experiments, the T2K long-baseline neutrino experiment at the proposed full statistics may now have other enhanced sensitivities. A combined fit of the T2K dataset of $\nu_\mu \rightarrow \nu_e$ appearance, $\nu_\mu \rightarrow \nu_\mu$ disappearance, ν-mode beam, and $\bar{\nu}$-mode beam data can provide very interesting constraints on the four relevant oscillation parameters ($\sin^2 2\theta_{13}$, δ_{CP}, $\sin^2 \theta_{23}$, and Δm^2_{32}). Combined fits to MC simulations of these four datasets at the T2K full statistics are therefore performed, where the current T2K systematic errors are accounted for using a systematic error covariance matrix. The ultimate T2K sensitivities, as determined assuming different possible true values for the oscillation parameters, as well as different T2K ν-mode and $\bar{\nu}$-mode running times, will be shown.

APS member ID

61026008

Primary author: Dr FRIEND, Megan (KEK)

Presenter: Dr FRIEND, Megan (KEK)

Session Classification: Neutrino Physics

Track Classification: Neutrino Physics