

Current and future measurements of electron neutrinos and electron antineutrinos in the T2K off-axis near detector

In the Tokai-to-Kamioka (T2K) oscillation analysis, electron (anti)neutrino candidates are both the signal channel and the largest background. As the neutrino oscillation community looks to the future with experiments such as Hyper-Kamiokande, the oscillation analyses become limited by systematic error. A detailed understanding of neutrino-nucleus interactions is therefore imperative to maximise future sensitivity. In 2014, the T2K experiment published a charged-current electron neutrino cross-section measurement using the off-axis near detector, ND280. This result is being updated with improved selections, increased statistics, the inclusion of antineutrinos and a more model-independent method of cross-section extraction. The poster focuses on the new charged-current electron neutrino and electron antineutrino samples, as well as the control regions that are used to constrain the backgrounds.

Session and Location

Wednesday Session, Poster Wall #77 (Auditorium Gallery Right)

Poster included in proceedings:

yes

Primary author: Dr KING, Sophie (Queen Mary University of London)

Co-author: Dr CHRISTODOULOU, Georgios (University of Liverpool)

Presenter: Dr KING, Sophie (Queen Mary University of London)

Track Classification: Poster (participating in poster prize competition)