



ID de Contribution: 29

Type: Non spécifié

## A study of applications of neutron capture signal for the T2K experiment

T2K is a long-baseline neutrino oscillation experiment in Japan, with an accelerator and a near detector facility at J-PARC and the Super-Kamiokande far detector. The T2K experiment has measured neutrino oscillation parameters and is working towards the observation of CP violation in the leptonic sector. Furthermore, since high efficiency neutron tagging is now available with the Gd-loaded Super-Kamiokande detector, the application of neutron information to T2K data to improve oscillation sensitivity is important. The neutrino energy resolution can be degraded due to the contamination of charged current non-quasi-elastic (CC non-QE) processes in the CCQE-like sample. In this presentation, we show a study to remove background in the 1-ring muon-like ( $1R\mu$ ) samples used in the T2K oscillation analysis, using tagged neutron information at T2K.

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**Classification de Session:** Poster session