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Measurement of the electron neutrino component of the T2K beam in the ND280 Tracker

The main physics goal of the T2K experiment is the measurement of PMNS mixing angle θ_{13} through the observation of ν_e appearance in the ν_μ neutrino beam. The main background to this measurement is the intrinsic ν_e beam component that has to be measured before the oscillation at the T2K Near Detector (ND280). We select neutrino interactions in the Fine Grained Detector (FGD) and distinguish electrons from muons by combining the tracking and PID capabilities of 3 Time Projection Chambers (TPC) and an Electromagnetic Calorimeter (ECAL). Thanks to the combination of these detectors, we are able to reject more than 99% of the muons produced by the dominant ν_μ interactions. We will show details of the detector performances and selection analysis. Finally a comparison of the selected data with the MC expectation will be presented. The result of this analysis provides confidence in the understanding of the intrinsic ν_e beam component of the T2K beam simulation and of the most recent T2K ν_e appearance results.

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