Abstract Submitted
for the APR16 Meeting of
The American Physical Society

Measurment of the Charged Current Inclusive Anti-Neutrino to Neutrino Cross Section Ratio Using the π^0 Detector at T2K THOMAS CAMPBELL, EREZ REINHERZ-ARONIS, WALTER TOKI, Colorado State Univ, T2K COLLABORATION — Recent anti-neutrino data taken by the T2K experiment is used to measure the ratio of the cross sections for charged current interactions of muon type neutrinos relative to anti-neutrinos, $\frac{\sigma(\overline{\nu}_\mu + nucleons \to \mu^+ + X)}{\sigma(\nu_\mu + nucleons \to \mu^- + X)}$. Theoretical estimates for charged current quasi-elastic neutrino-quark scattering predict this ratio should be approximately $\frac{1}{3}$. This measurement used the π^0 detector (P∅D) and a time projection chamber (TPC1) directly downstream at the off axis near detector (ND280) complex of the T2K experiment. Neutrino interactions occurring in the P∅D with an exiting muon whose momentum is measured by TPC1 were selected. Preliminary results and studies of the event selection and relevant systematic uncertainties are presented.

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Date submitted: 08 Jan 2016 Electronic form version 1.4