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Towards Measuring the NuMu Charged Current Quasielastic Cross Section on Water using T2K's Near Detector

A measurement of the numu charged current quasielastic cross section on water would provide additional constraints for T2K's oscillation analysis and serve to guide future neutrino-nuclear interaction models. We present a selection of numu charged current events using the Pi-Zero Detector (P0D) and the Tracker of T2K's near detector. An analysis that includes Data/MC comparisons and several systematic uncertainties has been completed. In addition, by separating the data sets into time periods when the P0D is filled with water and when it is empty, we propose a subtraction method that can provide an isolated sample of numu interactions on water only. In this way, we plan to provide a measurement of the numu CCQE cross section on water.

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