

Abstract Submitted  
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**Introduction to the  $\pi^0$  Detector (P0D) of the Tokai to Kamioka (T2K) Experiment Near Detector and the Alignment of the P0D** ALEX CLIFTON, Colorado State University — An introduction to the off-axis P0D of the T2K experiment is presented as well as a physical and computational alignment method for the P0D. ND280 is located 280 m downstream from the T2K graphite target and is off axis by  $2.5^\circ$  with respect to the neutrino beam line. ND280 is a composite detector consisting of a Side Muon Range Detector (SMRD), Electric Calorimeters (ECALs), the P0D, and the Tracker which consists of several Time Projection Chambers (TPCs) and Fine Grain Detectors (FGDs). A repeatable survey method was implemented utilizing a laser leveler, plumb-bob, plumb-line, and detachable hooks in order to check the alignment of the P0D. In addition to this method, cosmic ray data and software tools are used as a means to check the alignment results produced by the survey method. Alignment results are important for particle track matching between the Tracker and the P0D for a  $\nu_\mu$  Charged Current Inclusive analysis.

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