

The new TPCs based on Resistive MicroMegas for the Upgraded Near Detector of the T2K Experiment

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In order to accurately establish leptonic CP-violation the T2K collaboration planned to upgrade both the neutrino beam line, by doubling its intensity and the ND280 Near Detector, for collecting neutrino interactions within full phase-space acceptance. The innovative concept of this neutrino detection system consists in combining a fine-grained fully active target (Super-Fine-Grained Detector) with 2 large volume Time Projection Chambers, rectangular in shape (High Angle TPC, HATPC) and 6 TOF planes. The detectors were assembled and commissioned at CERN and J-PARC and recently installed and integrated with legacy ND280 detectors at JPARC.

In this talk I will report about the building, assembling and characterization of the two TPCs at CERN and about their Installation and Commissioning of at JPARC with cosmic rays and neutrino interactions during a Technical Run in December 2023. The characterization of the TPC within Magnetic field in terms of energy resolution and particle identification performances and in terms of space resolution and momentum measurement will be illustrated. Early results with neutrino beam for Physics, to be delivered at JPARC in February 2024 will be also reported

Collaboration

T2K collaboration

Role of Submitter

I am the presenter

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