

Abstract Submitted  
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**Construction of the Field Cage for the DUNE Prototype Detector**

SHASHANK KUMBHARE, Univ of Texas, Arlington — The Deep Underground Neutrino Experiment (DUNE) is an international project at Fermilab for precision neutrino property studies. The 40kt Liquid Argon (LAr) Time Project Chamber (TPC) technology used for the DUNE detector and high intensity proton beams will enable physicists to potentially transform our understanding of neutrinos. The TPC detectors of DUNE use field cage (FC) to generate a strong uniform electric field for the ionization electron drift to the anode. The FC for the protoDUNE detector, a large-scale prototype for DUNE, is a 6m x 6m x 6m active volume cubical structure. The walls of FC consist of extruded aluminum profiles held with fiber reinforced plastic (FRP) I-beams. The FC is divided into 8 modules with 2 modules on each side wall, and each module is further divided into 3 sub-modules making a total of 24 sub-modules. The assembly of a sub-module includes attaching 6-inch I-beams with 3-inch I-beams and mounting the Al-profiles and then connecting different submodules together to make a full sub-module. I will present the quality control procedure, preparation for FRP parts and the assembly procedure for these sub-modules, including some mechanical tests and possible improvements of the structure.

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