

Abstract Submitted
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DUNE Field Cage Construction Infrastructure Cost Estimate and Quality Control Procedure MICHAEL SOLEK, JAEHOON YU, WOYOUNG JANG, AAYUSH BHATTARAI, AHMED BEDAIR, STEVEN BOUCHER, CRISTOBAL GARCES, HARSHWARDHAN PRASAD, HECTOR CARRANZA, SKYLER RYU, ERIC GARCIA, University of Texas at Arlington — The Deep Underground Neutrino Experiment (DUNE) will precisely measure properties of neutrinos which make up a quarter of the fundamental particles in the Standard Model of particle physics. The DUNE detector will construct four liquid argon time projection chambers (TPC), each in an approximately 13,000 cubic meter cryostat. The field cage (FC) ensures uniformity of the electric field, essential for the TPC to precisely detect and reconstruct particle trajectory. Half of the detectors will be constructed by late 2020s, each requiring the construction of 200 3.5mX2.3m FC modules to generate the electric field. Due to the tight tolerances needed to keep the field uniform and maintain the high voltage safely, important infrastructure for the assembly of the FC modules was built, such as assembly tables to expedite construction of the modules and ensure tolerances are met. A basic cost analysis of the table's construction has been performed to assess financial impact on the project. Finally, we have developed a quality control procedure to ensure that the parts used to construct the modules meet the standards required. This presentation will discuss the FC design and construction infrastructure, the cost estimate process for the assembly table, and the FC quality control process.

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