

Abstract Submitted
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Mechanical Design of the Dual-Phase DUNE Far Detector CRISTOBAL GARCES, JAEHOON YU, HECTOR CARRANZA, JAKOB SCANTLIN, CRISTIAN GARCES, MATHEW RAPP, ARCHIT JAISWAL, AKOLADE ADEBAYO, STEVEN BOUCHER, MATTHEW BEUTEL, AAYUSH BHATTARAI, University of Texas at Arlington — The Deep Underground Neutrino Experiment (DUNE) will consist of a far detector located at the Sanford Underground Research Facility (SURF) in South Dakota 1300 km away from Fermilab in Illinois. The far detector is a composition of four LArTPCs. Of these individual detectors, one will utilize dual-phase (DP) technology. The DP Far Detector differs from the typical single-phase (SP) detectors in that ionization charges are accelerated vertically rather than horizontally, and that detection of these particles occur in gaseous argon. To accomplish this, a sophisticated high voltage system and vertically oriented field cage will be required. The entirety of the DP field cage is 12 meters tall, 12 meters wide, and 60 meters long. The frame of the cage is made up of fiber-reinforced-plastic (FRP) I-beams and is populated with aluminum profiles that will distribute a uniform electric field in conjunction with the HV system. This talk will address the mechanical design of the DUNE DP Field Cage.

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