

Abstract Submitted  
for the APR21 Meeting of  
The American Physical Society

**DUNE ND-GAr Gas Flow Studies and Electrostatic Simulations**

CHRISTOPHER HAYES, Indiana University — The Deep Underground Neutrino Experiment (DUNE) will have as part of its near detector suite a component called ND-GAr which features a high-pressure (10 atmospheres) gaseous argon target. The current design for the target is a cylindrical-geometry Time Projection Chamber (TPC), operating at a static field of 400V/cm. A sampling plastic-scintillator electromagnetic calorimeter surrounds the TPC and occupies much of the remaining pressurized volume within the bore of a superconducting solenoidal magnet. For this presentation, simple gas flow and electrostatic simulations, prepared using the Elmer open-source finite-element software suite, will be discussed. Electrostatic simulations have been performed for both single and dual anode design options. Gas flow simulations are prepared specifically for the TPC volume, and for the volume surrounding the TPC.

Christopher Hayes  
Indiana University

Date submitted: 05 Jan 2021

Electronic form version 1.4