

# A Gaseous-Ar Based Near Detector (ND-GAr) for DUNE Phase II

*Friday 19 July 2024 09:21 (17 minutes)*

The Deep Underground Neutrino Experiment (DUNE) is a next-generation international experiment that aims to make high-precision measurements of neutrino mixing parameters. DUNE will include a multiple-component near detector (ND) complex that will be located on the LBNF beamline at Fermilab in Batavia, IL. During DUNE Phase II, there will exist a high-pressure gaseous argon TPC surrounded by a calorimeter and a magnet, referred to as ND-GAr. As a fine-grained tracker with a low detection threshold, it will be capable of measuring one of the most crucial sources of systematic uncertainty for neutrino oscillation measurements: nuclear effects in argon at the neutrino interaction vertex. This makes ND-GAr essential for DUNE to reach its precision physics goals. This talk will present an overview of the ND-GAr design, its expected performance, and the R&D efforts on various readout systems. These readout systems include technologies such as wire chambers and Gas Electron Multipliers (GEMs).

## Alternate track

1. Neutrino Physics

## I read the instructions above

Yes

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**Session Classification:** Detectors for Future Facilities, R&D, Novel Techniques

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