

SAND - System for on-Axis Neutrino Detection - in the DUNE Near Detector Complex

The DUNE experiment aims to precisely measure the long baseline neutrino oscillation parameters. The DUNE Far Detector consists of four liquid argon time-projection chambers (total LAr mass of 17 kton for each cryostat), that will be installed at the Sanford Underground Research Facility (SURF) in South Dakota, 1300 km from the proton beam target.

The Near Detector complex, located at Fermilab, is fundamental for limiting the systematic uncertainties, due to the neutrino/antineutrino flux and to the cross-section. It comprises three complementary detectors: ND-Lar, ND-Gar and SAND (System for on-Axis Neutrino Detection). ND-Lar and ND-Gar can move off-axis, while SAND is the only detector permanently on-axis, whose primary goal is to monitor the beam and to measure the flux. In this talk, the SAND design and the expected performances will be described together with its role within the Near Detector complex for the DUNE physics program.

Working group

WG1

Primary author: DUNE COLLABORATION

Presenter: VICENZI, Matteo (University of Genova)

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