

The SAND tracking system at the DUNE Near Detector

Within the DUNE next-generation neutrino oscillation experiment, the Near-Detector complex has the main aim of constraining systematic uncertainties, in order to allow precise oscillation measurements. The SAND detector is one of the three components of the Near Detector complex. Its aim is to monitor the neutrino beam from an on-axis position and carry out neutrino cross section measurements on different target nuclei. SAND will leverage a 0.6 T superconducting magnet and a lead-scintillator fiber electromagnetic calorimeter. The inner magnetized volume of SAND will host a low-density tracker based on Straw Tubes (STT) and thin ($1 - 2\% X_0$) passive target planes of various materials, capable of combining a relatively large mass (about 5 t) with high spatial and momentum resolution. Using alternating carbon and CH_2 targets, the STT will provide a high-statistics $\nu(\bar{\nu}) - \text{H CC}$ ("solid hydrogen") interaction sample. This poster will present the physics program of the SAND tracker and the current status of the design and analysis activities, together with the R\&D on small scale prototypes.

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