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The System for on-Axis Neutrino Detection of the DUNE Near Detector complex

DUNE is a next-generation, long-baseline neutrino oscillation experiment. Its main physics goals are the precise measurement of oscillation parameters, the determination of mass ordering and charge-parity symmetry violation along with BSM topics, including proton decay and supernova detection. The System for on-Axis Neutrino Detection (SAND) is part of the near detector complex. SAND is composed of a superconducting iron magnet, a lead/scintillating fiber spaghetti electromagnetic calorimeter, a LAr target, and an inner tracking system. Exploiting the features of these detectors, SAND will accurately monitor the LBNF neutrino beam. A broader physics program is also planned, including precision measurements of neutrino cross-sections thanks to the use of both Argon and lighter material targets. In this talk, the design of the SAND system will be presented and its expected physics performance will be discussed.

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