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The Deep Underground Neutrino Experiment DUNE: Prospective Physics Program and Status

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The Deep Underground Neutrino Experiment (DUNE) has exciting physics prospects on the horizon, including determining the neutrino mass ordering, measuring \delta_{CP} with sufficient precision to discover CP violation in neutrino oscillation, and detecting neutrinos from core-collapse supernovae and other astrophysical phenomena. DUNE will utilize a high-intensity neutrino beam produced at the Long-Baseline Neutrino Facility (LBNF) at Fermilab, a near detector also located at Fermilab, and a far detector located deep underground at the Sanford Underground Research Facility (SURF) in Lead, South Dakota. The far detector will utilize the LArTPC (Liquid Argon Time Projection Chamber) technology and will be large enough (total argon mass of 70 kt across four modules) to ensure high enough event rates for a successful physics program. In this talk, the prospective physics program and current status of DUNE is discussed.

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