

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

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The Deep Underground Neutrino Experiment (DUNE) is the future flagship particle physics experiment of the US HEP program. It will measure the mass ordering within a few years, will make precision measurements of various neutrino oscillation parameters, and has the potential to make measurements of CP-violation in the neutrino sector with >5 (>3) sigma significance for 50% ($>75\%$) of the parameter space. These measurements will be enabled by DUNE's 800 mile baseline, tens of kilotons of liquid argon target a mile underground at SURF, wideband neutrino beam in the few GeV range of unprecedented intensity, and highly performant near detector complex. This talk will review the primary science program of DUNE in light of the current generation of experiments, i.e. T2K and NOvA, and provide an overview of prototyping and construction efforts underway towards realizing this ambitious experiment.

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