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Current status and future physics potential of the DUNE experiment

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The Deep Underground Neutrino Experiment (DUNE) is a next-generation long-baseline neutrino oscillation experiment that will employ large-scale cutting-edge liquid argon time projection chamber detectors and the most intense neutrino beam in the world to answer fundamental open questions in particle physics. The experiment's main goals include precision measurement of neutrino oscillation parameters, notably the CP violating phase δ , that could account for the imbalance between matter and antimatter in the universe, and the unambiguous determination of the neutrino mass hierarchy. DUNE will also be sensitive to electron neutrinos from a core-collapse galactic supernova burst, to measuring atmospheric neutrino oscillation, and it will perform a broad range of additional searches beyond the Standard Model. In this talk I will give an overview of the DUNE experiment, including its detector technology, physics programme, current status and future physics potential.

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