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Supernova neutrinos in the DUNE experiment

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The Deep Underground Neutrino Experiment (DUNE) is a next-generation long-baseline experiment that will determine neutrino mass ordering (> 5σ), discover leptonic CP violation if nearly maximal violation, precisely measure neutrino oscillation parameters, observe astrophysical neutrinos, and search for processes beyond the standard model. The experiment will consist of four modules of Liquid Argon Time Projection Chamber detectors, with a total liquid argon mass of 70 kilotons, located 1.5 km underground at the Sanford Underground Research Facility in the USA. These modules are being designed to meet the specific requirements of low-energy physics searches. As a result, DUNE will be capable of detecting MeV-scale neutrinos from astrophysical sources. DUNE will offer unique sensitivity to electron neutrinos from a core-collapse supernova burst, with pointing capabilities. The talk will cover recent progress on the detection and reconstruction of supernova burst neutrinos in DUNE as well as the pointing capabilities.

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