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Status of the CUORE Neutrinoless Double-Beta Decay Experiment

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Observation of exotic neutrinoless double-beta decays would indicate that neutrinos are Majorana particles. The rate of the process is sensitive to the effective neutrino mass. Cryogenic Underground Observatory for Rare Events (CUORE), a next-generation large-scale double-beta decay experiment, is currently under construction at the Gran Sasso National Laboratory (LNGS) in Italy. It will be sensitive to the neutrino mass values suggested by recent atmospheric neutrino oscillation experiments in the so-called inverted mass hierarchy. We will review the status of the R&D and construction efforts and the prospects for the double-beta decay and other measurements with CUORE.

¹For the CUORE Collaboration