

PPC 2023: XVI International Conference on Interactions between Particle Physics and Cosmology

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AMoRE

Monday, 12 June 2023 16:50 (20 minutes)

The absolute mass scale of neutrinos and whether neutrinos are Majorana or Dirac particles can be determined by the detection of neutrinoless double beta decay ($0\nu\beta\beta$). Key parameters for the experimental sensitivity are the energy resolution and the background level at the region of interest. AMoRE searches for $0\nu\beta\beta$ using molybdenum-100 enriched scintillation bolometer crystals in a cryogenic detector system at deep underground. Detector performances and efforts to reduce the background have been demonstrated in the pilot and the first stage of AMoRE conducted in the Yangyang Underground Laboratory. The next and main stage of AMoRE, AMoRE-II, is about to start its operation in the newly built Yemi Underground Laboratory. Using crystals made from about 100 kg of molybdenum-100 isotope for at least 5 years, we expect to have the discovery sensitivity for the $0\nu\beta\beta$ half-life at 5×10^{26} years.

Secondary category for the parallel session (optional)

Neutrino Physics

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