

Detector status of AMoRE-Pilot Experiment

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Advanced Molybdenum-based Rare-process Experiment (AMoRE) aims to search for the neutrinoless double beta decay (0nbb) of Mo-100 in scintillating molybdenum-based crystals using cryogenic metallic magnetic calorimeters (MMCs) at millikelvin temperature. Its commissioning phase, the AMoRE-Pilot, is currently running in the 700-meter-deep Yangyang underground laboratory (Y2L) with six $^{40}\text{Ca}^{100}\text{MoO}_4$ crystals weighing in total 1.9 kg. Throughout the pilot phase, the vibrational noise coming from the pulse tube refrigerator, which is the main source of the noise, has been reduced by installing vibration dampers in the dilution refrigerator. The origins of the main background have also been tentatively identified, and the highly contaminated components have been replaced. Detector modules for AMoRE-I, the first phase of AMoRE experiment, is currently in preparation using the results of AMoRE-Pilot. In this presentation, we describe the current status of AMoRE experiment.

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