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The AMoRE Pilot experiment

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The advanced Mo-based rare-process experiment (AMoRE) is an underground cryogenic particle detection experiment to search for neutrinoless double beta decay of ^{100}Mo . The experiment uses scintillating crystals composed of enriched ^{100}Mo isotopes as the target material for simultaneous detection of phonon and scintillation signals with MMC readouts at millikelvin temperatures. As a pilot stage of the project, several sets of measurements have been carried out with six $^{40}\text{Ca}^{100}\text{MoO}_4$ crystals with total mass of 1.9 kg at Yangyang underground laboratory. We report on the improvement of the detector performance and the background levels for each measurement set. The detection sensitivities and the possible origins of the backgrounds will be also discussed.

Less than 5 years of experience since completion of Ph.D

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Student (Ph.D., M.Sc. or B.Sc.)

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