

## **Plastic Scintillator Muon Detector (PSMD) for AMoRE-II**

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(on behalf of the AMoRE Collaboration)

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The Advanced Mo-based Rare process Experiment (AMoRE) is a project aimed at searching for neutrinoless double-beta decay using the <sup>100</sup>Mo isotope in molybdate crystals. AMoRE-II, the next phase of the experiment, will use approximately 157 kg of Li<sub>2</sub>MoO<sub>4</sub> crystals and will be conducted this year at Yemilab.

AMoRE-II requires a zero-background level to achieve the detection sensitivity target ( $8 \times 10^{26}$  yr). The muon veto system is essential for achieving the target background level by tagging and rejecting events induced by cosmic muons. The muon veto system of AMoRE-II is composed of a water Cherenkov detector and a plastic scintillator muon detector (PSMD). The PSMD corresponds to the lower section of the muon veto system. One PSMD unit corresponds to a single detector and is composed of two layers of plastic scintillators, wavelength-shifting fibers, and SiPMs. A total of 130 units are used for the PSMD.

The muon veto system has been completed and is now operational. In this talk, we will present the development of the PSMD and the current status of the muon analysis using AMoRE-II PSMD data.