

AMoRE-II construction status

Monday 25 August 2025 16:40 (20 minutes)

The AMoRE experiment has been searching for neutrinoless double beta decay in Mo-100 nuclei, setting the most stringent limit to date on the half-life of the decay as larger than 2.9×10^{24} years at 90% CL. The experiment is now advancing toward the AMoRE-II phase, which aims for a sensitivity of 4.5×10^{26} years, utilizing a large cryogenic calorimeter array with lithium molybdate crystals embedded with approximately 90 kg of the Mo-100 isotope, and targeting a background level of 10^{-4} counts/keV/kg/year in the region of interest around the 3034 keV Q-value. The detector housing, including the radiation shield and muon veto system, is already in place and undergoing commissioning at Yemilab. The detector array will be constructed in two stages: stage 1 with 27 kg of detector mass, and stage 2 with a total of 157 kg. The construction of stage 1 is expected to be completed later this year, opening up new scientific opportunities with significantly enhanced sensitivity. The status and prospects of the AMoRE-II experiment will be discussed in the presentation.

Collaboration you are representing

AMoRE

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Session Classification: Neutrino Physics and Astrophysics

Track Classification: Neutrino Physics and Astrophysics