Contribution ID: **366** Type: **Poster**

Ultra-Low background germanium spectrometers at the China Jinping Underground Laboratory

Wednesday 27 August 2025 18:00 (2 hours)

Four ultra-low background germanium spectrometers, called GeTHU, have been installed at the first phase of China Jinping Underground Laboratory (CJPL-I) and served for material screening of dark matter and neutrino experiments. Recently, a new multi-detector spectrometer with five germanium detectors has been developed and installed at the second phase of CJPL(CJPL-II) with a minimum detectable activity (MDA) of about 10 μBq/kg level. In addition, another fifteen GeTHU-like spectrometers have been installed at CJPL-II with an MDA of about 1 mBq/kg level. This paper will introduce the ultra-low background germanium spectrometers including shielding design, background characteristics and application to material screening.

Collaboration you are representing

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Session Classification: Poster session

Track Classification: Underground Laboratories