

Low-Background Gamma-Ray Spectrometry in the Garching Underground Laboratory

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We present two screening setups located in the Garching Underground Lab at a shallow depth of 10 m.w.e. One screening station consists of a 150% efficiency HPGe detector surrounded by an anti-Compton veto made of a NaI(Tl) scintillation detector. In addition, a passive lead shielding, a N₂ flushed box and muon veto panels complete the setup.

With this setup we reach sensitivities down to 1 mBq/kg for U-238 and Th-232. The integral count rate in the energy range from 40-2700 keV is 10250 \pm 26 cts/day.

The second newly set-up screening station consists of two smaller HPGe detectors arranged face-to-face which are also surrounded by a passive lead shielding, a N₂ flushed box and muon veto panels. The integral count rate in the energy range from 20-1500 keV is 5258 \pm 27 cts/day and 6876 \pm 31 cts/day for the two detectors, respectively.

Summary

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