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Status of the CAGe germanium detector array at the IBS Center for Underground Physics

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The IBS Center for Underground Physics (CUP) operates a number of rare-event search experiments, including the AMoRE double-beta-decay search and the COSINE dark-matter search, previously operating at the Yangyang Underground Laboratory in Yangyang, Korea, with new operations now moved to the newer Yemilab facility. Such experiments require extensive radioactivity assay of the detector materials. As such, CUP has developed and maintained a number of assay facilities and methods, including multiple high-purity germanium (HPGe) detectors. The CAGe is a particularly unusual array of fourteen 70% relative-efficiency HPGe detectors, designed in collaboration with Mirion Technologies, and operated by CUP at Yemilab since 2017. It has been used primarily to measure trace radioactivity in materials with particularly stringent assay requirements, especially for the AMoRE experiment, and is now being used for physics searches as well. This talk will present the status, operation, and performance of the CAGe detector system in the context of these measurements, its potential for physics searches, and the upcoming move to Yemilab.

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