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Future opportunity with Germanium detectors at the Jinping underground Laboratory

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The China JinPing underground Laboratory (CJPL) is the deepest underground laboratory in operation in the world. It is located under the Jinping mountain, in the southwestern Chinese province of Sichuan. The experimental hall has an overburden of about 2400 m of rock. The measured muon flux in CJPL is around 60 muons per squaremeter per year. This extremely small muon flux make CJPL a perfect place to host low background experiments looking for really rare events like neutrino less double beta decay (0nuBB decay) or dark matter (DM) interactions. Since Ge76 can decay via double beta decay, several 0nuBB decay experiments used and use Germanium detectors (e.g. Heidelberg-Moscow, GERDA and Majorana). These fulfill also many experimental requirements for DM search, indeed numerous DM experiments use this technology (e.g. CDMS, Edelweiss and CDEX). The idea is to combine these two searches in a unique one Ton Germanium facility placed in CJPL. The sensitivity achievable was investigated. Research on detector development is performed at the Max-Planck-Institute for Physics in Munich. The goal is to use the same detector for both searches. Some results on events due to contaminations on the detector surfaces are also presented.

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