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## Searching for neutrinoless double beta decay with scintillating bolometers: the LUCINEU experiment

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Neutrinoless double beta decay is a very rare nuclear process whose observation would provide essential information on neutrino properties. My PhD thesis subject focuses on the search for this phenomenon in the isotope  $^{100}\text{Mo}$ . The thesis activity aims at preparing and performing an underground demonstrator experiment named LUCINEU.

This experiment uses as detectors scintillating bolometers. They are made of scintillating crystals of  $\text{ZnMoO}_4$  and  $\text{Li}_2\text{MoO}_4$  (including enriched  $^{100}\text{Mo}$ ) produced in NIIC (Novosibirsk), NTD Ge thermistors previously characterized in their resistivity- temperature and voltage-current behavior, NTD Ge and light detectors working in the range 10-20 mK.

Some RD tests are ongoing at the Underground Laboratory of Modane. In this poster, I will present first results coming from a big enriched  $\text{Li}_2\text{MoO}_4$  crystal and a detector decoupling system obtained in the EDELWEISS set-up with the aim to get better noise conditions. This configuration is a possible prototype for a suspension system for the LUCINEU project.

Looking at these results, it is clear that  $\text{Li}_2\text{MoO}_4$  crystals are very promising candidates for double beta decay researches.

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