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## Precise measurement of two-neutrino double beta decay half-life of $^{100}\text{Mo}$ using enriched $\text{Li}_2^{100}\text{MoO}_4$ scintillating crystals

We will present the most precise measurement of the two-neutrino double-beta decay of  $^{100}\text{Mo}$  using lithium molybdate scintillating low-temperature calorimeters. We used four highly radiopure and  $^{100}\text{Mo}$ -enriched crystals for the measurement. We developed the detectors under the purview of the CUPID-Mo experiment and operated them in the EDELWEISS-III low-background facility in the Modane underground laboratory. We rejected the contribution of  $\alpha$  particles and reduced our background by simultaneously detecting the heat and light channel in the crystal. With a high selection efficiency ( $\sim 96\%$ ) and an exposure of  $42.235 \text{ kg}\times\text{d}$ , we measured the half-life to be  $T_{1/2}^{2\nu} = [7.12^{+0.18}_{-0.14} \text{ (stat.)} \pm 0.10 \text{ (syst.)}] \times 10^{18}$  years. We will present an overview of experiment, analysis of the background model, and a discussion on the reported systematic errors.

### Mini-abstract

Most precise measurement of  $2\nu\beta\beta$  decay half life of  $^{100}\text{Mo}$  using cryogenic calorimeters.

### Experiment/Collaboration

Lumineu/Cupid-Mo collaboration

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