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# Mo-100 double-beta decay search in the CUPID-Mo experiment with enriched scintillating bolometers

Know-how of 100Mo-enriched Li2MoO4 scintillating bolometers has been recently developed by the LUMINEU Collaboration as a part of the R&D activities towards a tonne-scale 0ν2β experiment CUPID. The reproducibility of high performance (~5-6 keV FWHM at 2615 keV, α background rejection on the level of about 9σ) and radiopurity (below 10 μBq/kg U/Th activity) has been demonstrated in multiple tests. Moreover, with only ~0.1 kg*yr of 100Mo exposure, the measured 2ν2β decay half-life is one of the most precise values ever reported. As a follow-up of this activity, a demonstrator named CUPID-Mo is now ready to collect data in the Modane underground laboratory. CUPID-Mo consists of twenty 0.2-kg 100Mo-enriched Li2MoO4 scintillating bolometers (containing more than 2 kg of 100Mo) to be operated for at least 0.5 yr providing a sensitivity to 0ν2β decay of 100Mo larger than $10^{24}$ yr. A prolongation of the experiment and its extension to the available ~7 kg of 100Mo are under consideration.

## Authorship annotation

for CUPID-Mo Collaboration

## Session and Location

Monday Session, Poster Wall #76 (Auditorium Gallery Right)

## Poster included in proceedings:

yes

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**Track Classification:** Poster (participating in poster prize competition)