

## Search for neutrinoless double beta decay with CUPID

*Thursday, May 12, 2022 9:35 AM (25 minutes)*

CUPID is an upcoming cryogenic bolometric  $0\nu\beta\beta$  experiment with plans to provide sensitivity to the Majorana nature of neutrinos at the scales corresponding to the inverted mass ordering. Designed based on the expertise, infrastructure, and experience of CUORE, CUPID-0, and CUPID-Mo experiments, CUPID will utilize 1596  $\text{Li}_2\text{MoO}_4$  scintillating crystals amounting to 240 kg of  $^{100}\text{Mo}$ . A combination of active background rejection techniques and high Q-value of  $^{100}\text{Mo}$  will allow CUPID to reduce the backgrounds by at least two orders of magnitude compared to CUORE. Using a data-driven background model, CUPID projects the sensitivity to  $0\nu\beta\beta$  half-life beyond  $10^{27}$  yr. This talk will present the design, status, and sensitivity reach of the CUPID experiment.

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**Session Classification:** Plenary - Undiscovered Decays

**Track Classification:** Double Beta Decay