

Searching for neutrinoless double-beta decay with CUPID

Friday 19 July 2024 11:15 (15 minutes)

Neutrinoless double-beta decay plays a crucial role in addressing crucial questions in particle physics, including lepton number conservation and the Majorana nature of neutrinos. CUPID is a next-generation experiment to search for $0\nu\beta\beta$ of ^{100}Mo using scintillating bolometers. CUPID profits from the experience acquired with CUORE, the first ton-scale bolometric array, currently in operation, and will be hosted in its cryogenic infrastructure. With 1596 scintillating ^{100}Mo -enriched Li_2MoO_4 crystals coupled to 1710 light detectors, CUPID enables simultaneous readout of heat and light, allowing for particle id and a robust rejection of the alpha background, reaching a sensitivity greater than $1\text{E}27$ yr. Today, ongoing coordinated efforts and R&D projects aim to finalize the detector design and assess its performance and physics capabilities. In this presentation, we will provide an overview of the current status of CUPID and highlight the upcoming milestones in the experiment construction.

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

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