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Backgrounds and sensitivity of the CUPID experiment

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Next generation neutrinoless double beta experiments aims at covering the inverted hierarchy region of the neutrino mass spectrum, with sensitivities on the half-lives greater than 10^{27} years. The CUPID experiment will exploit cryogenic calorimeters to search for neutrinoless double beta decay of ^{100}Mo. To reach the target sensitivities one of the key requirements is the control of the background level. In this talk I will detail the CUPID background sources and the background level estimation for each of them. The radioactive background expectations are based on Monte-Carlo simulations and material screening. Other backgrounds are derived from detector performances in R&D tests. Finally, I will show the expected sensitivity on the neutrinoless double beta decay half-live and the effective neutrino mass (depending on the Nuclear Matrix Element) based on the background predictions.

Submitted on behalf of a Collaboration?

Yes

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