

Contribution ID: 295 Type: Poster

Latest results from the CUORE experiment on double beta decay of ^{130}Te to the first 0^+ excited state of ^{130}Xe

The CUORE experiment is the largest bolometric array ever built with the main goal of searching for the lepton flavor violating neutrinoless double beta decay of $^{130}\mathrm{Te}$. The closely packed arrangement of the CUORE crystals allows us to look for coincident signals between detectors. The latest results on $^{130}\mathrm{Te}$ $0\nu\beta\beta$ and $2\nu\beta\beta$ decay to the first 0^+ excited state of $^{130}\mathrm{Xe}$ will be presented and discussed. The presence of de-excitation gammas in the final state helps reducing the background by studying coincident events in two or more bolometers.

Mini-abstract

Bayesian limit on $^{130}{\rm Te}~\beta\beta$ decay rate to 0_2^+ excited state of $^{130}{\rm Xe}$

Experiment/Collaboration

CUORE collaboration

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Session Classification: Poster Session 2