

The Electron Capture in ^{163}Ho experiment - ECHo

The present upper limit on the electron neutrino mass $m(\nu_e)$ is still at 225 eV. The Electron Capture in ^{163}Ho experiment, ECHo, is designed to investigate $m(\nu_e)$ in the sub-eV region.

In ECHo, high sensitivity on a finite $m(\nu_e)$ will be reached by the analysis of the endpoint region in high statistics and high resolution calorimetrically measured ^{163}Ho spectra. To perform this experiment, high purity ^{163}Ho source will be enclosed in a large number of low temperature metallic magnetic micro-calorimeters which are readout using the microwave multiplexing technique.

Thanks to the modular approach, the ECHo experiment is designed to be stepwise up-graded. The first on-going phase, ECHo-1k, is characterized by a ^{163}Ho activity of about 1 kBq will allow for improving the limit on $m(\nu_e)$ by more than one order of magnitude.

Authorship annotation

for the ECHo Collaboration

Session and Location

Monday Session, Poster Wall #22 (Robert-Schumann-Room)

Poster included in proceedings:

no

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Track Classification: Poster (not participating in poster prize competition)