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The Electron Capture in Ho-163 experiment - ECHO

The goal for the ECHO experiment is the determination of the effective electron neutrino mass by analyzing the electron capture (EC) spectrum of ^{163}Ho . Metallic magnetic calorimeters enclosing ^{163}Ho , achieved very good performance to conduct such an experiment. During the first phase of the experiment, ECHO-1k, the detector production and the implantation process of high purity ^{163}Ho have been optimized. Large detector arrays have been developed, featuring energy resolution below 5eV and activity of about 1Bq per pixel. High statistics and high resolution ^{163}Ho spectra have been acquired and analyzed in light of new theoretical description of the spectral shape, considering the independently determined Q_{EC} -value, and a dedicated background model. In this contribution, we present preliminary results obtained in the first phase of ECHO. At the same time, we discuss the necessary upgrades towards the second phase of the experiment, ECHO-100k.

Mini-abstract

Recent results from the ECHO experiment and plans for the coming phase ECHO-100k will be discussed

Experiment/Collaboration

ECHO Collaboration

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