Contribution ID: **400** Type: **Poster**

Magnetic field calibration and instrumental response for Project 8 Phase II apparatus with a Kr-83m source

The Project 8 collaboration developed the Cyclotron Radiation Emission Spectroscopy (CRES) technique, aiming to directly measure the absolute neutrino mass with the tritium beta-decay electron energy spectrum endpoint method. Given the convenience of its K-conversion line at 17.8 keV near the tritium endpoint at 18.6 keV, we use ^{83m}Kr as an electron source for magnetic field calibration and instrumental response measurement.

In this poster, we present our fitting of the spectrum of the ^{83m}Kr 17.8 keV line measured by the Project 8 Phase II apparatus. Based on the fitting, we find our instrumental resolution can be as small as $\sim$2 eV in a shallow magnetic trap. We also present the linearity performance of the instrumental response.

Mini-abstract

We present fitting of ^{83m}Kr 17.8 keV line measured in Project 8 Phase II.

Experiment/Collaboration

Project 8

Primary authors: Ms CLAESSENS, Christine (Johannes Gutenberg - Universität Mainz); Dr PETTUS, Walter (University of Washington); Mr SUN, Yuhao (Case Western Reserve University)

Presenters: Ms CLAESSENS, Christine (Johannes Gutenberg - Universität Mainz); Dr PETTUS, Walter (University of Washington); Mr SUN, Yuhao (Case Western Reserve University)

Session Classification: Poster session 4