

COLLOQUIUM

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Weighing Neutrinos

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Abstract

The mass of the neutrino has been an elusive quantity physicists have tried to measure since the very inception of the particle. The most sensitive direct method to establish the absolute neutrino mass is observation of the endpoint of the tritium beta-decay spectrum. A lower bound of 9 meV is set by observations of neutrino oscillations, while the KATRIN Experiment – the current-generation tritium beta-decay experiment that is based on Magnetic Adiabatic Collimation with an Electrostatic (MAC-E) filter – will achieve a sensitivity of 0.2 eV. Project 8 is a new experiment that uses Cyclotron Radiation Emission Spectroscopy (CRES) to probe much of the unexplored neutrino mass range with sub-eV resolution. In this talk, I will review the current status of these two experiments (KATRIN and Project 8) as they seek to finally measure the mass of the neutrino.

Monday, May 1, 2017, 3:00 pm

SERC, Room #116

Refreshments served at 2:45 pm