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# Project 8: First application of CRES to tritium decay

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Neutrino flavor oscillation experiments prove that neutrinos have non-zero masses. Extensions to the Standard Model of Particle Physics have been developed to explain the non-zero masses and can be directly tested by a measurement of the absolute neutrino mass scale. The mass of the electron antineutrino $m_{\bar{\nu}_e}$ can be determined from the highest precision measurement of the $\beta^-$-decay spectrum of tritium around its endpoint region (Q = 18.6 keV). The current state-of-the-art experiment, KATRIN, stretches all technological limits to probe the range of $m_{\bar{\nu}_e}$ down to $200\,\mathrm{meV/c^2}$. The Project 8 collaboration envisions a completely new path to measure $m_{\bar{\nu}_e}$. The recently demonstrated technique of Cyclotron Radiation Emission Spectroscopy (CRES) allows for a frequency-based measurement of the decay electron energy. I will present technical aspects of the apparatus used for the very first application of CRES to the measurement of the continuous decay spectrum of tritium.
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