

## **Project 8: Cyclotron Radiation Emission Spectroscopy, a New Technique in Direct Neutrino Mass Measurement**

*Tuesday, 29 May 2018 14:20 (20 minutes)*

Project 8 has demonstrated Cyclotron Radiation Emission Spectroscopy (CRES) as a novel technique for performing electron spectroscopy. Applying this method to highest energy electrons from tritium beta decay will lead to a direct neutrino mass measurement. A proof of this concept was performed with a waveguide detector utilizing conversion electrons from  $^{83m}\text{Kr}$  monoenergetic lines. The demonstrator has expanded our knowledge of rich spectral features in CRES signals. As a next step, we have upgraded our hardware to meet the requirements for a demonstration with tritium. Here I present both the hardware and analysis progress which will lead us to the first continuous spectrum measurement.

### **E-mail**

ashtari@uw.edu

### **Collaboration name**

Project 8

**Primary author:** Mr ASHTARI ESFAHANI, Ali (University of Washington)

**Presenter:** Mr ASHTARI ESFAHANI, Ali (University of Washington)

**Session Classification:** Neutrino Masses and Neutrino Mixing

**Track Classification:** NMNM