



## Poster session 4 - Friday 8 July

### P4.040 Search for sterile neutrinos with KATRIN

S Mertens<sup>1</sup>, T Lasserre<sup>2</sup>, D Radford<sup>3</sup>, K Dolde<sup>1</sup>, A Huber<sup>1</sup> and M Korzeczek<sup>1</sup>

<sup>1</sup>Karlsruhe Institute of Technology, Germany, <sup>2</sup>CEA Saclay, France, <sup>3</sup>Oak Ridge National Laboratory, USA

*on behalf of KATRIN collaboration*

Right-handed neutrinos are a natural extension of the Standard Model of particle physics. These neutrinos would not take part in Standard Model interactions and are therefore called sterile neutrinos. Light sterile neutrinos (eV mass range) are motivated by a number of puzzling experimental anomalies. Heavier sterile neutrinos (keV mass range) could account for a significant fraction of the dark matter in the universe. A unique way to search for these sterile neutrinos in a model-independent laboratory experiment is via tritium beta decay.

The Karlsruhe Tritium Neutrino Experiment (KATRIN) is a large-scale tritium beta decay experiment planned to begin taking data in the near future. Its primary goal is to directly probe the absolute neutrino mass scale by measuring the tritium beta decay spectrum close to its endpoint. However, extending the measurement interval to the entire beta-decay energy spectrum makes a high-sensitivity search for sterile neutrinos possible. In this poster the perspectives of KATRIN to search for sterile neutrinos will be presented.