Contribution ID: **491** Type: **Poster sterile**

The TRISTAN project

Sterile neutrinos are a natural extension of the Standard Model of particle physics. With a mass in the keV-range they 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. Its primary goal is to directly probe the absolute neutrino mass scale by measuring the tritium beta decay spectrum close to its endpoint. A novel detector system would allow to extend the measurement interval to the entire beta-decay energy spectrum, which would make a high-sensitivity search for sterile neutrinos possible. In this poster, an overview of the keV-scale sterile neutrino program of KATRIN, perused within the TRISTAN project, will be presented.

Session and Location

Monday Session, Poster Wall #148 (Hölderlin-Room)

Poster included in proceedings:

yes

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Track Classification: Poster (not participating in poster prize competition)