



Contribution ID: 253

Type: **Poster**

Search for light sterile neutrinos with the KATRIN experiment

Wednesday 30 August 2023 16:14 (1 minute)

The KATRIN collaboration aims to determine the effective electron anti-neutrino mass with a target sensitivity of $0.2 \text{ eV}/c^2$ (90 % CL). To this end, KATRIN is currently performing high-statistics and high-resolution measurements of the tritium β -electron spectrum close to the endpoint region.

In addition to the neutrino mass search, the measured β -spectrum can be analysed for an imprint of sterile neutrinos in the eV mass range.

The signature of a sterile neutrino would be manifested as a kink-like distortion within the differential β -spectrum, where the kink position corresponds to the sterile mass and the amplitude to the active-to-sterile mixing.

This poster presents the analysis methods and current results of the light sterile neutrino search with KATRIN. Furthermore, an outlook on the expected sensitivity of additional measurement campaigns will be provided.

Submitted on behalf of a Collaboration?

Yes

Author: KÖLLENBERGER, Leonard (Institute for Astroparticle Physics (IAP), Karlsruhe Institute of Technology (KIT))

Presenter: KÖLLENBERGER, Leonard (Institute for Astroparticle Physics (IAP), Karlsruhe Institute of Technology (KIT))

Session Classification: Poster session

Track Classification: Neutrino physics and astrophysics