

KATRIN sterile neutrino analysis

Light sterile neutrinos with a mass at the eV-scale could explain several anomalies observed in short-baseline neutrino oscillation experiments. The Karlsruhe Tritium Neutrino (KATRIN) experiment is designed to determine the effective electron anti-neutrino mass via the kinematics of tritium β -decay. The precisely measured β -spectrum can also be used to search for the signature of light sterile neutrinos. In this poster we present the status of the light sterile neutrino analysis of the KATRIN experiment. The analysis contains data from the first five measurement campaigns and the obtained sensitivity is compared to current results and anomalies in the field of light sterile neutrinos.

This work received funding from the European Research Council under the European Union Horizon 2020 research and innovation programme, and is supported by the Max Planck Computing and Data Facility, the Excellence Cluster ORIGINS, the ORIGINS Data Science Laboratory and the SFB1258.

Primary author: STRIBL, Xaver

Co-authors: Mr KÖHLER, Christoph (Technical University of Munich); MOHANTY, Shailaja (Karlsruhe Institute of Technology)

Presenter: STRIBL, Xaver