

KATRIN

Dr. Rudolf Sack

KIT

The KARlsruhe TRItium Neutrino experiment (KATRIN) is searching for the signature of the neutrino mass in the endpoint region of the tritium beta-decay spectrum. KATRIN combines a high-intensity gaseous molecular tritium source with a high-resolution electrostatic spectrometer with magnetic adiabatic collimation which allowed KATRIN to reach a sub-eV sensitivity to the neutrino mass and to set an upper limit of $0.8 \text{ eV}/c^2$ (90% CL) already with the first 5% of the total expected data.

This talk discusses our new result with 25% of the KATRIN data and improvements in terms of signal-to-background ratio and systematics. It also gives an outlook on the future prospects of KATRIN such as the search for light sterile neutrinos.