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The neutrino mass experiment KATRIN

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The KArlsruhe TRItium Neutrino (KATRIN) experiment is a large-scale experiment with the objective to determine the effective electron anti-neutrino mass with an unprecedented sensitivity of 0.2 eV/c² at 90% C.L. in a model-independent way. The measurement method is based on precision beta-decay spectroscopy of molecular tritium.

The experimental setup consists of a high luminosity windowless gaseous tritium source, a magnetic electron transport system with differential and cryogenic pumping for tritium retention, and an electro-static spectrometer section for energy analysis, followed by a segmented detector system for counting transmitted beta-electrons. First commissioning measurements of the complete beamline were performed in November 2016.

This talk will give an overview of the KATRIN experiment and its current status. Furthermore, results of the recent commissioning measurements of the complete KATRIN beamline will be presented.

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