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Commissioning of the KATRIN Main Spectrometer

Neutrino properties and especially the determination of the neutrino mass play an important role at the intersections of cosmology, particle physics and astroparticle physics.
The KArlsruhe TRItium Neutrino experiment (KATRIN) investigates single beta decay electrons close to their kinematic endpoint in order to determine the neutrino mass by a model-independent method.
Applying an ultra-luminous molecular windowless gaseous tritium source and an integrating high-resolution spectrometer of MAC-E filter type, KATRIN allows beta spectroscopy close to the kinematic endpoint with unprecedented precision and will reach a sensitivity of 200 meV/c2 (90% C.L.) on the neutrino mass.
The poster summarizes the hardware commissioning of the KATRIN Main Spectrometer and Detector Section including vacuum conditioning and high voltage operation. This work is supported by the German Federal Ministry BMBF, the Helmholtz Alliance for Astroparticle Physics HAP, and the Department of Energy DOE.

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