

## Investigations of the KATRIN interspectrometer Penning trap

The Karlsruhe TRitium Neutrino experiment (KATRIN) is aiming to probe the absolute neutrino mass with a sensitivity of  $0.2 \text{ eV}/c^2$  (90 % C.L.). It uses a pair of electrostatic spectrometers of MAC-E filter type to analyze energies of electrons from tritium- $\beta$ -decay. In the region between the spectrometers, a Penning trap is created by their retarding potentials combined with the magnetic field produced by a superconducting magnet. Electrons accumulating in this trap can lead to elevated background levels or discharges that can damage parts of the spectrometer and detector section of KATRIN. To counteract this problem, so-called {\textit{Penning wipers}} were designed and installed in the beamline part between the two spectrometers to remove trapped particles. The system was tested and showed its effectiveness in suppression of the Penning trap effects. Details of the measurements and the results will be presented. This work is supported under BMBF contract 05A17PM3.

### Authorship annotation

M. Fedkevych for the KATRIN collaboration

### Session and Location

Monday Session, Poster Wall #4 (Robert-Schumann-Room)

### Poster included in proceedings:

yes

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**Track Classification:** Poster (participating in poster prize competition)