

## Tritium ion monitoring during KATRIN First Tritium

The Karlsruhe TRitium Neutrino (KATRIN) experiment aims at the model-independent measurement of the electron neutrino mass. KATRIN is designed for a neutrino mass sensitivity of 0.2 eV (90% CL) after three years of measurement time. In May 2018, KATRIN performed its First Tritium measurements. Along with the beta electrons, tritium beta decay creates ions inside the tritium source. The tritium ions are guided by the magnetic field to the Pre- and Main Spectrometer and could create background. Preventing ion induced background is imperative for KATRIN. Therefore, the ions are blocked by ring electrodes with positive potential and removed by electric dipole electrodes via  $\vec{E} \times \vec{B}$ -drift. Various ion detectors continuously monitor the ion blocking and removal. The results of the ion monitoring during the First Tritium measurements will be presented in this poster.

### Authorship annotation

for the KATRIN Collaboration

### Session and Location

Monday Session, Poster Wall #28 (Robert-Schumann-Room)

### Poster included in proceedings:

yes

**Primary authors:** Ms VIZCAYA HERNANDEZ, Ana (CMU); Mr HEIZMANN, Johannes (KIT); Mr SCHIMPF, Lutz (KIT); KLEIN, Manuel (KIT); Mr SACK, Rudolf (WWU); Ms BAEK, Woo-Jeong (KIT)

**Presenter:** KLEIN, Manuel (KIT)

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