

Electron Gun for KATRIN

Authorship annotation

for the KATRIN collaboration

Session and Location

Monday Session, Poster Wall #26 (Robert-Schumann-Room)

Abstract content

The KARlsruhe TRItium Neutrino experiment (KATRIN) is a next generation tritium beta-decay experiment, which aims to determine the neutrino mass with an estimated sensitivity of $0.2 \text{ eV}/c^2$ (90% C.L.).

One of the main sources of systematics in KATRIN is the scattering of beta-electrons on the source gas and its impact on the shape of the measured spectrum. To improve the understanding of the scattering cross-section and for additional systematics and monitoring tasks, the KATRIN beam line is equipped with a mono-energetic and angular selective electron source. This e-gun can reach electron energies of 32 keV , energy widths better than 200 meV and rates of 100 kcps .

The poster will give details on working principle, technical realization, commissioning measurements and future systematics studies and regular monitoring tasks.

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Poster included in proceedings:

yes

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