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## Operation of KATRIN Loops with tritium

The Karlsruhe Tritium Neutrino (KATRIN) experiment aims to determine the effective neutrino mass with a sensitivity of  $m_\nu = 0.2 \text{ eV}/c^2$  (90% C.L.) using electrons from the tritium beta-decay.

The beta-electrons decaying in the windowless gaseous tritium source (WGTS) are guided adiabatically to the spectrometers, where their energy is analyzed with a present filter width of 2.8 eV.

In order to maintain a stable column density (and therefore a stable luminosity) inside the 10 m long WGTS beam tube, a dedicated closed loop system is installed.

Tritium is pumped out at both ends of the WGTS, purified and re-injected with a throughput of 1.8 mbar-l/s into the middle of the WGTS beam tube resulting in a circulation.

In this poster, the results of the first KATRIN tritium measurement campaigns are shown evaluating the stability of the Loops parameters.

### Mini-abstract

The KATRIN Loop system allows the stable circulation of tritium during neutrino mass data taking.

### Experiment/Collaboration

KATRIN

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