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P1.052 **The Condensed Krypton Source for the KATRIN experiment**

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The *KA*rlsruhe *TRI*tium *N*eutrino experiment KATRIN aims for a neutrino mass measurement with a sensitivity of $m(\nu_e) < 200$ meV (90% C.L.) by high-resolution and high statistics spectroscopy of the tritium β-decay. One of the many challenges to reach this goal is the absolute calibration and stability of the energy scale over the course of the projected run time of 5 years.

One of the multiple systems in place to address the energy scale is a quench condensed Kr-83m conversion electron source. It is based on the metastable state of Kr-83 with a half-life of $T_{½} = 1.83$ h, which emits mono-energetic conversion electrons with energies of $E < 33$ keV. One of the strongest lines at $E_{K32} = 17824.23(50)$ eV is of special interest because of its vicinity to the tritium endpoint at $E = 18.6$ keV.

A sub-monolayer of gaseous Kr-83m is continuously frozen on a clean graphite (HOPG) substrate at $T \approx 25$K and can be moved into the KATRIN beam-line. In this way it is possible to cover the whole magnetic guiding field of the KATRIN experiment and precisely determine the position dependent analysing potential of the main spectrometer. This test is repeated during the regular maintenance breaks to check for long-term drifts and is compared to the different calibration methods.

A test setup of the condensed Krypton conversion electron source has been tested at the former Mainz MAC-E filter spectrometer, while the setup that will be used in the KATRIN beam-line is currently being set up at Münster University and will be moved to the KATRIN experiment this summer. This poster summarizes the results of the former test setup. Additionally it gives an overview of the current setup, first commissioning data obtained in Münster and the future implementation at the KATRIN experiment.