

## Laser Raman Spectroscopy for KATRIN

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The aim of the Karlsruhe Tritium Neutrino experiment - KATRIN - is the direct (model-independent) measurement of the mass of the electron anti-neutrino. For that purpose a windowless gaseous tritium source - WGTS - is used, with a tritium throughput of 40g/day. In order to reach the design sensitivity of  $0.2 \text{ eV}/c^2$  (90% C.L.) the key parameters of the tritium source, i.e. the gas inlet rate and the gas composition, have to be stabilized and monitored at the 0.2 % level ( $2\sigma$ ).

Any small change of the tritium gas composition will manifest itself in non-negligible effects on the KATRIN measurements; therefore, precise methods to specifically monitor the gas composition have to be implemented. Laser Raman Spectroscopy is the method of choice for the monitoring of the gas composition because it is a non-invasive and fast in-line measurement technique.

An overview of the hardware setup and the current status of the system will be given and the implications on KATRIN will be discussed. This work has been partially supported by funds of the DFG (SFB/Transregio 27 "Neutrinos and Beyond").

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