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Calibration Techniques used for the KATRIN Neutrino Mass Experiment JOSEPH FORMAGGIO, Massachusetts Institute of Technology, KATRIN COLLABORATION — Over the past decade, experiments studying neutrinos from atmospheric, solar, and reactor sources have shown conclusively that neutrinos change flavor and, as a consequence, have a small but finite mass. Yet, the scale of neutrino masses remains an open question that is of great importance for many areas of physics. The Karlsruhe Tritium Neutrino (KATRIN) experiment is the next generation tritium beta decay experiment with sub-eV sensitivity to make a direct, model independent measurement of the electron neutrino mass, with a projected sensitivity of 200 meV. This measurement requires a high level of stability in all spectrometer systems, including the source, the electromagnetic filter, and the detector, as well as a detailed measurement of the scattering cross sections of electrons on molecular tritium. We will give an overview of the some of the calibration techniques employed by the experiment necessary to attain its final sensitivity.

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