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An Overview of the Data Acquisition System in the KATRIN Experiment[1] DAVID PHILLIPS II, University of North Carolina at Chapel Hill and Triangle Universities Nuclear Laboratory, KATRIN COLLABORATION[2] — The Karlsruhe Tritium Neutrino (KATRIN) Experiment is a next generation tritium β-decay experiment designed to make a model-independent measurement of the ν_e-mass with an estimated sensitivity of 0.2 eV/c^2. This would represent an order of magnitude improvement in the ν_e-mass sensitivity compared to previous tritium beta-decay experiments. The basic function of the Data Acquisition System (DAQ) is to process and store signals from all detector modules within the KATRIN experimental setup. In order to reach the specified ν_e-mass sensitivity, the KATRIN DAQ must be able to process event rates over a range spanning a few mHz for ν_e-mass measurements to MHz for calibration measurements. A multi-user graphical Object-oriented Real-time Control and Acquisition (ORCA) interface serves as the software that is employed to readout the DAQ electronics. In this talk, the KATRIN DAQ electronics as well as the ORCA software interface will be discussed.

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[2]Talk on behalf of the KATRIN Collaboration

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