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Data Acquisition Visualization Development for the MAJORANA DEMONSTRATOR[1] LAURA WENDLANDT, Grove City College, MARK HOWE, JOHN WILKERSON, The University of North Carolina at Chapel Hill, MAJORANA COLLABORATION — The MAJORANA Project is building an array of germanium detectors with very low backgrounds in order to search for neutrinoless double-beta decay, a rare process that, if detected, would give us information about neutrinos. This decay would prove that neutrinos are their own anti-particles, would show that lepton number is not conserved, and would help determine absolute neutrino mass. An object-oriented, data acquisition software program known as ORCA (Object-oriented Real-time Control and Acquisition) will be used to collect data from the array. This paper describes the implementation of computer visualizations for detector calibrations, as well as tools for more general computer modeling in ORCA. Specifically, it details software that converts a CAD file to OpenGL, which can be used in ORCA. This paper also contains information about using a barium-133 source to take measurements from various locations around the detector, to better understand how data varies with detector crystal orientation.

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