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Development of Data Quality and Analysis Tools for the MAJO-RANA DEMONSTRATOR[1] JAMES PARKES, The University of Alabama, ANNA REINE, JOHN WILKERSON, University of North Carolina at Chapel Hill and Triangle Universities Nuclear Laboratory, MAJORANA COLLABORA-TION COLLABORATION — The MAJORANA DEMONSTRATOR is a high-purity germanium-76 (HPGe) detector array consisting of p-type point contact detectors operating 4850 ft below ground in the Sanford Underground Research Facility in South Dakota. The DEMONSTRATOR is designed to search for neutrinoless double-beta decay while determining the feasibility of the construction of a future tonne-scale modular detector. The purpose of this work was to develop data analysis tools for data validation and time coincidences, and to make a search for alpha-decay background related coincidences. First, a program was developed to track changes in the bias voltage applied to individual HPGe detectors. This tool allows the identification of any runs where the bias on detectors has changed, flagging partially biased detectors to be excluded from the physics analyses. Next, an analysis tool was developed to search for possible delayed coincidences associated with the beta-alpha and alpha-alpha radioactive decays in the U-238 and Th-232 chains. The initial analysis using this tool did not find any candidates, indicating very low alpha related backgrounds.

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