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Calibration of the MoNA and LISA Arrays for the LISA Commissioning Experiment<sup>1</sup> A. GROVOM, J. KWIATKOWSKI, W.F. ROGERS, Westmont College, MONA COLLABORATION — The new LISA (the Large-area multi-Institutional Scintillator Array) neutron detector array, designed to be used in conjunction with MoNA (Modular Neutron Array) at the NSCL was recently commissioned in an experiment designed to investigate excited states of neutronrich Oxygen isotopes near the neutron drip-line. In order for the trajectories of neutrons arising from decay to be determined with sufficient precision to allow reconstruction of the invariant mass of the decaying system, all 288 scintillator bars must be precisely position-calibrated and time-synchronized to within a few tenths of a nanosecond, and the time origin for neutron time-of-flight determination must coincide precisely with the secondary beam particle/target interaction. The former was accomplished using cosmic muons passing through the array, and the latter using detection of gamma-rays produced at the target in each of the 18 layers of the MoNA-LISA array. Several Root C++ macros were developed in order to produce these calibrations. Results for the LISA commissioning run experiment will be presented.

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