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Spectroscopy of Heavy Nuclei with GAMMASPHERE K. MORAN, S. HOTA, S. LAKSHMI, P. CHOWDHURY, University of Massachusetts Lowell — We report on analysis of data from a recent experiment carried out using the ATLAS heavy-ion accelerator facility at Argonne National Laboratory. A beam of ^{208}Pb was incident on a ^{244}Pu target evaporated on a ^{197}Au backing. The target and projectile nuclei were mutually excited to high-energy states via inelastic collisions. The GAMMASPHERE detector array, made up of 108 Compton-suppressed germanium detectors positioned in a spherical geometry around the target, was used to detect the resulting gamma radiation as the nuclei decayed to ground state. The data from the experiment was then sorted into a three-dimensional γ-γ-γ "cube," which was analyzed using gating techniques in Radware software to investigate the decay structure of the excited nuclei produced by the experiment. A two-dimensional "matrix" was also created using an early-delayed technique, allowing for short-lived isomers produced in-beam to be observed. This data was analyzed using time gates to measure half-lives of observable isomers. Results will be presented and discussed.

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