

Recent results obtained with the Argonne Gas-Filled Analyzer: observation of the ground-state rotational band in the highly fissile nucleus ^{250}No

Friday, July 26, 2024 9:25 AM (20 minutes)

The island of deformed nuclei around the $Z=100$, $N=152$ deformed shell gaps serves a stringent testing ground for nuclear models aiming to describe super-heavy nuclei. In fact, without the presence of shell corrections, these nuclei would undergo instantaneous fission. Nuclei in this region have been extensively studied using decay and in-beam spectroscopic methods. During the presentation, recent experiments conducted with the Argonne Gas-Filled Analyzer (AGFA) both in stand-alone mode and coupled to the Gammasphere γ -ray detector array will be reviewed. Notably, the talk will cover the first observation of the ground-state rotational band in the highly fissile nucleus ^{250}No , which fissions rapidly with a half-life of only 4 μs . This nucleus presents a unique opportunity to investigate the competition between γ -ray decay and fission processes. Additionally, the results of a search for short-lived K-isomers in proton-rich Lr isotopes will be presented. Finally, plans for experimental program with AGFA will be outlined.

This material is based upon work supported by the U.S Department of Energy, Office of Science, Office of Nuclear Physics, under contract number DE-AC02-06CH11357. This research used resources of ANL's ATLAS facility, which is a DOE Office of Science User Facility.

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Session Classification: Heavy Nuclei and Super Heavy Elements - Part 2