



Contribution ID: 194

Type: Oral

Structure of neutron-rich Ge and Se isotopes

Thursday, 16 May 2019 17:30 (20 minutes)

Indication of triaxiality in ^{78}Ge has recently been presented from a low-energy sequence of strictly $\Delta J = 1$ transitions [1]. Neutron-rich Ge and Se isotopes were studied using the Gammasphere Ge-detector array at ANL. Beams of ^{76}Ge and ^{82}Se were incident upon thick ^{238}U and ^{208}Pb targets in deep-inelastic reactions. New data in $^{80,82}\text{Se}$ will be presented to clarify β -decay studies [2,3], and angular-correlation measurements are used to strengthen spin and parity assignments in some cases.

These observations can provide insights into the single-particle and collective properties of these neutron-rich nuclei. NuShellX calculations for the $N = 46$ and $N = 48$ Ge and Se isotones will be shown to test the $p_{3/2}f_{5/2}p_{1/2}g_{9/2}$ proton and neutron subspace[4]. Additionally, new insight into the structure of isotonic nuclei will be discussed.

This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, under contract Nos. DE-AC02-06CH11357 (ANL) and DE-AC02-98CH10886 (BNL), and grants No. DE-FG02-94ER40834 (Maryland). This research used resources of ANL's ATLAS facility, which is a DOE Office of Science User Facility.

[1] A. M. Forney, W. B. Walters, C. J. Chiara, R. V. F. Janssens, A. D. Ayangeakaa, J. Sethi, J. Harker, M. Alcorta, M. P. Carpenter, G. G \ddot{u} rdal, C. R. Hoffman, B. P. Kay, F. G. Kondev, T. Lauritsen, C. J. Lister, E. A. McCutchan, A. M. Rogers, D. Seweryniak, I. Stefanescu, and S. Zhu. Submitted (2018).

[2] J.V. Kratz, H. Franz, N. Kaffrell, G. Hermann. Nucl. Phys. A 250 13-37 (1975).

[3] H. Gausemel, K. A. Mezilev, B. Fogelberg, P. Hoff, H. Mach, and E. Ramstr \ddot{o} m. Phys. Rev. C 70, 037301 (2004).

[4] B.A. Brown and W.D.M. Rae. Nucl. Data Sheets 120 Supplement C, 115-118 (2014).

Primary author: Dr FORNEY, Anne Marie (University of Maryland and College Park)

Presenter: Dr FORNEY, Anne Marie (University of Maryland and College Park)

Session Classification: Session XXII (Parallel Session)