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New Results in A≃135 Pm Nuclei J. PFOHL, *Florida State University*, M.A. RILEY, *FSU*, D.G. SARANTITES, *Washington University*, R.K. SHELINE, *FSU*, D.R. LAFOSSE, *Wash U.*, M. DEVLIN, *Wash U.*, N.J. O'BRIEN, *University of York*, D.E. ARCHER, *LLNL*, P. FALLON, *LBNL*, I.M. HIBBERT, *U. York*, D.T. JOSS, *University of Liverpool*, P.J. NOLAN, *U. Liverpool*, E.S. PAUL, *U. Liverpool*, J. SIMPSON, *Daresbury Laboratory*, R. WADSWORTH, *U. York*
— An experiment was carried out using the ^{35}Cl + ^{105}Pd reaction at 180 MeV using Gammasphere in conjunction with the Microball. In this experiment a wide range of different nuclei near Z = 60 were populated via xp, xα and neutron emission. The wonderful selection capabilities of the Microball allowed the clean separation of the different charged particle channels. The separation of all the charged particle channels yielded 15 different nuclei from Z=58 Ce to Z=62 Sm and populated over 25 superdeformed bands. An experiment of this magnitude allows individual orbitals to be tracked across N and Z. Furthermore some of the global systematics regarding signature partners, dynamic moments of inertia ($\Im^{(2)}$), etc., in this mass region between ^{129}Ce and ^{136}Sm can be revealed and better understood. Analysis of the highly-deformed (HD) partner bands in the A≃135 Pm and Pr nuclei suggests that the HD bands in ^{136}Pm do not involve the $\pi g_{9/2}[404]9/2$ orbital. A comprehensive level scheme for ^{135}Pm and significant additions to the ^{133}Pm level scheme will be presented and discussed.

Jeff Pfohl
pfohl@nucalf.physics.fsu.edu
Florida State University

[X] Prefer Oral Session
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