Abstract Submitted
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Single particle structure of ^{209,210}Pb and ^{206}Hg investigated through the deep inelastic reaction ^{136}Xe + ^{208}Pb[1] C.R. HAMILL, Point Loma Nazarene University, E.A. MCCUTCHAN, A.A. SONZOGNI, Brookhaven National Laboratory, J.S. BARRETT, W. LOVELAND, R. YANEZ, Oregon State University, S. ZHU, A.D. AYANGEAKAA, M.P. CARPENTER, J.P. GREENE, R.V.F. JANSSENS, T. LAURITSEN, Argonne National Laboratory, C.J. CHIARA, J.L. HARKER, W.B. WALTERS, University of Maryland, A.B. BROWN, Michigan State University — The region of nuclei around ^{208}Pb is rich in information relevant to nuclear structure and astrophysics, yet is relatively unexplored. To access these nuclei, a deep inelastic reaction was performed at Argonne National Laboratory's Gammasphere, where a ^{136}Xe beam was incident on a ^{208}Pb target. Our analysis focused on ^{209}Pb, ^{210}Pb and ^{206}Hg, and our findings of new relevant information include energy level schemes, angular correlations resulting in level spins and gamma-ray multipolarities, and half-lives of isomeric states. Known transitions in these nuclei were observed and confirmed and coincidence techniques were used to expand upon this data to discover new excited states. The results from this study were compared to theoretical shell model calculations and states interpreted in terms of valence nucleon excitation or coupling of the extra neutron(s) or proton holes to the double magic (Z=82, N=126) ^{208}Pb core. Results will be presented.

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