Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

High-spin states in ^{135}Cs N. FOTIADES, LANL, J.A. CIZEWSKI, Rutgers Univ., R. KRÜCKEN, T.U.München, R.M. CLARK, P. FALLON, I.Y. LEE, A.O. MACCHIAVELLI, LBNL, J.A. BECKER, W. YOUNES, LLNL — High-spin states in ^{135}Cs have been studied following the fission of the ^{226}Th compound nucleus formed in a fusion-evaporation reaction (^{18}O at 91 MeV on ^{208}Pb). The Gammasphere array was used to detect γ-ray coincidences. A sequence of transitions was observed in coincidence with the previously known 786.8-keV, $11/2^+ \rightarrow 7/2^+$ transition from the 786.8-keV level of ^{135}Cs extending the level scheme up to spin 23/2 and $\sim$3.3 MeV excitation energy. The assignment of this sequence to ^{135}Cs is also supported by coincidences with known transitions in the complementary fragments. The observed experimental states are compared with states in the neighboring ^{137}Cs nucleus, as well as with the states in the Z=54 core of ^{134}Xe. The coupling of the odd proton occupying the $g_{7/2}$ orbital to the yrast states in ^{134}Xe can account for the first excited states of ^{135}Cs. This work was supported by the U.S. Department of Energy under Contracts No. DE-AC52-06NA25396 (LANL), DE-AC52-07NA27344 (LLNL) and AC03-76SF00098 (LBNL) and by the National Science Foundation (Rutgers).

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Date submitted: 01 Jul 2008 Electronic form version 1.4