

Abstract Submitted  
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**K isomers in Cm isotopes via deep-inelastic and transfer reactions**<sup>1</sup> U.S. TANDEL, P. CHOWDHURY, S.K. TANDEL, A.J. KNOX, C.M. WILSON, University of Massachusetts Lowell, I. AHMAD, M.P. CARPENTER, J.P. GREENE, S. GROS, R.V.F. JANSSENS, T.L. KHOO, F.G. KONDEV, T. LAURITSEN, C.J. LISTER, D. PETERSON, A. ROBINSON, D. SEWERYNIAK, X. WANG, S. ZHU, Argonne National Laboratory — K isomers in  $^{246}\text{Cm}$  and  $^{248}\text{Cm}$  ( $Z = 96$ ) were populated via deep-inelastic and transfer reactions using a  $^{209}\text{Bi}$  beam at  $\sim 15\%$  above the Coulomb barrier, incident on a long-lived  $^{248}\text{Cm}$  target. This reaction mechanism has been employed for the first time in trans-plutonium nuclei to study high-K isomers. The out-of-beam data were collected using Gammasphere in different time regimes ranging from 80 microseconds up to 8 seconds to adjust to different isomer half-lives. The half-life of a known  $8^-$  isomeric state in  $^{246}\text{Cm}$  has been measured to be  $\sim 1$  s. A new high-K isomer with  $K^\pi = (8^-)$  has also been discovered in  $^{248}\text{Cm}$ . These  $K^\pi = 8^-$  isomers have the same underlying neutron  $[624]7/2 \times [734]9/2$  configuration as is observed in the isotones  $^{250}\text{Fm}$  and  $^{252}\text{No}$ . These new data on high-K isomers will add to the limited knowledge of single-particle and pair-gap energies in heavy actinides.

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