

Abstract Submitted
for the DNP10 Meeting of
The American Physical Society

In-beam and decay properties of ^{180}Tl C. NAIR, C.A. COPOS, M.P. CARPENTER, F.G. KONDEV, S. ZHU, I. AHMAD, B.B. BACK, P.F. BERTONE, C.J. CHIARA, J.P. GREENE, G. GURDAL, G. HENNING, C.R. HOFFMAN, R.V.F. JANSSENS, B.P. KAY, T.L. KHOO, T. LAURITSEN, C.J. LISTER, E.A. MCCUTCHAN, A.M. ROGERS, D. SEWERYNIAK, M. SMITH, Argonne National Laboratory, D. HARTLEY, US Naval Academy — Nuclear structure studies of the proton-rich nucleus ^{180}Tl were carried out in order to investigate the electron-capture delayed fission, which is a rare decay mode. This nucleus was produced with the symmetric $^{92}\text{Mo}(^{89}\text{Y}, 1n)$ reaction using a 375 MeV beam delivered by the ATLAS accelerator at Argonne National Laboratory. Prompt γ rays were detected with the Gammasphere array. The evaporation residues were transported through the Fragment Mass Analyzer (FMA) and dispersed according to their mass-to-charge (m/q) ratio. A position-sensitive parallel grid avalanche counter (PGAC) at the FMA focal plane provided the m/q information and the time of arrival of the recoils. The recoils were subsequently implanted into a double-sided silicon strip detector (DSSD) located behind the PGAC, where fission and α decays were measured. The DSSD was surrounded by an array of four Ge Clover detectors, which were used to measure γ rays following electron-capture decay of ^{180}Tl . Results from these studies will be presented.

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Date submitted: 30 Jun 2010

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