Abstract Submitted
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In-beam and decay properties of the proton-rich nucleus ^{179}Tl[1] C. NAIR, F.G. KONDEV, M.P. CARPENTER, S. ZHU, I. AHMAD, B.B. BACK, P.F. BERTONE, C.J. CHIARA, C.A. COPOS, 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. ROGERS, D. SEWERYNIAK, M.L. SMITH, Argonne National Laboratory, D.J. HARTLEY, U S Naval Academy — Nuclear structure studies of proton-rich Tl nuclei are important in order to elucidate their shape evolution with neutron number as well as to better interpret the rare decay modes in this region, such as electron-capture delayed fission. The ^{179}Tl nucleus was produced via the symmetric ^{92}Mo(^{89}Y, 2n) reaction using a 375 MeV beam delivered by the ATLAS accelerator at Argonne National Laboratory. The recoiling nuclei were implanted into a double-sided silicon strip detector, located at the focal plane of the Argonne Fragment Mass Analyzer. The Recoil Decay Tagging technique in conjunction with the Gammasphere spectrometer helped identify the decays of the ^{179}Tl ground state ($I^{\pi}=1/2^{+}$) and a shorter-lived isomeric state ($I^{\pi}=11/2^{-}$). The observed α-decay correlations allowed an unambiguous identification of the previously unassigned ground state of the daughter nuclide ^{175}Au.

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