Abstract Submitted
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Particle-γ Spectroscopy of ^{13}C(^{134}Te,^{12}C)^{135}Te and ^{9}Be(^{134}Te,^{8}Be)^{135}Te: One-Neutron Transfer Study of Z=52, N=83 and the $\nu i_{13/2}$ State[1] J.M. ALLMOND, D.C. RADFORD, C. BAKTASH, J.R. BEENE, A. GALINDO-URIBARRI, P.A. HAUSLADEN, J.F. LIANG, J. PAVAN, D. SHAPIRA, R.L. VARNER, C.-H. YU, C.R. BINGHAM, M. DANCHEV, J.P. URREGO-BLANCO, L. CHATURVEDI, D. FONG, J.K. HWANG, W. KROLAS, ORNL — A HPGe and CsI array (CLARION+HYBALL @ HRIBF) is used to study the ^{13}C(^{134}Te,^{12}C)^{135}Te and ^{9}Be(^{134}Te,^{8}Be)^{135}Te direct reactions by particle-γ coincidence measurements. The particle-γ technique has several advantages (particularly in inverse kinematics) which include the following: can determine decay paths by particle-γ-γ, can determine high-precision level energies, can determine multipolarities of transitions by particle-γ angular correlations, and can infer cross sections. The use of one-neutron transfer into Z=52, N=83 is employed to gain selectivity to the single-particle neutron states outside of the N=82 shell closure. Results are presented for ^{135}Te(Z=52,N=83); particularly, results are presented for the new $\nu i_{13/2}$ single-particle state at 2107 keV.

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