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Investigation of low-spin states in Sm nuclei following (p,t) reactions K. GELL, C.W. BEAUSANG, A. SIMON, P. HUMBY, N. WATWOOD, University of Richmond — The low spin structures of ^{152}Sm nuclei were studied following the ^{154}Sm(p,t) reactions. The 25 MeV proton beam was provided by the K150 Cyclotron at Texas A&M University. The Silicon Telescope Array for Reaction Studies (STARS) was utilized to detect outgoing charged particles, providing for both reaction selectivity and excitation energy in the residual nucleus. The efficiency of the telescope was about 20% for outgoing charged particles. The clover Ge detectors of the LiTeR (Livermore Texas Richmond) array measured coincident gamma rays with an efficiency of $\sim$ 5% at 200 keV and $\sim$ 2% at 1332 keV. The angular coverage of the STARS silicon detectors was $\sim$ 30-60 degrees allowing a measurement of the angular distribution of tritons emitted from the ^{154}Sm nucleus. These were compared to calculated DWBA curves order to make spin assignments for levels directly populated by the reaction. The next step in this research is to begin analysis of angular distributions of the continuum region of higher excitation energies in order to determine a distribution of L-transfer values.

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