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Cross-sections for populating excited states in $^{150-153}$Sm via the (p,d) and (p,t) reactions[1] P. HUMBY, A. SIMON, C.W. BEAUSANG, K. GELL, T. TARLOW, G. VYAS, University of Richmond, T.J. ROSS, University of Kentucky, R.O. HUGHES, J.T. BURKE, R.J. CASPERSON, J. KOGLIN, Lawrence Livermore National Laboratory, S. OTA, Rutgers University, J.M. ALLMOND, Oak Ridge National Laboratory, M. MCCLESKEY, E. MCCLESKEY, A. SAASTAMOINEN, R. CHYZH, M. DAG, Texas A&M University — Light ion transfer reactions were used to populate low/medium spin states in $^{150-154}$Sm via the (p,p$'\gamma$), (p,dγ) and (p,tγ) reactions. The 25 MeV proton beam, with an average current of 1 nA, was provided by the K-150 Cyclotron at the Cyclotron Institute of Texas A&M University. The outgoing charged particles and coincident gamma-rays were detected using the STARLiTeR arrays. STARs (Silicon Telescope Array for Reaction studies), a highly segmented ΔE-E silicon telescope, provides particle identification as well as the energies, times and angular distributions of the protons, deuterons and tritons in the exit channels. LiTeR (Livermore Texas Richmond array), an array of six BGO shielded HPGe clover detectors, records the energy, time and angular distribution of the coincident gamma rays, providing excellent selectivity of the states of interest. Preliminary results for the cross-sections for direct population of states in $^{150-153}$Sm will be presented.

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