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Using the 154Sm(p,d) reaction to extend the level scheme of 153Sm to the continuum region EMMA WILSON, CORNELIUS BEAUSANG, PETER HUMBY, ANNA SIMON, Univ of Richmond, TIMOTHY ROSS, Univ of Kentucky, RICHARD HUGHES, JAMES BURKE, ROBERT CASPERSON, JOHNATHON KOGLIN, SHUYA OTA, Lawrence Livermore National Laboratory, JAMES ALLMOND, Oak Ridge National Laboratory, MATTHEW MCCLESKEY, ELLEN MCCLESKEY, ANTTI SAASTAMOINEN, ROMAN CHYZH, Texas A&M Univ, KRISTEN GELL, TOM TARLOW, GARGI VYAS, Univ of Richmond, STARLITE COLLABORATION — Following an experiment performed at the Cyclotron Institute of Texas A&M University, the level scheme of ^{153}Sm is in the process of being extended. A beam of protons accelerated to 25 MeV impinged on an isotopically enriched ^{154}Sm target, inducing a (p,d) reaction, thereby producing energetically excited ^{153}Sm reaction products. The resulting γ-rays and deuterons were detected by the STARLiTe array, which consists of six Compton-suppressed HPGe gamma-ray detectors, and a ΔE-E Si telescope for charged particle identification. In the ongoing analysis of these data, the identification of new γ-rays has been possible. The deuteron spectrum will be used to identify high-lying continuum states, and angular momentum transfer values will be assigned using angular distributions and comparison with DWBA calculations. This work was partly supported by the US DofE under grant numbers DE-NA0001801, DE-FG02-05ER41379(UofR); DE-AC52-07NTJKTG(LLNL).

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