Abstract Submitted
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New Measurement of the ^{5}H Ground State[1] DANIEL G. MCNEEL, A.H. WUOSMAA, Univ of Connecticut, S. BEDOOR, A.S. NEWTON, Western Michigan Univ, K.W. BROWN, R.J. CHARITY, L.G. SOBOTKA, Washington Univ - St. Louis, W.W. BUHRO, Z. CHAJECKI, W.G. LYNCH, J. MANFREDI, R.H. SHOWALTER, M.B. TSANG, J.R. WINKLEBAUER, MSU/NSCL, S.T. MARLEY, Univ of Notre Dame, D.V. SHETTY, Grand Valley State Univ — We have studied the ground state of ^{5}H using the ^{6}He(d,^{3}He)^{5}H reaction in inverse kinematics. Existing data for ^{5}H are in conflict with each other and with many theoretical predictions. This measurement provides a clear evidence for the ^{5}H ground state, and the previously unreported ^{6}He(d,t)^{5}He$_{g.s.}$ reaction is also observed. A ^{6}He beam at 55 MeV/A produced at the National Superconducting Cyclotron Laboratory at Michigan State University bombarded a 1.9 mg/cm^2 $(CD_2)_n$ target. The reaction products were detected with HiRA (the High Resolution Array). The ^{3}He and ^{3}H particles from the ^{6}He(d,^{3}He/^{3}H)^{5}H/^{5}He reactions were detected in coincidence with the decay products of the unstable ^{5}H and ^{5}He nuclei, providing signatures for the transitions of interest. The properties of the ^{5}He ground state provide information about the calibration and response of the apparatus. Details of the measurement, and a comparison of the data with earlier results and theoretical calculations, will be presented.

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Daniel McNeel
Univ of Connecticut - Storrs

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