Abstract Submitted
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Examining Shape Co-existence in 116Sn via the Beta Decay of 116In J. PORE, C. ANDREOIU, D. CROSS, R. ASHLEY, A. CHESTER, K. STAROSTA, SFU, G.C. BALL, P. BENDER, R. CHURCHMAN, P. VOSS, Z. WANG, A.B. GARNSWORTHY, B. HANDINIA, B. JIGMEDDORJ, TRIUMF, P.E. GARRETT, G. DEMAND, A.T. LAFFOLEY, A. LIBLONG, R. DUNLOP, C.E. SVENSSON, A.D. VALERA, A.D. VARELA, University of Guelph, R. KANUNGO, St. Mary's University, J.L. WOODS, Georgia Institute of Technology, S.W. YATES, University of Kentucky — The stable even-even tin nuclei have a closed proton shell at Z=50 and occupy the mid-shell region of neutrons, which has led to interest in them, and they have emerged as good candidates for shape co-existence studies. The 116Sn nucleus, which sits exactly at the mid-shell (N=66), has been extensively studied in the past through fusion evaporation, coulomb excitation, neutron scattering and beta decay experiments, which has revealed an extensive level scheme and evidence for shape co-existence. However, with our advanced detection set-up and good beam intensity we are able to see additional weak transitions, some of which could yield evidence for another deformed excited state at 2545 keV.

The experiment was conducted at TRIUMF, Canada's National Laboratory for Nuclear and Particle Physics. A beam of 116In was used to populate states in 116Sn via beta decay. The resulting gamma rays were observed with the 8pi array consisting of 20 high-purity germanium detectors coupled with a suite of ancillary detectors. We will present the enhanced level scheme constructed from this experiment.

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