Abstract Submitted
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Investigating the first-forbidden beta-decay transitions of 92Rb and 96Y[1] E.C. GOOD, S.M. MARLEY, Louisiana State University, N.D. SCIELZO, K. KOLOS, S. PADGETT, Lawrence Livermore National Laboratory, E.K.M. HECKMAIER, UC Irvine, M.T. BURKEY, M.P. CARPENTER, J.A. CLARK, P. COPP, B. DIGIOVINE, G. SAVARD, S. ZHU, Argonne National Laboratory, J. MUNSON, UC Berkeley, BPT COLLABORATION — Nuclear reactors produce the highest flux of man-made antineutrinos from the beta decay of the fission products. The antineutrino flux can be measured using inverse beta decay reactions, and a deficit of roughly 5% is found when comparing to predictions which has been deemed the reactor antineutrino anomaly. The top two contributors to the detected antineutrino flux are ^{92}Rb and ^{96}Y, which both have first-forbidden 0- to 0+ transitions to the ground state that account for the majority of their intensities. These transitions are expected to have energy spectra closely resembling that of an allowed transition. However, currently there is no data to verify that assumption. To address this issue, we have studied the decays of ^{92}Rb and ^{96}Y using a set of silicon, plastic scintillator, and HPGe detectors at the CAlifornium Rare Isotope Breeder Upgrade (CARIBU) facility at Argonne National Laboratory. I will discuss the analysis of this experiment and its influence on understanding the shapes of these first-forbidden 0- to 0+ transitions.

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