Abstract Submitted
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Partitioning the double β decay of ^{116}Cd: Electron-capture on ^{116}In[1] C. WREDE, CENPA, U. Washington, NSCL, Michigan State U., I. AHMAD, Argonne Nat. Lab., A. ALGORA, IFIC, CSIC-Univ. Valencia, V.-V. ELOMAA, T. ERONEN, U. Jyvälskyä, A. GARCÍA, CENPA, U. Washington, J. HAKALA, V.S. KOLHINEN, I.D. MOORE, H. PENTTILÄ, M. REPONEN, J. RISSANEN, A. SAASTAMOINEN, U. Jyvälskyä, S. SJUE, TRIUMF, H.E. SWANSON, CENPA, U. Washington, J. ÄYSTÖ, U. Jyvälskyä — ^{116}Cd undergoes double β decay to ^{116}Sn. This rare process may be described by virtual transitions through states in the intermediate nucleus ^{116}In and there could be a major contribution from the ^{116}In ground state. It is, therefore, valuable to determine the matrix elements for the decays of ^{116}In to ^{116}Cd and ^{116}Sn in order to provide benchmarks for nuclear models that are used to calculate double β decay matrix elements. We have experimentally constrained the small decay branch for electron capture on the ground state of ^{116}In. Samples of ^{116}In were produced using the IGISOL facility at the University of Jyväskylä, isobarically purified using the JYFLTRAP double-Penning trap, and delivered to a counting station consisting of a high-purity Ge x-ray detector and a 4π scintillator to discriminate β-decay events. Our result sheds light on discrepancies between past values for the Gamow-Teller strength obtained via electron capture and charge-exchange, providing a more consistent benchmark in the $A = 116$ system for nuclear models of double β decay.

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