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Double-β decay nuclear structure via electron capture on ^{116}In C. WREDE, Michigan State U., NSCL, and U. of Washington, S.K.L. SJUE, LANL and TRIUMF, A. A. GARCÍA, H.E. SWANSON, U. of Washington, I. AHMAD, ANL, A. ALGORA, IFIC (CSIC-U. Valencia), V.-V. ELOMAA, T. ERONEN, J. HAKALA, A. JOKINEN, V.S. KOLHINEN, I.D. MOORE, H. PENTTILÄ, M. REPONEN, J. RISSANEN, A. SAASTAMOINEN, J. ÄYSTÖ, U. of Jyväskylä — The small electron-capture decay branch of ^{116}In has been measured using Penning trap assisted decay spectroscopy. The deduced Gamow-Teller transition strength helps to resolve longstanding differences between scattered charge-exchange reaction values and a previous electron-capture decay value that was less statistically significant than the present one. We argue that this transition can now be used as a reliable benchmark for nuclear-structure calculations of the matrix element for the neutrinoless double-β decay of ^{116}Cd and other nuclides.

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