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Mirror symmetry of Gamow-Teller transitions by the comparison of 37 Cl $({}^{3}$ He,t $){}^{37}$ Ar and 37 Ca $(\beta_{+}){}^{37}$ K Y. SHIMBARA, B.A. BROWN, NSCL, Michigan State University, Y. FUJITA, T. ADACHI, M. YOSHIFUKU, Osaka University, G.P.A. BERG, KVI, H. FUJIMURA, Kyoto University, H. FUJITA, iThemba Labs, K. FUJITA, K. HATANAKA, K. KAWASE, Y. KITAMURA, N. NAKANISHI, N. SAKAMOTO, Y. SAKEMI, Y. SHIMIZU, Y. TAMESHIGE, M. YOSOI, RCNP, Osaka University, K. HARA, JAERI, K.Y. HARA, Konan University, J. KAMIYA, KEK, K. KATORI, RIKEN, T. KAWABATA, CNS, University of Tokyo, M. UCHIDA, Tokyo Institute of Technology, T. WAKASA, Kyusyu University — Under the assumption of isospin symmetry, the distributions of Gamow-Teller (GT) transition strengths B(GT) are identical between ${}^{37}\text{Cl} \rightarrow {}^{37}\text{Ar}$ and ${}^{37}\text{Ca} \rightarrow$ 37 K transitions. The differences between the empirical B(GT) distributions from ${}^{37}\text{Cl}(p,n){}^{37}\text{Al}$ and ${}^{37}\text{Ca}\ \beta$ -decay caused a great deal of controversy. One of problems in the (p, n) experiments was the rather poor resolution. In order to study the individual transitions for ${}^{37}\text{Cl} \rightarrow {}^{37}\text{Ar}$, we performed a high-resolution, 30 keV (FWHM), ${}^{37}\text{Cl}({}^{3}\text{He},t){}^{37}\text{Ar}$ experiment at 140 MeV/u ${}^{3}\text{He}$ beam. The B(GT) distribution was extracted from the differential cross sections and compared with the ³⁷Ca β -decay data. Overall, they had similar distributions. However, the fine structures were not necessary consistent.

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