

Abstract Submitted
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Revalidation of the Isobaric Multiplet Mass Equation for the A=20 quintet¹ BRENT GLASSMAN, MSU/NSCL, D. PEREZ-LOUREIRO, NSCL, C. WREDE, MSU/NSCL, J. ALLEN, D. BARDYAN, M. BENNETT, Notre Dame University, A. BROWN, MSU/NSCL, K. CHIPPS, M. FEBBRARO, ORNL/UT knoxville, CATHLEEN FRY, MSU/NSCL, O. HALL, M. HALL, Notre Dame University, S. LIDDICK, MSU/NSCL, P. O'MALLEY, Notre Dame University, W. ONG, MSU/NSCL, S. PAIN, ORNL, S. SCHWARTZ, MSU/NSCL, P. SHIDLING, Texas AM, H. SIMS, University of Surrey, P. THOMPSON, ORNL/UT knoxville, E. ZHANG, MSU/NSCL — An unexpected breakdown of the Isobaric Multiplet Mass Equation (IMME) for the A=20, T=2 quintet was recently reported based on a precise measurement of the ²⁰Mg mass and adopted data on the other members. The adopted value for ²⁰Na presented the greatest deviation from the IMME fit and was based on relatively imprecise beta delayed proton decay measurements. We used the superallowed 0⁺ to 0⁺ beta decay of ²⁰Mg to feed the lowest T=2 state in ²⁰Na, and the high purity germanium detector array SeGA to detect its gamma-ray de-excitation for the first time. Using the gamma-ray energies, we were able to precisely measure the excitation energy to be 6498.4 0.2_{stat} 0.4_{sys} keV. By incorporating this newly measured value we find that the IMME is revalidated.

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