Abstract Submitted
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Revalidation of the Isobaric Multiplet Mass Equation for the A=20 quintet[1] 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 ^{20}Mg 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 ^{20}Mg to feed the lowest T=2 state in ^{20}Na, 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_{syst} keV. By incorporating this newly measured value we find that the IMME is revalidated.

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