Abstract Submitted
for the APR20 Meeting of
The American Physical Society

First Penning trap mass measurement of ^{36}Ca[1] JASON SURBROOK, Michigan State University, National Superconducting Cyclotron Laboratory, GEORG BOLLEN, Michigan State University, Facility for Rare Isotope Beams, MAXIME BRODEUR, University of Notre Dame, ALEC HAMAKER, Michigan State University, National Superconducting Cyclotron Laboratory, ERICH LEISTENSCHNEIDER, DAVID PEREZ-LOUREIRO, National Superconducting Cyclotron Laboratory, DANIEL PUENTES, CATHERINE NICOLOFF, Michigan State University, National Superconducting Cyclotron Laboratory, MATTHEW REDSHAW, Central Michigan University, RYAN RINGLE, STEFAN SCHWARZ, CHANDANA SUMITHRARACHCHI, National Superconducting Cyclotron Laboratory, ADRIAN VALVERDE, Argonne National Laboratory, ANTONIO VILLARI, Facility for Rare Isotope Beams, CHRISTOPHER WREDE, ISAAC YANDOW, Michigan State University, National Superconducting Cyclotron Laboratory — Isospin symmetry is an approximate symmetry between hadrons and can be useful in the description of atomic nuclei, especially in the prediction of atomic mass with the isobaric multiplet mass equation (IMME). Isobaric quintets provide the best test of the IMME and can identify higher order corrections suggestive of isospin symmetry breaking effects in the nuclear Hamiltonian. Only two quintets have all five members ground state masses measured to high-precision by Penning trap mass spectrometry. We present the first Penning trap measurement of neutron-deficient ^{36}Ca, marking the completion of the $A = 36$ quintet. A beam of ^{36}Ca was produced by projectile fragmentation at the National Superconducting Cyclotron Laboratory. The beam was stopped and the mass of atomic $^{36}Ca^{+}$ and $^{36}Ca^{2+}$ measured by the Time of Flight - Ion Cyclotron Resonance method in the LEBIT Penning trap. The measurement is considered with evaluated nuclear data to update the IMME and search for isospin symmetry breaking effects for $A = 36$.

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[1]This work was conducted with the support of Michigan State University, the National Science Foundation under PHY-1565546, PHY-1713857, and PHY-1913554, and the U.S. Department of Energy, Office of Science under DE-SC0015927.

Date submitted: 18 Jan 2020 Electronic form version 1.4