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Improved Mass Measurements of Nuclei Around $N = Z = 34$ and The First High Precision Mass Measurement of $^{70}\text{mBr}$\textsuperscript{1} J. SA-VORY, C. BACHELET, M. BLOCK, G. BOLLEN, M. FACINA, C.M. FOLDEN III, G. GUENAUT, E. KWAN, A.A. KWIAKOWSKI, D.J. MORRISSEY, G.K. PANG, A. PRINKE, R. RINGLE, H. SCHATZ, S. SCHWARZ, P. SCHURY, C.S. SUMITHRARACHCHI, National Superconducting Cyclotron Laboratory, Michigan State University, Michigan — Mass measurements of $N = Z$ nuclei are important for the study of symmetries in nuclear structure, modeling of element synthesis in the rp-process and fundamental interactions tests. Heavy $N = Z$ are located close to or even beyond the proton drip line. The Low Energy Beam and Ion Trap (LEBIT) facility succeeded in making the first high precision mass measurement of $^{70}\text{mBr}$, an $N = Z$ proton drip line nuclei. In addition to $^{70}\text{mBr}$, the masses of $^{71}\text{Br}$, $^{70}\text{Se}$ and $^{68}\text{Se}$ were measured by Penning trap mass spectrometry of thermalized rare isotopes produced by fast-beam fragmentation. The results indicate that $^{68}\text{Se}$ poses a greater waiting point in the rp-process, than previously thought.

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