Abstract Submitted
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In-flight proton breakup of ^{73}Rb[1] A.M. ROGERS, Dept. of Physics, UMass Lowell, C. ANDERSON, J. BARNEY, J. ESTEE, W.G. LYNCH, J. MANFREDI, H. SETIAWAN, R.H. SHOWALTER, S. SWEANY, S. TANGWANCHAROEN, M.B. TSANG, J.R. WINKELBAUER, NSCL, Michigan State University, K.W. BROWN, J.M. ELSON, C. PRUITT, L.G. SOBOTKA, Dept. of Chemistry and Physics, WashU - Saint Louis, Z. CHAJECKI, Dept. of Physics, WMU, J. LEE, Dept. of Physics, Univ. of Hong Kong — Properties of nuclei beyond the proton drip-line are important for mass models, astrophysics, and nuclear structure. Weakly-bound or proton-unbound nuclei near the rp process waiting-points, in particular, play a critical role in constraining calculations and observations of type I x-ray bursts. The relatively slow β-decay of ^{72}Kr, for instance, may be bypassed significantly by 2p-capture reactions through ^{73}Rb. This process, however, depends sensitively on the ^{73}Rb proton separation energy, S_{p}. While recent measurements of ^{65}As and ^{69}Br have reduced uncertainties in the reaction sequence, the ^{72}Kr waiting point still remains largely unconstrained. We have performed an experiment at NSCL to measure, using invariant-mass spectroscopy, the decay of ^{73}Rb$\rightarrow$p+^{72}Kr in an attempt to determine $S_{\mathrm{p}}(^{73}\mathrm{Rb})$. Preliminary results from our recent ^{73}Rb decay experiment will be presented.

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