Abstract Submitted
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Towards an experimental constraint for the ^{56}Ni(n,p)^{56}Co reaction rate which is key for the astrophysical νp process.[1] GEORGIOS PERDIKAKIS, PANAGIOTIS GASTIS, Central Michigan Univ, CARLA FROHLICH, North Carolina State University , MIHAI HOROI, Central Michigan Univ, ANTONIOS KONTOS, Massachusetts Institute of Technology, SEAN LIDDICK, NSCL, LING-YING LIN, ANL, FERNANDO MONTES, NSCL, STELIOS NIKAS, Central Michigan Univ, THOMAS REDPATH, NSCL, MATTHEW REDSHAW, Central Michigan Univ, ROMAN SENKOV, City University of New York, ARTEMIS SPYROU, ANTONIO VILLARI, NSCL, KATHRIN WIMMER, University of Tokyo, REMCO ZEGERS, NSCL — Neutrino-driven winds in core-collapse supernovae, are an important site for the production of elements heavier than iron. If the neutrino-driven wind is slightly proton-rich as predicted by modern hydrodynamics simulations, then some of the elements heavier than Fe could be synthesized by the νp-process making it a reasonable candidate for the Lighter Element Primary Process (LEPP), and a possible contributor to the abundances of light p-nuclei. The key ^{56}Ni(n,p)^{56} Co reaction rate for the neutrino-p process will be constrained experimentally through the ^{56}Co(p,n)^{56}Ni cross section measurement in ReA3. This new experimental technique that enables the measurement of (p,n) reactions at low energies with radioactive beams and the corresponding proof-of-principle experiment using the ^{85}Rb(p,n) reaction will be discussed.

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