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Cross section measurements of the ^{74}Ge(p,γ) and ^{90}Zr(p,γ) reactions[1] STEPHEN QUINN, SEAN LIDDICK, ANNA SIMON, ARTEMIS SPYROU, BENJAMIN STEFANEK, NSCL, Michigan State University, MANOEL COUDER, JOACHIM GORRES, ANTONIOS KONTOS, DANIEL ROBERTSON, ED STECH, WANPENG TAN, MICHAEL WIESCHER, University of Notre Dame, PAUL DEYOUNG, GRAHAM PEASLEE, Hope College — The p-nuclei are a group of stable, neutron-deficient isotopes whose production cannot be explained by neutron capture processes. Instead, nucleosynthesis is favored to occur via the p-process, in which high stellar temperatures lead to a series of photodisintegration reactions, their inverse capture reactions, and β^+ decays on existing seed nuclei. Current p-process network calculations do not accurately reproduce the observed abundance pattern of the p-nuclei, particularly for the lightest masses. In an effort to improve our understanding of the nucleosynthesis of the lightest p-nuclei, the ^{74}Ge(p,γ) and ^{90}Zr(p,γ) reactions were recently measured using the FN Tandem Accelerator at the University of Notre Dame in combination with the NSCL SuN detector. Cross section results at astrophysically relevant energies will be presented and compared with theoretical calculations.

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