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## First Results From Measurements of Capture Reactions on Sn and Pd for the $\gamma$ -Process Using HECTOR

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The formation of p-nuclei and their abundances are an important and ongoing study in nuclear astrophysical measurements. To understand and constrain theoretical models on the abundances of p-nuclei, further measurements of reactions on relevant nuclei and important branching points of the  $\gamma$ -process are needed. For this purpose the cross sections of (p, $\gamma$ ) and ( $\alpha$ , $\gamma$ ) reactions on  $^{112,114,116}\text{Sn}$  and  $^{108}\text{Pd}$ (p, $\gamma$ ) $^{109}\text{Ag}$  over a combined energy range of  $E_p=2\text{-}5\text{MeV}$  and  $E_\alpha=5\text{-}11.5\text{MeV}$ , for protons and alpha particles, respectively, are investigated. These measurements are performed using both the 5U and the FN accelerators at the Nuclear Science Laboratory at the University of Notre Dame. Preliminary cross-section results from the 5U experiments and future work for these ongoing experiments will be presented.

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