Abstract Submitted
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Searching for (γ,α)/(γ,n) branching points in the γ-process path around A=100[1] REBEKA KELMAR, ANNA SIMON, ORLANDO OLIVAS-GOMEZ, PATRICK MILLICAN, CRAIG REINGOLD, EMILY CHUCHMAN, ADAM CLARK, SAMUEL HENDERSON, SEAN KELLY, DANIEL ROBERTSON, EDWARD STECH, WANPENG TAN, University of Notre Dame — In order to model the γ-process it is important to determine the branching points along isotopic chains. The ^{90}Zr(α,γ)^{94}Mo, ^{102}Pd(α,γ)^{106}Cd, and ^{108,110}Cd(α,γ)^{112,114}Sn cross sections were measured to determine if ^{94}Mo, ^{106}Cd, and ^{112,114}Sn were branching points in the γ-process reaction flow. The reactions were measured at the University of Notre Dame using the High EfficienCy TOtal absorption spectrometeR (HECTOR). The ^{90}Zr(α,γ)^{94}Mo and ^{108}Cd(α,γ)^{112}Sn measurements extended the range of previously measured cross sections down to lower energies and the ^{102}Pd(α,γ)^{106}Cd and ^{110}Cd(α,γ)^{114}Sn reactions were measured for the first time. The measurements were compared to theoretical models from Talys 1.9. The (γ,α) and (γ,n) rates were then calculated using the best fit model and compared in order to investigate the relative intensity between the reaction pathways. It was found that in all cases the (γ,α) reaction pathway begins to dominate within the temperature range of 1.5-3.5 GK.

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