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Photoneutron reaction cross section measurements on ^{94}Mo and ^{90}Zr relevant to the *p*-process nucleosynthesis A. BANU, E. G. MEEKINS[1], Department of Physics and Astronomy, James Madison University, Harrisonburg, VA 22807, USA, J. A. SILANO[2], H. J. KARWOWSKI, TUNL, Durham, NC 27708, USA & University of North Carolina at Chapel Hill, Chapel Hill, NC 27516, USA, S. GORIELY, Institut d'Astronomie et d'Astrophysique, ULB, 1050 Brussels, Belgium
— The photodisintegration cross sections for the ^{94}Mo(γ,n) and ^{90}Zr(γ,n) reactions have been experimentally investigated with quasi-monochromatic photon beams at the High Intensity γ-ray Source (HIγS) facility of the Triangle Universities Nuclear Laboratory (TUNL). The energy dependence of the photoneutron reaction cross sections was measured with high precision from the respective neutron emission thresholds up to 13.5 MeV. These measurements contribute to a broader investigation of nuclear reactions relevant to the understanding of the *p*-process nucleosynthesis. The results are compared with the predictions of Hauser-Feshbach statistical model calculations using two different models for the dipole γ-ray strength function. The resulting ^{94}Mo(γ,n) and ^{90}Zr(γ,n) photoneutron stellar reaction rates as a function of temperature in the typical range of interest for the *p*-process nucleosynthesis show how sensitive the photoneutron stellar reaction rate can be to the experimental data in the vicinity of the neutron threshold.

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