HNPS Advances in Nuclear Physics

Vol 11 (2002)

HNPS2000 and HNPS2002

Cross sections of the $^{89}\text{Y}(p,\gamma)$ reaction relevant to the p process

P. Tsagari, M. Kokkoris, E. Skreti, P. Demetriou, S. Galanopoulos, A. G. Karydas, Ch. Zarkadas, S. Harissopoulos, T. Paradellis, R. Kunz, J. W. Hammer

doi: [10.12681/hnps.2211](https://doi.org/10.12681/hnps.2211)

To cite this article:

Tsagari, P., Kokkoris, M., Skreti, E., Demetriou, P., Galanopoulos, S., Karydas, A. G., Zarkadas, C., Harissopoulos, S., Paradellis, T., Kunz, R., & Hammer, J. W. (2019). Cross sections of the $^{89}\text{Y}(p,\gamma)$ reaction relevant to the p process. *HNPS Advances in Nuclear Physics*, 11. <https://doi.org/10.12681/hnps.2211>

Cross sections of the $^{89}\text{Y}(\text{p},\gamma)$ reaction relevant to the p process ¹

P. Tsagari, M. Kokkoris, E. Skreti, P. Demetriou, S. Galanopoulos, A. G. Karydas, Ch. Zarkadas, S. Harissopulos, and T. Paradellis

*Institute of Nuclear Physics, National Centre for Scientific Research "Demokritos",
POB 60228, 153.10 Aghia Paraskevi, Athens, Greece.*

R. Kunz, and J.W. Hammer

Institut für Strahlenphysik, Universität Stuttgart, 70569 Stuttgart, Germany.

The cross section of the $^{89}\text{Y}(\text{p},\gamma)^{90}\text{Zr}$ reaction was determined at $E_p=1.4\text{--}4.8$ MeV via angle-integrated measurements carried out by means of a 4π NaI summing detector as well as via angular distribution measurements using an array of 4 HPGe detectors with 100% relative efficiency. The resulting cross sections vary from 0.5 to 5 mb. Astrophysical S factors and reaction rates have also been derived. A good agreement between the experimental rates and the predictions of statistical theory has been found.

¹Work supported by NATO CRG Programme, Contr. No. CRG961086