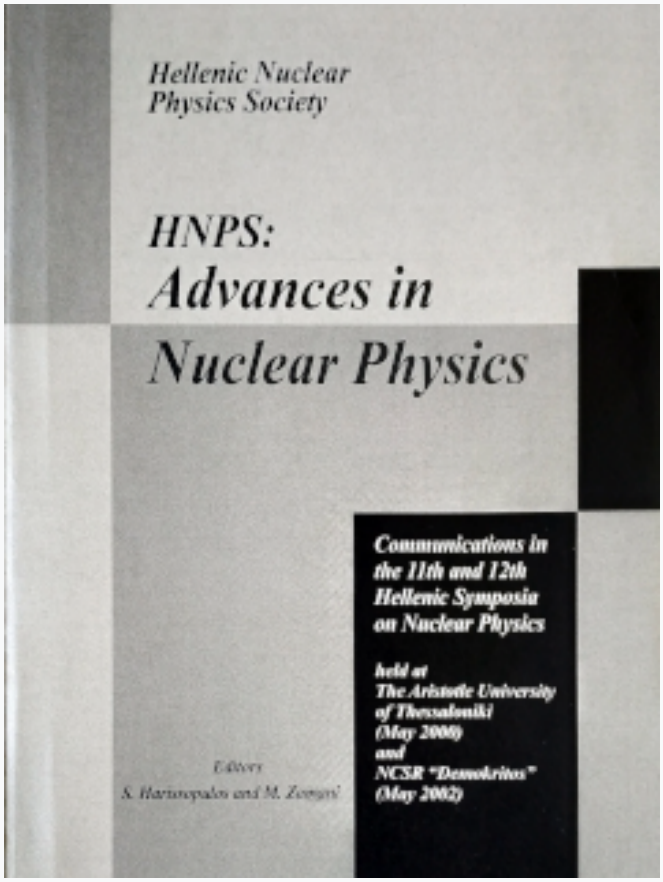
HNPS Advances in Nuclear Physics

Vol 11 (2002)

HNPS2000 and HNPS2002



Cross sections of the 89Y(p,γ) reaction relevant to the p process

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

doi: 10.12681/hnps.2211

Cross sections of the ^{89}Y(p,γ) 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}Y(p,γ)^{90}Zr reaction was determined at E_p=1.4-4.8 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 and the predictions of statistical theory has been found.

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