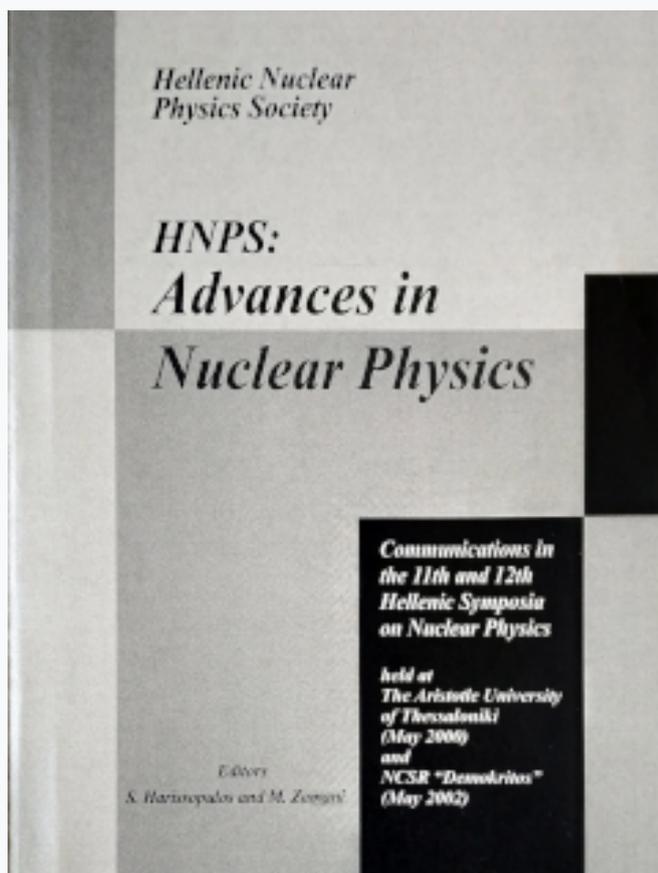


HNPS Advances in Nuclear Physics

Vol 11 (2002)

HNPS2000 and HNPS2002



Cross sections of proton capture reactions of Sr isotopes

S. Galanopoulos, P. Demetriou, M. Kokkoris, G. Kriembardis, S. Harissopoulos, R. Kunz, M. Fey, J. W. Hammer, Gy. Gyürky, Zs. Fülöp, E. Somorjai, S. Goriely

doi: [10.12681/hnps.2212](https://doi.org/10.12681/hnps.2212)

To cite this article:

Galanopoulos, S., Demetriou, P., Kokkoris, M., Kriembardis, G., Harissopoulos, S., Kunz, R., Fey, M., Hammer, J. W., Gyürky, G., Fülöp, Z., Somorjai, E., & Goriely, S. (2019). Cross sections of proton capture reactions of Sr isotopes. *HNPS Advances in Nuclear Physics*, 11. <https://doi.org/10.12681/hnps.2212>

Cross sections of proton capture reactions of Sr isotopes ¹

S. Galanopoulos, P. Demetriou, M. Kokkoris, G. Kriembardis, and S. Harissopoulos
*Institute of Nuclear Physics, National Centre for Scientific Research "Demokritos",
POB 60228, 153.10 Aghia Paraskevi, Athens, Greece.*

R. Kunz, M. Fey, and J.W. Hammer
*Institut für Strahlenphysik, Universität Stuttgart, Allmandring 3, 70569 Stuttgart,
Germany.*

Gy. Gyürky, Zs. Fülöp, and E. Somorjai
*Institute of Nuclear Research of the Hungarian Academy of Sciences (ATOMKI),
Bem tér 18/c, 4001 Debrecen, Hungary*

S. Goriely
*Institut d'Astronomie et d'Astrophysique, Université Libre de Bruxelles,
Campus de la Plaine, CP226, 1050 Brussels, Belgium.*

Cross section measurements of the proton capture reactions of the ⁸⁶Sr, ⁸⁷Sr and ⁸⁸Sr isotopes were carried out at energies $E_p=1.4-5$ MeV. At $E_p \leq 3.5$ MeV an array of 4 HPGe detectors with 100% relative efficiency shielded with BGO scintillators for Compton background suppression was used, whereas at $E_p \geq 3.5$ MeV, the measurements were performed by means of one HPGe detector of 80% relative efficiency. For the ⁸⁷Sr(p, γ)⁸⁸Y and ⁸⁸Sr(p, γ)⁸⁹Y reactions total cross sections ranging from 0.5 μ b–5 mb were found. The data analysis of the ⁸⁶Sr(p, γ)⁸⁷Y reaction is in progress. Cross sections have also been calculated by means of the statistical model code MOST. A very good agreement between the experimental data and the theoretical predictions has been found.

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