Nuclear Physics in Astrophysics - X



Contribution ID: 72

Type: Poster

Results of total and partial cross-section measurements of the ${}^{87}{\rm Rb}(p,\gamma){}^{88}{\rm Sr}$ reaction

Tuesday 6 September 2022 19:16 (2 minutes)

The existence of most of the stable very neutron deficient nuclei - the p nuclei - cannot be explained via neutron-capture reactions. Therefore, at least one other process has to exist in order to describe their origin, the γ process. Since most photodisintegration reactions involved in the process are not directly accessible, reliable statistical model calculations are needed to predict cross sections and reaction rates. To improve the calculations the nuclear input parameters need to be constrained and a large experimental database is needed. Via comparison of experimental data to theoretical predictions different models can be excluded or constrained.

In order to study the 87 Rb (p, γ) 88 Sr reaction, for the first time an in-beam experiment at the high-efficiency HPGe γ -ray spectrometer HORUS at the University of Cologne was performed. Proton beams with energies between $E_p = 2.0 - 5.0$ MeV inside the Gamow window were provided by the 10 MV FN Tandem accelerator.

Supported by the DFG (ZI 510/8-2)

Author: Ms WILDEN, Svenja (University of Cologne)

Co-authors: Dr HEIM, Felix (University of Cologne); Prof. ZILGES, Andreas (University of Cologne); Mr MÜLLER, Martin (University of Cologne)

Presenter: Ms WILDEN, Svenja (University of Cologne)

Session Classification: Poster session