**European Nuclear Physics Conference 2025** 



Contribution ID: 248

Type: Invited Presentation

## Recent experimental efforts for the astrophysical p-process

The astrophysical p-process is the crucial mechanism responsible for the synthesis of a sub-set of protonrich isotopes, known as p-nuclei, which cannot be produced by the s- and r-processes. Despite the several astrophysical environments considered in the literature [1-3] photodisintegration reactions are identified as the dominant mechanism for the production of these rather weakly naturally existing isotopes. Despite its significance, the exact conditions and reaction rates involved in the p-process remain poorly understood, necessitating precise experimental data to refine theoretical models.

In this talk I will provide an overview on the current understanding of the astrophysical p-process, which are the presently identified uncertainties from the nuclear physics perspective, and which are the efforts that the Lisbon group has recently performed to experimentally advance in the understanding of the properties of nuclei involved in this nucleosynthesis process, ranging from new techniques to determine reaction cross sections to innovative studies of  $\alpha$  nuclear potentials with radioactive isotopes.

References:

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- [3] A. Choplin, et al. Astronomy and Astrophysics 661, A86 (2022)

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Session Classification: Parallel session

Track Classification: Nuclear Astrophysics