

## PhD Student – ASTRO GAMMA

### Scope of work:

The ASTRO-GAMMA project (funded under PN-III-P4-PCE-2021-1014) aims to expand our understanding of the Big Bang and p-process nucleosynthesis by using an improved experimental configuration coupled with theoretical calculations

Measurements of the  ${}^7\text{Li}(\gamma,t){}^4\text{He}$  ground-state cross section below 6 MeV and two p-process reactions (on Sn-112 and Pd-102 targets) are planned by the project team at the High Intensity  $\gamma$ -ray Source (HIgS) in USA. Large-scale calculations of cross sections and astrophysical reaction rates will be performed for the charged-particles capture and photo-disintegration reactions.

Your main role will be to optimize the experimental configuration using GEANT4 simulations, test silicon-strip detectors, characterize of Li-7 targets, and be actively involved in the experimental campaign at the HIgS facility in USA. You will carry out data analysis, and publish results for both Li-7 and p-process reactions (under guidance from senior team members). This work will constitute a large part of your PhD thesis.

### Professional background:

- BSc degree in Physics, MSc in Physics / Nuclear Physics
- Admitted to a Doctoral program in Physics or related field
- Proven experience with Monte Carlo simulations: GEANT4
- Excellent programming skills in C/C++
- Fluency in English, both written and spoken

### Working arrangements/Conditions of employment:

- Part time position (28 hours/week) until the end of the project on 31/12/2024, based in Bucharest - Magurele, Romania.
- Starting date: as soon as possible (after 1/10/2022)

### Applications:

Please send CV with supporting documentation (one pdf file) to [office.gsd@eli-np.ro](mailto:office.gsd@eli-np.ro)