

## List of Publications - Nuclear Astrophysics Group 2016-2019

### *On nuclear astrophysics – direct and indirect methods topics*

1. F. Carstoiu, M. Lassault, L. Trache and V. Balanica, Rom. J. Phys. 61 (2016) 400  
*Heavy ion orbiting and Regge poles (I)*
2. F. Carstoiu, M. Lassault, L. Trache and V. Balanica, Rom. J. Phys. 61 (2016) 857  
*Heavy ion orbiting and Regge poles (II)*
3. F. Carstoiu, M. Lassault, L. Trache, V. Balanica, Rom. J. Phys. 61 (2016) 1180  
*Heavy ion orbiting and Regge poles (III)*
4. A. Tumino, C. Spitaleri, M. La Cognata, S. Cherubini, G. L. Guardo, M. Gulino, S. Hayakawa, I. Indelicato, L. Lamia, H. Petruscu, R. G. Pizzone, S. M. R. Puglia, G. G. Rapisarda, S. Romano, M. L. Sergi, R. Spartá & L. Trache, **Nature** **557** Issue: 7707 Pages: 687 (2018).  
<https://doi.org/10.1038/s41586-018-0149-4>  
*An increase in the C-12+C-12 fusion rate from resonances at astrophysical energies*
5. I.C. Stefanescu, A. Spiridon, L. Trache, E. Pollacco, A. Saastamoinen, B. Roeder, **J. Phys.: Conf. Ser.** **1024**, 012007 (2018).  
*AstroBox2E: a detection system for very low energy  $\beta$ -delayed proton decay*
6. Trache, Livius, in Conference: 8th International Conference on Nuclear Physics in Astrophysics (NPA8) Location: Lab Nazionali Sud, Catania, ITALY Date: JUN 18-23, 2017, NUCLEAR PHYSICS IN ASTROPHYSICS VIII (NPA8 2017) Book Series: **EPJ Web of Conferences** Volume: **165** Article Number: UNSP 02007.  
["Other" indirect methods for nuclear astrophysics](#)
7. Gulino, Marisa; Cherubini, Silvio; Rapisarda, Giuseppe Gabriele; et al., Conference: 9<sup>th</sup> European Summer School on Experimental Nuclear Astrophysics Location: Catania, ITALY Date: SEP 17-24, 2017. 9<sup>TH</sup> EUROPEAN SUMMER SCHOOL ON EXPERIMENTAL NUCLEAR ASTROPHYSICS Book Series: **EPJ Web of Conferences** Volume: 184 Article Number: UNSP 01008 Published: 2018.  
*Trojan Horse Method experiments with radioactive ion beams*
8. Burjan, V.; Hons, Z.; Kroha, V.; et al., **EUROPEAN PHYSICAL JOURNAL A** Volume: **55**, Article Number: 114. Published: JUL 23, 2019.  
*The determination of the astrophysical S-factor of the direct O-18(p, gamma)F-19 capture by the ANC method*
9. Chilug, A. I.; Panin, V.; Tudor, D.; et al., Group Author(s): HI-p Collaboration EXOTIC NUCLEI AND NUCLEAR/PARTICLE ASTROPHYSICS (VII) – PHYSICS WITH SMALL ACCELERATORS Book Series: **AIP Conference Proceedings**, Volume: **2076**, Article Number: UNSP 060001. Published: 2019.  
*Study of the C-9 Breakup Through NP1412-SAMURAI29R1 Experiment*

10. Stefanescu, I. C.; Trache, L.; Chilug, A. I.; et al., EXOTIC NUCLEI AND NUCLEAR/PARTICLE ASTROPHYSICS (VII) – PHYSICS WITH SMALL ACCELERATORS, Book Series: **AIP Conference Proceedings**, Volume: **2076**, Article Number: UNSP 060008. Published: 2019.  
*Decay Spectroscopy As A Tool For Nuclear Astrophysics*
11. Alexandra Spiridon et al – in EXOTIC NUCLEI AND NUCLEAR/PARTICLE ASTROPHYSICS (VII) – PHYSICS WITH SMALL ACCELERATORS, Book Series: **AIP Conference Proceedings** Volume: **2076** Article Number: UNSP 060007 Published: 2019.  
*Elastic studies with the upgraded TAMU-MDM detector*
12. D. Tudor, L. Trache, Alexandra I. Chilug, Ionut C. Stefanescu, Alexandra Spiridon, Mihai Straticiuc, Ion Burducea, Ana Pantelica, Romulus Margineanu, Dan G. Ghita, Doru G. Pacesila, Radu F. Andrei, Claudia Gomoiu, Ning T. Zhang, Xiao D. Tang, **Nucl. Instr. & Meth. in Phys. Res. A** **953** (2020) 163178.  
*A facility for direct measurements for nuclear astrophysics at IFIN-HH -- a 3 MV tandem accelerator and an ultra-low background laboratory*
13. N. T. Zhang, X. Y. Wang, H. Chen, Z. J. Chen, W. P. Lin, W. Y. Xin, S. W. Xu, D. Tudor, A. I. Chilug, I. C. Stefanescu, M. Straticiuc, I. Burducea, D. G. Ghita, R. Margineanu, C. Gomoiu, A. Pantelica, D. Chesneanu, L. Trache, X. D. Tang, B. Bucher, L. R. Gasques, K. Hagino, S. Kubono, Y. J. Li, C. J. Lin , et al. **Phys. Lett. B** **801** (2020) 135170.  
*Constraining the  $^{12}\text{C}+^{12}\text{C}$  astrophysical S-factors with the  $^{12}\text{C}+^{13}\text{C}$  measurements at very low energies*
14. A. Chilug, D. Tudor, A. Spiridon, I. Stefanescu, L. Trache, ...et al, in *Proc. Nucleus-Nucleus Collisions 2018, Saitama, Dec. 2018*, **Japan Phys. Soc. Conf. Ser.**, accepted July 2019.
15. L. Trache, in *Proc. ESSENA 2019*, **Eur. Phys. J. Conf. Ser.**, accepted Sep. 2019.  
*Nuclear astrophysics studies at NIPNE*
16. A. Saastamoinen, E. Pollacco, B.T. Roeder, R. Chyzh, L. Trache, R.E. Tribble, **Nucl. Instr. & Meth. B**, accepted May 2019, in press.  
*Studies of systematic effects of the AstroBox2 detector in online conditions*
17. A. Tumino, C. Spitaleri, M. La Cognata, S. Cherubini, L. Guardo, M. Gulino, S. Hayakawa, I. Indelicato, L. Iamia, H. Petrascu, R.G. Pizzone, S.M.R. Puglia, G.G. Rapisarda, S. Romano, M.L. Serghi, R. Sparta and L. Trache, **Il Nuovo Cimento** **42 C** (2019) 55.  
*Uncovering carbon burning in stars.*
18. F. Carstoiu, M. Lassault and L. Trache, **Rom. J. Phys.** **65** (2020) 301  
*Rainbow extinction, orbiting and Regge poles*
19. Livius Trache and Florin Carstoiu, arXiv: <http://arxiv.org/abs/1911.06077>  
*Indirect methods in Nuclear Astrophysics*

## Books:

1. **Livius Trache and Dan Gabriel Ghita (eds.)** *Exotic nuclei and nuclear/particle astrophysics (VI) - Physics with small accelerators. Proceedings of the Carpathian Summer School of Physics 2016 (CSSP16)*. Book Series: **American Institute of Physics Conference Proceedings**, Volume: 1852, Melville, New York, 2017.  
<https://aip.scitation.org/toc/apc/1852/1>
2. **Livius Trache and Alexandra Spiridon (eds.)**, *Exotic nuclei and nuclear/particle astrophysics (VII) - Physics with small accelerators. Proceedings of the Carpathian Summer School of Physics 2018 (CSSP18)*. Book Series: **American Institute of Physics Conference Proceedings**, Volume: 2076, Melville, New York, 2019.  
<https://aip.scitation.org/toc/apc/2076/1?expanded=2076>