

# LISTA DE LUCRĂRI

Candidat: **Dr. Horia Pașca**

*Post: Conferențiar universitar, domeniul Fizică*

## **a) Cele mai relevante 10 lucrări**

1. „Alpha clusterization as a reason for the narrow symmetric mass distribution in spontaneous fission of  $^{258}\text{Fm}$ ”, Pasca, H.; Adamian, G. G.; Antonenko, N. V., *Physics Letters B* 870 (2025), DOI: 10.1016/j.physletb.2025.139943.
2. „Manifestation of ternary clusterization in binary spontaneous fission of  $^{252}\text{Cf}$ ”, Pasca, H.; Adamian, G. G.; Antonenko, N. V., *Physics Letters B* 864:139444 (2025), DOI: 10.1016/j.physletb.2025.139444.
3. „Excitation-energy dependence of fission-fragment neutron multiplicity in the improved scission-point model”, Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *Physical Review C* 109(4), 044601 (2024), DOI: 10.1103/PhysRevC.109.044601.
4. „Fission within dinuclear system approach” (lucrare de tip review), Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *International Journal of Modern Physics E* 32(10), 2340005 (2023), DOI: 10.1142/S0218301323400050.
5. „Simultaneous description of charge, mass, total kinetic energy, and neutron multiplicity distributions in fission of Th and U isotopes”, Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *Physical Review C* 104(1), 014604 (2021), DOI: 10.1103/PhysRevC.104.014604.
6. „Examination of coexistence of symmetric mass and asymmetric charge distributions of fission fragments”, Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *Physical Review C* 101, 064604 (2020), DOI: 10.1103/PhysRevC.101.064604.
7. „Change of the shape of mass and charge distributions in fission of Cf isotopes with excitation energy”, Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *Physical Review C* 99, 064611 (2019), DOI: 10.1103/PhysRevC.99.064611.
8. „Charge distributions of fission fragments of low- and high-energy fission of Fm, No, and Rf isotopes”, Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *Physical Review C* 97, 034621 (2018), DOI: 10.1103/PhysRevC.97.034621.
9. „Possible origin of transition from symmetric to asymmetric fission”, Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., *Physics Letters B* 760, 800–806 (2016), DOI: 10.1016/j.physletb.2016.07.074.
10. „Energy dependence of mass, charge, isotopic, and energy distributions in neutron-induced fission of  $^{235}\text{U}$  and  $^{239}\text{Pu}$ ”, Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V.; Kim, Y., *Physical Review C* 93, 054602 (2016), DOI: 10.1103/PhysRevC.93.054602.

## **b) Teza de doctorat**

1. Pașca, Horia, „Cluster approach to fission”, teză de doctorat, 2017.

**c) Brevete de invenție**

Nu este cazul.

**d) Cărți și capitole în cărți**

Nu este cazul.

**e) Articole în reviste internaționale**

1. Schuller, E.; Pasca, H., „Extraction of the potential energy in mass asymmetry coordinate from experimental mass distributions of Fm isotopes”, *Nuclear Physics A* (2026), DOI: 10.1016/j.nuclphysa.2026.123334.

2. Pasca, H.; Adamian, G. G.; Antonenko, N. V., „Alpha clusterization as a reason for the narrow symmetric mass distribution in spontaneous fission of  $^{258}\text{Fm}$ ”, *Physics Letters B* 870 (2025), DOI: 10.1016/j.physletb.2025.139943.

3. Pasca, H.; Adamian, G. G.; Antonenko, N. V., „Manifestation of ternary clusterization in binary spontaneous fission of  $^{252}\text{Cf}$ ”, *Physics Letters B* 864:139444 (2025), DOI: 10.1016/j.physletb.2025.139444.

4. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Excitation-energy dependence of fission-fragment neutron multiplicity in the improved scission-point model”, *Physical Review C* 109(4), 044601 (2024), DOI: 10.1103/PhysRevC.109.044601.

5. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Fission within dinuclear system approach” (lucrare de tip review), *International Journal of Modern Physics E* 32(10), 2340005 (2023), DOI: 10.1142/S0218301323400050.

6. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Influence of the transition from symmetric to asymmetric fission mode on the average total kinetic energy and neutron multiplicity”, *Physical Review C* 108(1), 014613 (2023), DOI: 10.1103/PhysRevC.108.014613.

7. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Excitation-energy dependence of the fission-fragment neutron-excess ratio”, *Physical Review C* 107(2), 024603 (2023), DOI: 10.1103/PhysRevC.107.024603.

8. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Simultaneous description of charge, mass, total kinetic energy, and neutron multiplicity distributions in fission of Th and U isotopes”, *Physical Review C* 104(1), 014604 (2021), DOI: 10.1103/PhysRevC.104.014604.

9. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Examination of coexistence of symmetric mass and asymmetric charge distributions of fission fragments”, *Physical Review C* 101, 064604 (2020), DOI: 10.1103/PhysRevC.101.064604.

10. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Change of the shape of mass and charge distributions in fission of Cf isotopes with excitation energy”, *Physical Review C* 99, 064611 (2019), DOI: 10.1103/PhysRevC.99.064611.

11. Pașca, H.; Kalandarov, Sh. A.; Adamian, G. G.; Antonenko, N. V., „Influence of the entrance channel on spins of complex fragments in binary reactions”, *Nuclear Physics A* 980 (2018), DOI: 10.1016/j.nuclphysa.2018.10.060.

12. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Induced fission modes of Fermium and Nobelium isotopes”, *Nuclear Physics A* 977, 1–13

(2018), DOI: 10.1016/j.nuclphysa.2018.05.008.

13. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V.; Lacroix, D., „Toward an understanding of the anomaly in charge yield of Mo and Sn fragments in the fission reaction  $^{238}\text{U}(n,f)$ ”, *Physical Review C* 98, 014624 (2018), DOI: 10.1103/PhysRevC.98.014624.

14. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Suggestion for examination of a role of multi-chance fission”, *The European Physical Journal A* 54:104 (2018), DOI: 10.1140/epja/i2018-12545-y.

15. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Charge distributions of fission fragments of low- and high-energy fission of Fm, No, and Rf isotopes”, *Physical Review C* 97, 034621 (2018), DOI: 10.1103/PhysRevC.97.034621.

16. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Transitions between symmetric and asymmetric modes in the region of heavy actinides”, *Nuclear Physics A* 969 (2018), DOI: 10.1016/j.nuclphysa.2017.10.001.

17. Pasca, H.; Kalandarov, Sh. A.; Adamian, G. G.; Antonenko, N. V., „Spins of complex fragments in binary reactions within a dinuclear system model”, *Physical Review C* 96, 044611 (2017), DOI: 10.1103/PhysRevC.96.044611.

18. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Unexpected asymmetry of the charge distribution in the fission of  $^{222,224}\text{Th}$  at high excitation energies”, *Physical Review C* 94, 064614 (2016), DOI: 10.1103/PhysRevC.94.064614.

19. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Extraction of potential energy in charge asymmetry coordinate from experimental fission data”, *The European Physical Journal A* 52, 369 (2016), DOI: 10.1140/epja/i2016-16369-5.

20. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Possible origin of transition from symmetric to asymmetric fission”, *Physics Letters B* 760, 800–806 (2016), DOI: 10.1016/j.physletb.2016.07.074.

21. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V.; Kim, Y., „Energy dependence of mass, charge, isotopic, and energy distributions in neutron-induced fission of  $^{235}\text{U}$  and  $^{239}\text{Pu}$ ”, *Physical Review C* 93, 054602 (2016), DOI: 10.1103/PhysRevC.93.054602.

### **f) *Lucrări în proceedings internaționale***

1. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Charge/mass yields in the fission of highly excited heavy actinides”, *EPJ Web of Conferences* 194, 06004 (2018), DOI: 10.1051/epjconf/201819406004.

2. Pașca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Role of the excitation energy of the compound nucleus in binary decay processes”, *EPJ Web of Conferences* 169, 00015 (2018), DOI: 10.1051/epjconf/201816900015.

3. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Physical Origin Of The Transition From Symmetric To Asymmetric Fission Fragment Charge Distribution”, *AIP Conference Proceedings* 1852, 080007 (2017), DOI: 10.1063/1.4984881.

4. Pasca, H.; Andreev, A. V.; Adamian, G. G.; Antonenko, N. V., „Physical Origin of the Transition from Symmetric to Asymmetric Fission Fragment Charge

Distribution”, Acta Physica Polonica B 48(3), 431 (2017), DOI: 10.5506/APhysPolB.48.431.

5. Pașca, H., „Energy dependence of fission observables”, EPJ Web of Conferences 107, 07003 (2016), DOI: 10.1051/epjconf/201610707003.

**g) Alte lucrări și  
contribuții  
științifice**

1. Ignat, Elena; Severiukhin, Y.; (...); Pașca, H., „Effect of the combined use of proton radiation and AraC on morphological changes and apoptosis in the liver of rats”, European Biophysics Journal (2021), WOS:000671622300462 (meeting abstract — colaborare interdisciplinară în domeniul radiobiologiei).

Data,

Semnătura,

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