



# Alina-Maria Păuna

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## ● WORK EXPERIENCE

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11/2021 – CURRENT – Craiova

### UNIVERSITY TEACHING ASSISTANT – UNIVERSITY OF CRAIOVA

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Molecular physics and heat, laboratory, compulsory subject, addressed to first year students of the Faculty of Sciences, Department of Physics, University of Craiova, specializations Medical Physics and Computational Physics.

Newtonian Mechanics, laboratory, compulsory subject, addressed to first year students of the Faculty of Science, Department of Physics, University of Craiova, specialization Medical Physics.

Optics, laboratory, compulsory subject, addressed to first year students of the Faculty of Science, Department of Physics, University of Craiova, specialization Medical Physics.

Physics of solids and semiconductors, laboratory, compulsory subject, addressed to second year students of the Faculty of Science, Department of Physics, University of Craiova, specialization in Informatic Physics.

Semiconductor physics with applications in medicine, laboratory, compulsory subject, addressed to second year students of the Faculty of Sciences, Department of Physics, University of Craiova, specialization in Immeasure Physics.

Physics, seminar, addressed to first year students of the Faculty of Mechanics, University of Craiova, specialization in Transport and Traffic Engineering and Industrial and Agricultural Civil Construction.

## ● EDUCATION AND TRAINING

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2014 – 2022

### DOCTOR – University of Craiova - Doctoral School of Sciences

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**Field of study** Physics | **Thesis** Integrability and classes of solutions for nonlinear evolution equations

2012 – 2014

### MASTER DIPLOMA – University of Craiova - Faculty of Mathematics and Natural Sciences

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**Field of study** Theoretical Physics | **Thesis** Class I approach to self-dual 3 forms. BF method

Craiova, Romania

### BACHELOR DIPLOMA – University of Craiova - Faculty of Exact Sciences

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**Address** Craiova, Romania | **Field of study** Computational Physics |

**Thesis** Parameterizations of the celestial sphere

Craiova, Romania

### HIGH SCHOOL DIPLOMA – National College "Carol I"

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**Address** Ioan Măiorescu, 2, Craiova, Romania | **Field of study** Natural Sciences

## ● PUBLICATIONS

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**Complementary wave solutions for long-short wave resonance model via the extended trial equation method and the generalized Kudryashov method - Rodica Cimpoiășu, Alina Păuna**

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<https://doi.org/10.1515/phys-2018-0057> – 2018

Open Physics, Vol. 16, 2018.

<https://www.degruyter.com/journal/key/PHYS/16/1/html>

**Power law method for finding soliton solutions of the 2+1 Ricci flow model- R. Constantinescu, C. Ionescu, A. Florian, A. Streche (Pauna)**

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<http://mphys9.ipb.ac.rs/proceedings.html> – 2018

Proceedings of 9th Mathematical Physics Meeting, Institute of Physics Belgrade, ISBN: 978-86-82441-48-9 (2018), pp 135-146.

**Nonlinear mathematical models for physical phenomena - R. Constantinescu, F. Iacobescu, A. Pauna**

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<https://doi.org/10.1063/1.5091249> – 2019

AIP Conference Proceedings 2075 (2019), 100005.

**A reduction method for solving nonlinear PDEs - R. Constantinescu, C. Ionescu, A. Pauna**

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[http://cis01.central.ucv.ro/pauc/vol/2020\\_30\\_part2/pauc\\_2020\\_part2.html](http://cis01.central.ucv.ro/pauc/vol/2020_30_part2/pauc_2020_part2.html) – 2020

Physics AUC 96 vol. 30 (part II) 2020, 158-165.

**On generalized Kulish-Sklyanin models - A. Florian, V. S. Gerdjikov, A. Streche-Pauna**

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[http://cis01.central.ucv.ro/pauc/vol/2020\\_30\\_part2/pauc\\_2020\\_part2.html](http://cis01.central.ucv.ro/pauc/vol/2020_30_part2/pauc_2020_part2.html) – 2020

Physics AUC, vol. 30 (part II) 2020, 175-195.

**On the Spectral Properties of Lax Operators Related to BD.I Symmetric Spaces - A. Streche-Pauna, A. Florian, V. S. Gerdjikov**

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[https://doi.org/10.1007/978-3-030-71616-5\\_31](https://doi.org/10.1007/978-3-030-71616-5_31) – 2021

Chapter in Advanced Computing in Industrial Mathematics, BGSIAM 2018: Studies in Computational Intelligence, Springer vol 961, 2021, pp 345-358.

**Solutions of the Bullough-Dodd model of scalar field through Jacobi type equations - R. Cimpoiășu, R. Constantinescu, A. Streche Pauna**

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<https://doi.org/10.3390/sym13081529> – 2021

Symmetry 13(8), 2021, 1529.

**Direct methods in finding traveling wave solutions for nonlinear evolutionary phenomena - R. Cimpoiășu, R. Constantinescu, G. Florian, A. Streche (Pauna)**

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2022

Proceedings of 2nd CONFERENCE ON NONLINEARITY, 18- 22.10.2021, Belgrade, Serbia (in press).

## ● CONFERENCES AND SEMINARS

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01/09/2022 – 04/09/2022 – Belgrade, Serbia

### **SEENET-MTP Assessment Meeting and Workshop on Theoretical and Mathematical Physics 2022**

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Reaction and diffusion phenomena in modeling the proliferation of the brain tumors - R.Constantinescu, A.Pauna, M.Stoicescu

<https://bwam22.seenet-mtp.info/program/>

07/2018 – New Bulgarian University, Sofia, Bulgaria

### **Reduction method for finding traveling wave solutions**

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<http://iaps.institute/reduction-method-for-finding-traveling-wave-solutions/>

17/04/2018 – 21/04/2018 – Sinaia, România

### **The joint meeting on quantum field and nonlinear phenomena**

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Methods for solving solitonic equation. Examples - Radu Constantinescu, Aurelia-Daniela Florian, Carmen Ionescu, Alina-Maria Păuna - poster

[http://cis01.central.ucv.ro/physics/en/workshop\\_Sinaia\\_2018/index.html](http://cis01.central.ucv.ro/physics/en/workshop_Sinaia_2018/index.html)

17/06/2018 – 21/06/2018 – Belgrad, Serbia

### **Belgrade BioInformatics Conference 2018**

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Reduction method for reaction-diffusion equations from biology - Aurelia Florian, Jelena Ivic, Alina Pauna\*, Mihai Stoicescu

<http://belbi2018.matf.bg.ac.rs>

19/06/2016 – 23/06/2016 – Belgrad, Serbia

### **Belbi-Belgrade Bioinformatics**

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Chaos and symmetries in mathematical neural flow - Rodica Cimpoiașu, Radu Constantinescu, Alina Streche

<http://alas.matf.bg.ac.rs/~websites/bioinfo/>

08/03/2016 – 12/03/2016 – Sinaia, România

### **The joint meeting on quantum fields and nonlinear phenomena**

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A special case of Chua system. Chaos and regular behavior - Carmen Ionescu, Mihai Stoicescu, Alina Streche - poster

[http://cis01.central.ucv.ro/physics/en/workshop\\_Sinaia\\_2016/](http://cis01.central.ucv.ro/physics/en/workshop_Sinaia_2016/)

## ● PARTICIPATION IN TRAINING PROGRAMS DURING THE DOCTORAL INTERNSHIP

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### **Participation in training programs during the doctoral internship**

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- "European Cross-Border Doctorials" Collège Doctorale Languedoc Roussillon. 5-10 Iulie 2021.

- "CERN-SEENET-MTP PhD Training Program "New Trends in High Energy Theory", Sofia, Bulgaria. 16-20 Octombrie 2017

- "CERN-SEENET-MTP PhD Training Program in High Energy Physics – Computational methods inCosmology and General Relativity", Timisoara. 11-17 Decembrie 2016

- "CERN-SEENET-MTP PhD Training Program in High Energy Physics - Modern Aspects of Quantum Field Theory", București. 8-14 Noiembrie 2015,  
- Curs online - Differential Equations and Their Symmetries Via Mathematical Models. Department of Mathematics and Science, Blekinge Institute of Technology. Aprilie 2017.  
- Vizita Universității Shanghai Jiao Tong, China sub supravegherea coordonatorului de doctorat Prof. univ. dr. Radu Constantinescu, ca parte a proiectului EU "Dynamical systems and their applications" 25 Aprilie -8 iunie 2016.

## ● PROJECTS

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12/2017 – 09/2018

### **COMASS - Computational Methods in Astrophysics and Space Sciences**

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Position held - member

05/2022 – 03/2023

### **STEM in Action; Open Educational Resources for Teachers**

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Position held: researcher

CURRENT

### **Applying some advanced technologies in teaching and research, in relation to air pollution**

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Position held: member

## ● DRIVING LICENCE

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**Driving Licence:** B | 05/03/2018 – 05/03/2028