

## CURRICULUM VITAE

**Nume:** IONESCU

**Prenume:** Carmen-Liliana

**Data si locul nasterii:** 18. 09. 1971, Craiova, Jud. Dolj

**Cetatenie:** Romana

**Titlul stiintific:** Doctor in Fizica, Domeniul fundamental Stiinte Exacte, Domeniul Fizica, Specialitatea Fizica Teoretica

**Titlul tezei de doctorat, anul sustinerii:** Contributii la studiul teoriilor de camp cu constrangeri, 2002

**Domenii de competenta:** Fizica Teoretica, Fizica Matematica

**Locul de munca actual:** Universitatea din Craiova

**Functia:** Lector universitar

**Limbi straine cunoscute:** engleza, franceza

**Lucrari stiintifice publicate in reviste cotate ISI:** 19

**Lucrari stiintifice publicate in revistele de specialitate ale Academiei Romane:** 4

**Lucrari stiintifice publicate in reviste de specialitate din strainatate necotate ISI si indexate in baze de date recunoscute:** 1

**Lucrari stiintifice publicate in alte reviste recunoscute de CNCSIS (categoriile B+ si B):** 12

**Lectii invitate la conferinte internationale cu comitet si program:** 13

**Carti, monografii, capitole de carti de specialitate publicate in edituri nationale recunoscute de CNCSIS:** 1

**Granturi/contracte de cercetare castigate prin competitie in calitate de director (sau responsabil stiintific):** 1 (grant international)

**Numarul de citari (in acord cu Web of Science):** 30 (fara autocitari)

**Indice Hirsch (in acord cu Web of Science):** 6

## Lista de publicatii

### A. Teza de doctorat

Contributii la studiul teoriilor de camp cu constrangeri, 2002

### C. Lucrari indexate ISI/BDI

#### Lucrari in reviste cotate ISI

1. A. Babalean, R. Constantinescu, C. Ionescu, Nonminimal BRST terms for the Yang–Mills theory, *J. Phys. A: Math. Gen.* 31 (1998) 8653–8659
2. A. Babalean, R. Constantinescu, C. Ionescu, The gauge fixing problem in the  $sp(3)$  BRST canonical formalism, *J. Phys. A: Math. Gen.* 32 (1999) 3005–3012
3. R. Constantinescu, C. Ionescu, The  $sp(3)$  BRST symmetry for reducible dynamical systems, *Mod. Phys. Lett. A* 15, No. 16 (2000) 1037–1042
4. R. Constantinescu, C. Ionescu, The Equivalence between the Lagrangean and the Hamiltonian formalisms for the extended BRST Symmetry, *International Journal of Modern Physics A* 21, No. 7 (2006) 1567–1575
5. R. Constantinescu, C. Ionescu, From the Hamiltonian to the Lagrangean formalism for 1-reducible theories. The Freedman-Townsend model, *Central European Journal of Physics*, Volume 4, No. 4 (2006) 511–521
6. R. Constantinescu, C. Ionescu, Multidifferential complexes and their application to gauge theories, *International Journal of Modern Physics A* 21, No. 32 (2006) 6629–6640
7. R. Constantinescu, C. Ionescu, Gauge fixing procedure in the extended BRST theory, *Annalen der Physik* 15 (2006) 169–176
8. C. Ionescu, The  $sp(3)$  BRST Hamiltonian formalism for Yang–Mills fields, *Modern Physics Letters A* 23, No. 10 (2008) 737–750
9. R. Constantinescu, C. Ionescu, A Chern-Simons gauge-fixed Lagrangian in a “non-canonical” BRST approach, *J. Phys. A: Math. Theor.* 42 (2009) 085401, 9pp
10. R. Constantinescu, C. Ionescu, The Yang-Mills fields: from gauge theory to the mechanical model, *Central European Journal of Physics*, Vol. 7, No. 4 (2009) 711–720
11. R. Constantinescu, C. Ionescu, Lagrangean  $sp(3)$  BRST formalism for massive vectorial bosonic fields, *Romanian Journal of Physics*, Vol. 55, Nos. 9-10 (2010) 961-970

12. R. Constantinescu, C. Ionescu, Hot Quark-Gluon Plasma and the Chapline-Manton Model, *Romanian Journal of Physics*, Vol. 56, Nos. 1–2 (2011) 53–61
13. R. Constantinescu, C. Ionescu, M. Stoicescu, Propagating nerve impulse in quasi-steady state conditions. *Romanian Journal of Physics*, Vol 58, Nos 5-6 (2013) 538–549
14. C. Ionescu, G. Florian, E. Panaintescu, I. Petrisor, Nonlinear control of chaotic circuits, *Romanian Journal of Physics*, Vol. 61, Nos. 1-2 (2016) 183 – 193
15. C. Ionescu, R. Constantinescu, M. Stoicescu, Functional expansions for finding traveling wave solutions, *Journal of Applied Analysis and Computation*, vol. 10, no.2, (2020) 569-583
16. C. Ionescu, C. Babalic, R. Constantinescu, R. Efrem, The Functional Expansion Approach for Solving NPDEs as a Generalization of the Kudryashov and G'/G Methods, *Symmetry* 14(4) (2022) 827
17. C. Ionescu, R. Constantinescu, Solving Nonlinear Second-Order Differential Equations through the Attached Flow Method, *Mathematics*, vol. 10, no. 15 (2022) 2811
18. C. Ionescu, R. Constantinescu, Optimal Choice of the Auxiliary Equation for Finding Symmetric Solutions of Reaction–Diffusion Equations, *Symmetry*, vol. 16, no.3 (2024) 335
19. C. Ionescu, I. Petrisor, Attached Flows for Reaction–Diffusion Processes Described by a Generalized Dodd–Bullough–Mikhailov Equation, *Symmetry*, vol. 16, no.5 (2024) 531

### **Lucrari in reviste indexate BDI**

1. A. Babalean, R. Constantinescu, C. Ionescu, Extended BRST symmetries in the gauge field theories, *Romanian Reports in Physics* 53 (2001) 9–14
2. R. Constantinescu, C. Ionescu, Combined dynamics of physical and ghost-type fields in the Freedmann–Townsend model, *Romanian Journal of Physics* 53, No 9–10 (2008) 1077–1083
3. R. Constantinescu, C. Ionescu, The nonabelian gauge fields and their dynamics in the finite space of color factors, *Journal of Institute of Astronomy Belgrade* (2010)
4. R. Constantinescu, C. Ionescu, Hot Quark-Gluon Plasma and Chapline–Manton model, *Romanian Reports in Physics* 62 (2010) 53 - 61

#### **D. Lucrari stiintifice publicate in reviste din tara recunoscute de CNCSIS**

1. R. Constantinescu, C. Ionescu, Ghost structure for generalized BRST symmetry, Physics AUC 7 (1997) 100-104
2. R. Constantinescu, C. Ionescu, Generalized structures in the BRST quantization, Physics AUC 8 (1998) 28-34
3. R. Constantinescu, C. Ionescu, Level structure of the phase space for the extended BRST symmetries, Physics AUC 10 (part I) (2000) 119-123
4. R. Constantinescu, C. Ionescu The gauge-fixing procedure in the  $sp(3)$  Hamiltonian BRST formalism for the Yang - Mills - theory, Annals of West University of Timisoara, 43 (2002) 29-35
5. R. Constantinescu, C. Ionescu, Extended phase space for 1-reducible theories, Phys. AUC 12 (part II) (2002) no.2, 116-122
6. R. Constantinescu, C. Ionescu, Equivalent  $sp(2)$  path integrals for the abelian gauge field, Physics AUC 13 (2003) 187-192
7. R. Constantinescu, C. Ionescu, Level structure of the configuration space in the Lagrangian  $sp(3)$  BRST theories, Physics AUC 14 (2004) 117 – 126
8. C. Ionescu Masive vector field with higher order derivatives, Physics AUC 16 (part I) (2006) 97–102
9. R. Constantinescu, C. Ionescu, Quantum aspects of the  $sp(2)$  BRST path integrals for models with nonlinear gauge superalgebra, Phys. AUC 18 (2008) 64 – 72
10. R. Constantinescu, C. Ionescu, Non-canonical operators in the gauge fixing procedure, Annals of Physics, West University of Timisoara, Vol 48 (2006) 24–33
11. R. Constantinescu, C. Ionescu, Quantum aspects of the  $sp(2)$  BRST path integrals for models with nonlinear gauge superalgebra, Phys. AUC 18 (part I) (2008) 64 - 72
12. R. Constantinescu, C. Ionescu, I. Petrisor, Stability analysis and synchronization of Chua systems, Annals of the University of Craiova, Physics AUC 27 (2017) 61-68

#### **E. Lectii invitate si lucrari prezentate la conferinte internationale**

1. R. Constantinescu, C. Ionescu, The Batalin–Lavrov–Tyutin method in BRST  $sp(3)$  Hamiltonian quantization, Proceedings of 1 st International Spring School and Workshop on Quantum Field Theory and Hamiltonian Systems, May 1998, Călimănești, Romania, (2001) 1–6
2. R. Constantinescu, C. Ionescu, R. Popa, Global symmetries for the Laser radiation, Proceedings of SPIE, SIOEL '99, Sixth Symposium on Optoelectronics, 22–24 September 1999, Bucuresti Vol. 4068 (2000) 255–260
3. R. Constantinescu, C. Ionescu, The generalized BRST Hamiltonians for irreducible theories, Proceedings of the 2 nd International Spring school and workshop on Quantum Field Theory and Hamiltonian Systems, May 2000, Călimănești, Romania (2000) 182–187

4. R. Constantinescu, C. Ionescu: "Nonlinear dynamics of the ghost type variables, invited lecture given in the International Workshop on Plasma Dynamics, Queshm, Iran, 15-20 December 2002.
5. R. Cimpoiasu, R. Constantinescu, C. Ionescu, Lagrangian structure for integrable systems, Proceedings of the 3<sup>rd</sup> International Spring school and workshop on Quantum Field Theory and Hamiltonian Systems, 6–12 may 2002, Călimănești, Romania (2002) 73–83
6. R. Constantinescu, C. Ionescu, Nonlinear dynamics of the ghost type variables, Proceedings of "The International Workshop on Plasma Dynamics", Queshm, Iran 15–20 December 2002
7. R. Constantinescu, C. Ionescu, The  $sp(3)$  BRST Hamiltonian formalism for the Freedman–Townsend model and its connection with the Lagrangian one, Proceedings of the 4<sup>th</sup> International School and Workshop on Quantum Field Theory and Hamiltonian Systems, 16–21 October 2004, Calimanesti–Caciulata, Romania (2005) 206–214
8. R. Cimpoiasu, R. Constantinescu, C. Ionescu, Symmetry operators for dynamical systems by high order ODEs, Proceedings of the 4<sup>th</sup> International School and Workshop on Quantum Field Theory and Hamiltonian Systems, 16–21 October 2004, Calimanesti–Caciulata, Romania (2005) 215–218
9. A. Boldea, C. Ionescu, Invariants of the zonal-flow models, Proceedings of the 5<sup>th</sup> International School and Workshop on Quantum Field Theory and Hamiltonian Systems, 20–26 May 2004, Calimanesti–Caciulata, Romania (2006) 205–208
10. R. Constantinescu, C. Ionescu, Complete dynamics in the extended phase space, Proceedings of the 6<sup>th</sup> International School and Workshop on Quantum Field Theory and Hamiltonian Systems, 6–11 May 2008, Calimanesti – Caciulata, Romania (2008) 141–150
11. C. Ionescu, The spectrum of the generators in the  $sp(3)$  BRST Lagrangian formalism, Proceedings of the 6<sup>th</sup> International School and Workshop on Quantum Field Theory and Hamiltonian Systems, 6–11 May 2008, Calimanesti–Caciulata, Romania (2008) 188–198
12. R. Constantinescu, C. Ionescu, Extended BRST symmetries. Quantum Approach, AIP Conference Proceedings 1131 (2009) 17-22
13. R. Constantinescu, C. Ionescu, Combined dynamics of physical and ghost-type fields in the Freedmann-Townsend model, Romanian Journal of Physics, Vol. 53, Issue 9-10 (2008) 1077-1082
14. R. Constantinescu, C. Ionescu, The nonabelian gauge fields and their dynamics in the finite space of color factor, invited lecture in Spring School on Stings, Cosmology and Particles, Nis, April 2009
15. R. Constantinescu, C. Ionescu, M.Stoicescu, Adomian Decomposition Method for Quark Gluon Plasma Model, invited lecture at TIM'10 (25-27 nov.2010),AIP Conference Proceedings Volume 1387 (2011) 29-36
16. R. Constantinescu, C. Ionescu, Chaos and Stabilizing Mechanisms for Yang-Mills Mechanical Models, Proceedings of the "7<sup>th</sup> School and Workshop on Quantum

- Field Theory & Hamiltonian Systems", 10-15 Mai 2010, Calimanesti, Romania, Annals of the University of Craiova, Physics AUC 21 (Special Issue) (2011) 207-215
17. C. Ionescu, E. Panaintescu, M. Stoicescu, Neural Flows in Hopfield Network Approach, Analele Universității de Vest din Timișoara Vol. LVII, 2013 Seria Fizică, 9 pagini, <https://www.degruyter.com/downloadpdf/j/awutp.2013.57.issue-1/awutp-2015-0101/awutp-2015-0101.xml>
  18. R. Constantinescu, C. Ionescu, E. Panaintescu, I. Petrisor, Control and optimization techniques for "jerk" type circuits, presented in the conf. "Theoretical and computational methods in dynamical systems and fractal geometry", Maribor, April 2015 [http://www.camtp.uni-mb.si/camtp/valera/DS2015/book\\_abstracts.pdf](http://www.camtp.uni-mb.si/camtp/valera/DS2015/book_abstracts.pdf)
  19. C. Ionescu, M. A. Streche, M. Stoicescu, Special case for Chua Circuit. Chaos and regularity, Quantum Fields and Nonlinear Phenomena Conference, Sinaia 09-13 martie 2016 [http://cis01.central.ucv.ro/physics/ro/en/workshop\\_Sinaia\\_2016/index.html](http://cis01.central.ucv.ro/physics/ro/en/workshop_Sinaia_2016/index.html)
  20. R. Constantinescu, C. Ionescu, A. Streche, Mathematical Methods in Nonlinear Dynamics, "The Turkish Physical Society 33rd International Physics Conference", 6-10 sept. 2017 (<http://tfd33.turkfizikderneqi.org/en/>)
  21. R. Constantinescu, C. Ionescu, A. Streche, A. Florian, Power law method for finding soliton solutions of the 2+1 Ricci flow model, "The 9th Mathematical Physics Meeting: School and Conference in Modern Mathematical Physics" care s-a desfasurat intre 18-23 septembrie 2017 la Belgrad (<http://mphys9.ipb.ac.rs/index.php>), Proceedings of the 9th MATHEMATICAL PHYSICS MEETING: School and Conference on Modern Mathematical Physics September 18 – 23, 2017, Belgrade, Serbia, ISBN: 978-86-82441-48-9, pp 135-146
  22. R. Constantinescu, C. Ionescu, A. Pauna, A reduction method for solving nonlinear PDEs, Workshop on Quantum Fields and Nonlinear Phenomena, 27-29 sept. 2020, held online

## **G. Monografii**

### *G1. Monografii stiintifice*

1. Simetrii Becchi-Rouet-Stora-Tyutin extinse  
 Autor: C. Ionescu  
 Editura Universitaria, Craiova, 2007, 364 pagini, ISBN 973-742-077-2

## **I. Granturi si contracte de cercetare castigate prin competitie**

### *I1. Internationale*

1. The knowledge of the Universe: between the reality and the mental construct  
 Tipul contractului: Grant Univ. Interdisciplin. Paris  
 Numarul contractului/anul: GPSSMAP07/2006/2007  
 Valoarea contractului (pentru Univ. din Craiova): 24700 Euro  
 Director: R. Constantinescu  
 Calitatea: Membru

2. South-East European Network in Mathematics and Theoretical Physics SEENET-MTP  
Tipul contractului: Grant UNESCO (BRESCE Office Venetia)  
Numarul contractului: AFC 10-12/2009, 2009-2010  
Valoarea contractului (pentru Univ. din Craiova) 7125 Euro  
Responsabil: C. Ionescu

*12. Nationale*

1. Structuri dinamice complexe in sisteme neliniare  
Numarul contractului/anul: 374/11/05.11.2003  
Subcontract Univ. Craiova 45 C/04.11.2003  
Valoarea subcontractului (pentru Univ. din Craiova): 7000 RON  
Director: D. Grecu (IFIN HH)  
Director subcontract: R. Constantinescu  
Calitatea: Membru
  
2. Ecuatii de evolutie si conditii de integrabilitate pentru sisteme dinamice  
Numarul contractului/anul: 40202/2003, 33062/24.06.2004, 34677/24.06.2005  
Tipul grantului: A  
Codul CNCSIS: 734/2003  
Valoarea contractului: 37000 RON  
Director : R. Constantinescu  
Calitatea: Membru
  
3. Structuri coerente versus comportament haotic in structuri neliniare complexe  
Nr contractului/anul: CEx05-D11-09/3.10.2005, Subcontract Univ. Craiova C240/2005  
Tipul contractului: CEEX  
Valoarea contractului (Univ. din Craiova): 300000 RON  
Director: R. Constantinescu  
Calitatea: Membru