



# RAPORT PRIVIND ACTIVITATEA DE CERCETARE ȘTIINȚIFICĂ ÎN ANUL 2015

## I. ARTICOLE PUBLICATE ÎN REVISTE COTATE ISI WEB OF SCIENCE

1. Barbu, V; Bonaccorsi, S; Tubaro, L., *A Stochastic Heat Equation with Nonlinear Dissipation on the Boundary*, Journal Of Optimization Theory And Applications, Volume: 165 Issue: 2 Pages: 317-343, 2015.
2. Barbu, V; Favini, A; Marinoschi, G., *Nonlinear parabolic flows with dynamic flux on the boundary*, Journal of Differential Equations, Volume: 258 Issue: 6 Pages: 2160-2195, 2015.
3. Barbu, V; Rockner, M., *An operatorial approach to stochastic partial differential equations driven by linear multiplicative noise*, Journal of the European Mathematical Society, Volume: 17 Issue: 7 Pages: 1789-1815, 2015.
4. Ieșan, D., *Deformation of chiral elastic cylinders composed of two materials*, International Journal of Solids and Structures, Volume: 69-70 Pages: 207-216, 2015.
5. Anita, Sebastian; Capasso, Vincenzo; Kunze, Herb; et al., *Dynamics and optimal control in a spatially structured economic growth model with pollution diffusion and environmental taxation*, Applied Mathematics Letters, 42 (2015), 36-40.
6. Anita, Laura-Lulia; Anita, Sebastian; Morosanu, Costica, *Optimal strategies to diminish a pest population via bilinear controls*, Applied Mathematics Letters, 40 (2015), 7-12.
7. Anita, S. *Stabilization of a Predator-Prey System with Non. Local Terms*, Mathematical Modelling of Natural Phenomena, 10 (2015), 6-16.
8. Bua, Lucia; Bucataru, Ioan; de Leon, Manuel; et al., *Symmetries in Lagrangian Field Theory*, Reports on Mathematical Physics, 333-357, 75 (2015).
9. Bucataru, Ioan; Constantinescu, Oana, *Generalized Helmholtz Conditions for Non-Conservative Lagrangian Systems*, Mathematical Physics Analysis and Geometry, Article Number: 25, 18 (2015).
10. Carja, Ovidiu; Miranville, Alain; Morosanu, Costica, *On the existence, uniqueness and regularity of solutions to the phase-field system with a general regular potential and a general class of nonlinear and non-homogeneous boundary conditions*, Nonlinear Analysis-Theory Methods & Applications, 190-208, 113 (2015).
11. Chirita, Stan; Ciarletta, Michele; Tibullo, Vincenzo, *On the wave propagation in the time differential dual-phase-lag thermoelastic model*, Proceedings of the Royal Society A- Mathematical Physical and Engineering Sciences, Article Number: 20150400, 471 (2015).

12. Chirita, Stan; Zampoli, Vittorio, *On the forward and backward in time problems in the Kelvin-Voigt thermoviscoelastic materials*, Mechanics Research Communication, Special Issue: SI, 68 (2015), 25-30.
13. Chirita, Stan; Danescu, Alexandre, *Surface waves problem in a thermoviscoelastic porous half-space*, Wave Motion, 100-114, 54 (2015).
14. Chirita, Stan, *On the spatial behavior of the steady-state vibrations in thermoviscoelastic porous materials*, Journal of Thermal Stresses, 96-109, 38 (2015).
15. Durea, Marius; Strugariu, Radu; Tammer, Christiane, *On set-valued optimization problems with variable ordering structure*, Journal of Global Optimization, 745-767, 61 (2015).
16. Montaldo, S.; Oniciuc, C.; Ratto, A., *Rotationally symmetric biharmonic maps between models*, Journal of Mathematical Analysis and Applications, 494-508, 431 (2015).
17. Fetcu, Dorel; Oniciuc, Cezar; Pinheiro, Ana Lucia, *CMC biconservative surfaces in  $S-n \times R$  and  $H-n \times R$* , Journal of Mathematical Analysis and Applications, 588-609, 425 (2015).
18. Buckdahn, R.; Maticiuc, L.; Pardoux, E. ; Rascanu, A., *Stochastic variational inequalities on non-convex domains*, Journal of Differential Equations, 7332-7374, 259 (2015).
19. Maticiuc, Lucian; Rascanu, Aurel; Slominski, Leszek; et al., *Cadlag Skorokhod problem driven by a maximal monotone operator*, Journal of Mathematical Analysis and Applications, 1305-1346, 429 (2015).
20. Gassous, Anouar M.; Rascanu, Aurel; Rotenstein, Eduard, *Multivalued backward stochastic differential equations with oblique subgradients*, Stochastic Processes and their Applications, 3170-3195, AUG 125 (2015).
21. Maticiuc, Lucian; Rascanu, Aurel, *Backward stochastic variational inequalities on random interval*, Bernoulli, 1166-1199, 21 (2015).
22. Necula, Mihai; Popescu, Marius; Vrabie, Ioan I., *Viability for delay evolution equations with nonlocal initial conditions*, Nonlinear Analysis-Theory Methods & Applications, 164-172, 121 (2015).
23. Vrabie, Ioan I., *Delay evolution equations with mixed nonlocal plus local initial conditions*, Communications in Contemporary Mathematics, 17 (2015).
24. Khan, Akhtar A.; Tammer, Christiane; Zalinescu, Constantin, *Regularization of quasi-variational inequalities*, Optimization, 1703-1724, 64 (2015).
25. Zalinescu, C., *On the use of the quasi-relative interior in optimization*, Optimization, 1795-1823, 64 (2015).
26. Zalinescu, C., *On Three Open Problems Related to Quasi Relative Interior*, Journal of Convex Analysis, 641-645, 22 (2015).
27. Zalinescu, Constantin, *On the use of semi-closed sets and functions in convex analysis*, Open Mathematics, 1-5, 13 (2015).
28. Neff, Patrizio; Birsan, Mircea; Osterbrink, Frank, *Existence Theorem for Geometrically Nonlinear Cosserat Micropolar Model Under Uniform Convexity Requirements*, Journal of Elasticity, 119-141, 121 (2015).
29. Sadowski, T.; Birsan, M.; Pietras, D., *Multi layered and FGM structural elements under mechanical and thermal loads. Part I: Comparison of finite elements and analytical models*, Archives of Civil and Mechanical Engineering, 1180-1192, 15 (2015).
30. Blaga, A. M.; Crasmareanu, M., *Special connections in almost paracontact metric geometry*, Bulletin of the Iranian Mathematical Society, 1345-1353, 41 (2015).

31. Crasmareanu, Mircea, *Weighted Riemannian 1-manifolds for classical orthogonal polynomials and their heat kernel*, Analysis and Mathematical Physics, 373-389, 5 (2015).
32. Crasmareanu, Mircea; Frigioiu, Camelia, *Unitary vector fields are Fermi-Walker transported along Rytov-Legendre curves*, International Journal of Geometric Methods in Modern Physics, Article Number: 1550111, 12 (2015).
33. Blaga, Adara M.; Crasmareanu, Mircea, *The geometry of tangent conjugate connections*, Hacettepe Journal of Mathematics and Statistics, 767-774, 44 (2015).
34. Calin, C.; Crasmareanu, M., *Slant and legendre curves in berger  $su(2)$ : the lancret invariant and quantum spherical curves*, Taiwanese Journal of Mathematics, 1203-1214, 19 (2015).
35. Crasmareanu, Mircea; Ida, Cristian, *Almost Analyticity on Almost (Para) Complex Lie Algebroids*, Results in Mathematics, 495-519, 67 (2015).
36. Crasmareanu, Mircea; Piscoran, Laurian-Ioan, *Invariant distributions and holomorphic vector fields in paracontact geometry*, Turkish Journal of Mathematics, 467-476, 39 (2015).
37. Crasmareanu, Mircea, *Last multipliers on weighted manifolds and the weighted Liouville equation*, University Politehnica of Bucharest Scientific Bulletin-Series A-Applied Mathematics and Physics, 53-58, 77 (2015).
38. Crasmareanu, Mircea; Ida, Cristian, *Almost analytic forms with respect to a quadratic endomorphism and their cohomology*, Turkish Journal of Mathematics, 322-334, 39 (2015).
39. Morosanu, Costica; Croitoru, Anca, *Analysis of an iterative scheme of fractional steps type associated to the reaction-diffusion equation endowed with a general nonlinearity and Cauchy-Neumann boundary conditions*, Journal of Mathematical Analysis and Applications, 1225-1239, 425 (2015).
40. Croitoru, Anca; Gavrilit, Alina, *Comparison Between Birkhoff Integral and Gould Integral*, Mediterranean Journal of Mathematics, 329-347, 12 (2015).
41. Gavrilit, Alina Cristiana; Iosif, Alina Emilia; Croitoru, Anca, *The Gould integral in Banach lattices*, Positivity, 65-82, 19 (2015).
42. Celletti, Alessandra; Gales, Catalin, *Dynamical investigation of minor resonances for space debris*, Celestial Mechanics & Dynamical Astronomy, 203-222, 123 (2015).
43. Celletti, Alessandra; Gales, Catalin, *A study of the main resonances outside the geostationary ring*, Advances in Space Research, 388-405, 56 (2015).
44. Calvaruso, Giovanni; Munteanu, Marian Ioan; Perrone, Antonella, *Killing magnetic curves in three-dimensional almost paracontact manifolds*, Journal of Mathematical Analysis and Applications, 423-439, 426 (2015).
45. Jleli, Mohamed; Munteanu, Marian Ioan; Nistor, Ana Irina, *Magnetic Trajectories in an Almost Contact Metric Manifold  $R^{2N+1}$* , Results in Mathematics, 125-134, 67 (2015).
46. Druta-Romaniuc, Simona Luiza; Inoguchi, Jun-ichi; Munteanu, Marian Ioan; et al., *Magnetic curves in Sasakian manifolds*, Journal of Nonlinear Mathematical Physics, 428-447, 22 (2015).
47. Jleli, Mohamed; Munteanu, Marian Ioan, *Magnetic curves on flat para-Kahler manifolds*, Turkish Journal of Mathematics, 963-969, 39 (2015).
48. Tarnauceanu, M., *Classifying Fuzzy Normal Subgroups of Finite Groups*, Iranian Journal of Fuzzy Systems, 107-115, 12 (2015).
49. Tarnauceanu, M.; Toth, L., *Cyclicity degrees of finite groups*, Acta Mathematica Hungarica, 489-504, 145 (2015).

50. Tarnauceanu, Marius, *On Finite Groups with Dismantlable Subgroup Lattices*, Canadian Mathematical Bulletin-Bulletin Canadien De Mathematiques, 182-187, 58 (2015).
51. Tarnauceanu, Marius, *Finite Groups with a Certain Number of Cyclic Subgroups*, American Mathematical Monthly, 275-276, 122 (2015).
52. Apetrii, Marius; Matcovschi, Mihaela-Hanako; Pastravanu, Octavian; et al., *Invariance for Stochastic Differential Systems with Time-dependent Constraining Sets*, Acta Mathematica Sinica-English Series, 1171-1188, 31 (2015).
53. Gavrilit, Alina; Agop, Maricel, *A mathematical-physical approach on regularity in hit-and-miss hypertologies for fuzzy set multifunctions*, Mathematical Sciences, 181-188, 9 (2015).
54. Agop, Maricel; Gavrilit, Alina, *Some Generalized Physical Models Through Homographic Group*, Reports on Mathematical Physics, 231-246, 76 (2015).
55. Croitoru, Anca; Gavrilit, Alina, *Comparison Between Birkhoff Integral and Gould Integral*, Mediterranean Journal of Mathematics, 329-347, 12 (2015).
56. Agop, Maricel; Gavrilit, Alina; Stefan, Gavrilit; et al., *Implications of Non-Differentiable Entropy on a Space-Time Manifold*, Entropy, 2184-2197, 17 (2015).
57. Agop, Maricel; Gavrilit, Alina; Rezu, Elena, *Implications of Onicescu's informational energy in some fundamental physical models*, International Journal of Modern Physics B, Article Number: 1550045, 29 (2015).
58. Gavrilit, Alina Cristiana; Iosif, Alina Emilia; Croitoru, Anca, *The Gould integral in Banach lattices*, Positivity, 65-82, 19 (2015).
59. Agop, Maricel; Gavrilit, Stefan; Gavrilit, Alina, *SL(2, R) Invariance of the Kepler Type Motions and Shannon Informational Entropy. Uncertainty Relations Through the Constant Value of The Onicescu Informational Energy*, Reports on Mathematical Physics, 101-112, 75 (2015).
60. Gavrilit, A.; Agop, M., *Approximation Theorems for Fuzzy Set Multifunctions in Vietoris Topology. Physical Implications of Regularity*, Iranian Journal of Fuzzy Systems, 27-42, 12 (2015).
61. Arnautu, Viorel; Mosneagu, Ana-Maria, *Optimal Control and Stabilization for Some Fisher-Like Models*, Numerical Functional Analysis and Optimization, 567-589, 36 (2015).
62. Munteanu, Ionut, *Stabilization of semilinear heat equations, with fading memory, by boundary feedbacks*, Journal of Differential Equations, 454-472, 259 (2015).
63. Munteanu, Ionut, *Boundary stabilisation of the Navier-Stokes Equation with Fading Memory*, International Journal of Control, 531-542, 88 (2015).
64. Rotenstein, Eduard, *Parabolic variational inequalities with generalized reflecting directions*, Open Mathematics, 33 (2015).
65. Rotenstein, Eduard, *A multi-dimensional FBSDE with quadratic generator and its applications*, Analele Stiintifice ale Universitatii Ovidius Constanta-Seria Matematica, 213-222, 23 (2015).
66. Secu, Cristian Vasilica; Minea, Ionut; Stoleriu, Iulian, *Geostatistical modeling of water infiltration in urban soils, carpathian journal of earth and environmental sciences*, 95-104, 10 (2015).
67. I.D. Ghiba, P. Neff, M. Silhavy. *The exponentiated Hencky-logarithmic strain energy. Improvement of the proof of planar polyconvexity*, International Journal of Non-Linear Mechanics, 71, pp. 48-51, 2015.

68. P. Neff, J. Lankeit, I.D. Ghiba, R. Martin, David Steigmann. *The exponentiated Hencky-logarithmic strain energy. Part II: Coercivity, planar polyconvexity and existence of minimizers*, ZAMP, 66, pp. 1671-1693 2015.
69. P. Neff, I.D. Ghiba, J. Lankeit. *The exponentiated Hencky-logarithmic strain energy. Part I: Constitutive issues and rank-one convexity*, Journal of Elasticity, 121, pp. 143-234, 2015.
70. A. Madeo, P. Neff, I.D. Ghiba, L. Placidi, G. Rosi. *Band gaps in the relaxed linear micromorphic continuum*, ZAMM Zeitschrift für Angewandte Mathematik und Mechanik, 95, pp. 880-887, 2015.
71. I.D. Ghiba, P. Neff, A. Madeo, L. Placidi, G. Rosi. *The relaxed linear micromorphic continuum: existence, uniqueness and continuous dependence in dynamics*, Mathematics and Mechanics of Solids, 68, pp. 53-84, 2015. arXiv:1308.3762
72. A. Madeo, P. Neff, I.D. Ghiba, L. Placidi, G. Rosi. *Wave propagation in relaxed micromorphic continua: modelling metamaterials with frequency band-gaps*, Continuum Mechanics and Thermodynamics, 27, pp. 551-570, 2015.
73. P. Neff, I.D. Ghiba, M. Lazar, A. Madeo. *The relaxed linear micromorphic continuum: well-posedness of the static problem and relations to the gauge theory of dislocations*, Quarterly Journal of Mechanics and Applied Mathematics, 68 (1), pp. 53-84, 2015.
74. I.D. Ghiba, E. Bulgariu. *On spatial evolution of the solution of a non-standard problem in the bending theory of elastic plates*, IMA Journal of Applied Mathematics, accepted, 80 (2), pp. 452-473, 2015.
75. Bucur A. *Spatial behavior in linear theory of thermoviscoelasticity with voids*, JOURNAL OF THERMAL STRESSES, Volume: 38, Issue: 2, Pages: 229-249, 2015.

## **II. ARTICOLE PUBLICATE ÎN REVISTE DIN FLUXUL PRINCIPAL DE PUBLICAȚII INDEXATE BDI (MathSciNet)**

1. M. Crasmareanu, *Semi-basic 1-forms and Courant structure for metrizable problems*, Publications de L'Institut Mathematique Beograd, 98(112)(2015), 153-163.
2. Feng Feng, Naim Cagman, Violeta Leoreanu-Fotea and Muhammad Akram, *Emerging Trends in Soft Set Theory and Related Topics*, TheScientific World Journal (2015), Article ID 689457, <http://dx.doi.org/10.1155/2015/689457>
3. S. Kar, P. Sarkar and V. Leoreanu-Fotea, *On Some Interval-valued Fuzzy Hyperideals of Semihypergroups*, Afrika Matematika, Vol.26, Issue 5, pp. 1171-1186, 2015.
4. S.SH. Mousavi, V. Leoreanu-Fotea and M. Jafarpour, *Cyclic groups obtained as quotient hypergroups*, Annals of the Alexandru Ioan Cuza University - Mathematics, 2015, Tom LXI, f.1, 109-122.
5. G. Crumpei, M. Agop, A. Gavriluț, I. Crumpei Tanasă, *A transdisciplinary approach on Holy Trinity*, European Journal of Science and Theology, Vol. 11, No. 3 (2015), 149-158.
6. G. Crumpei, A. Gavriluț, M. Agop, I. Crumpei Tanasă, G. Gavriluț, *The need for a transdisciplinary approach to explain human brain structure and functioning mechanisms*, Bulletin of Integrative Psychiatry, Vol. 4, No. 67 (2015), 15-22.
7. Croitoru A., Gavriluț A., Iosif A., *Birkhoff weak integrability of multifunctions*, Journal of Pure Mathematics, Vol. (2015), 47-54.

8. M. Tărnăuceanu, *A generalization of the Euler's totient function*, Asian-Eur. J. Math., vol. 8 (2015), nr. 4, article ID 1550087, MR 3424162, ZBL 06525826.
9. M. Tărnăuceanu, *Solitary subgroups and solitary quotients of ZM-groups*, Sci. Stud. Res., Ser. Math. Inform., vol. 25 (2015), nr. 1, 237-242, MR 3384660, ZBL 06558045.

### III. ARTICOLE PUBLICATE ÎN PROCEEDINGS-URI ALE CONFERINȚELOR

1. G. Crumpei, A. Gavriluț, M. Agop, I. Crumpei Tanasă, *An approach on information from topological view*, Proceedings of the 8th Chaos 2015 International Conference, Paris, France, 26-29 May, 149-159, 2015.
2. G. Crumpei, A. Gavriluț, M. Agop, I. Crumpei Tanasă, *Brain functionality via complex systems theory*, Proceedings of the 8th Chaos 2015 International Conference, Paris, France, 26-29 May, 139-148, 2015.
3. Bors D.M., Croitoru A., Mastorakis N. – *Considerations on weak linear spaces*, Proceedings of the 2-nd International Conference on Mathematics and Computers in Sciences and Industry (MCSI-2015), August 17-19, 2015, pp. 158-161, 2015 IEEE, 978-1-4799-8673-6/15, DOI: 10.1109/MCSI.2015.26

### IV. CĂRȚI ȘI CAPITOLE DE CĂRȚI PUBLICATE LA EDITURI INTERNAȚIONALE

1. A. A. Khan, Chr. Tammer, C. Zălinescu, *Set-Valued Optimization*, Springer, Berlin, 2015.
2. M. Agop, A. Gavriluț, C. Gh. Buzea, L. Ochiuz, D. Tesloianu, G. Crumpei, C. Popa, *Quantum Mechanics*, chapter *Implications of quantum informational entropy in some fundamental physical and biophysical models*, IntechOpen, 2015, 311-343.
3. M. Agop, A. Gavriluț, D. Vasincu, D. Timofte, G. Crumpei, *Horizons in World Physics*, chapter *Possible correlations among physical frames and quantum mechanics. On wave-information-corpucle triad and cellular neural networks via non-differentiability*, Nova Science Publisher, 2015.
4. Croitoru A., Mastorakis N. – *Generalized Fuzzy Measurability*, Capitol pp. 1-17 in cartea *Computational Problems in Science and Engineering*, Lecture Notes in Electrical Engineering, Volume 343, Springer International Publishing Switzerland 2015, DOI: 10.1007/978-3-319-15765-8

### V. PREMII ȘI DISTINȚII ACADEMICE NAȚIONALE ȘI INTERNAȚIONALE

1. M. Tărnăuceanu, Premiul pentru activitate științifică pe anul universitar 2014-2015 (acordat în 2015), Universitatea "Al. I. Cuza" Iași.

## **VI. FONDURI ATRASE PENTRU CERCETARE DERULATE PRIN UNIVERSITATE (GRANTURI NAȚIONALE ȘI INTERNAȚIONALE)**

### **1. PN-II-RU-TE-2014-4-0019**

Suma derulată în 2015: 86726 lei

**Prof. dr. Marius Durea – director**

Prof. dr. Claudiu Raducu Strugariu

Lect. dr. Daniela Rosu

Marian Dumitru Pantiruc

Drd. Elena-Andreea Florea

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### **2. PN-II-RU-TE-2014-4-0320**

Suma derulată în 2015: 89996 lei

**Asist. dr. Ionel-Dumitrel Ghiba – director**

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Conf. dr. Ionel Roventa

Drd Cosmin Burtea

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### **3. PN-II-ID-PCE-2012-4-0456**

Suma derulată în 2015: 302830 lei

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Acad. Viorel Barbu - CS I

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Asist. dr. Ionuț Munteanu - ACS

Drd. Bianca Aramă - ACS

### **4. PN-II-ID-PCE-2012-4-0640**

Suma derulată în 2015: 225316 lei

**Prof. dr. Răzvan Dinu Lițcanu – director**

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Drd. Cuzub Ștefan Andrei

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### **5. PN-II-ID-PCE-2012-4-0270**

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Prof. Dr. Gabriel Dimitriu

Conf. Dr. Costică Moroșanu  
Lector Dr. Laura-Iulia Anița  
Asist. Dr. Ana-Maria Moșneagu

**6. PN-II-ID-PCE-2011-3-0154**

Suma derulată în 2015: 157171 lei

**Prof. dr. Ovidiu Cârjă - director**

Tzanko Donchev

Alina Ilinca Vieru (Lazu)

Victor Postolache

**7. PN-II-ID-PCE-2011-3-0843**

Suma derulată în 2015: 105917 lei

**Prof. Dr. Aurel Rășcanu - director**

Prof. Dr. Rainer Buckdahn

Lect. Dr. Lucian Maticiuc

Lect. Dr. Eduard Rotenstein

Cerc. Dr. Adrian Zălinescu

Drd. Bakarime Diomande

Drd. Anouar M. Gassous

**8. PN-II-ID-PCE-2011-3-0084**

Suma derulată în 2015: 191128 lei

**Prof. Dr. Constantin Zălinescu - director**

Prof. dr. Marius Durea

Prof. dr. Claudiu Răducu Strugariu

Stud. Elena Andreea Acsinte

**9. PN-II-ID-PCE-2011-3-0052**

Suma derulată în 2015: 223809 lei

**Prof. dr. Ioan I. Vrabie - director**

Conf. dr. Necula Mihai (UAIC)

Roșu Daniela (Universitatea Tehnică Gh. Asachi Iași)

Burlică Monica Dana (Universitatea Tehnică Gh. Asachi Iași)

Popescu Marius (Universitatea Dunărea de Jos, Galați)