

Raport de cercetare științifică

pentru anul 2009

1.) Denumire:

Universitatea "Al. I. Cuza" Iași, Facultatea de Matematică, Departamentul de Cercetare Științifică

SINTEZA

Membrii Departamentului de Cercetare au desfășurat o activitate de cercetare fructuoasă concretizată în 118 lucrări științifice publicate în structura : **75** în reviste internaționale cotate ISI, **16** în reviste naționale cotate ISI, **5** în reviste internaționale din BDI, **20** în volumele unor conferințe internaționale și **2** în reviste naționale din BDI. Au fost publicate **3** monografii în limba engleză și au fost **44** de participări la manifestări științifice internaționale. Această amplă activitate de cercetare a fost parțial suportată de un grant național (de tip proiect complex cu aplicații industriale) de 10 granturi de tip IDEI din cadrul PNCDI II și de un grant internațional. În comparație cu anul 2008 se constată creșterea cu **20** a numărului total de lucrări științifice publicate, creștere realizată la nivelul lucrărilor ISI publicate în reviste internaționale. Lipsa de ofertă din partea CNCSIS a dus la diminuarea cu **20** a granturilor naționale. Acest fapt, precum și diminuarea unor sume în contractele de tip IDEI, nu a influențat negativ volumul publicațiilor. Se poate concluziona că cercetarea științifică are la bază pasiunea membrilor Departamentului pentru această activitate dar nu trebuie ignorată o anumită stare de nemulțumire privind subfinanțarea cercetării, temperată acum de criza în care se află economia națională. Criza a redus la aproape jumătate, în comparație cu 2008, numărul participărilor la manifestări științifice internaționale.

Decembrie 2009

Director de Departament: prof. dr. Mihai Anastasiei.

Correspondență: anastas@uaic.ro

2.a) Domenii de cercetare

- Algebra abstractă și aplicații, algebra logicii, structuri generalizate și hiperstructuri algebrice. Aplicații ale algebrei abstracte în informatică.
- Teoria măsurii și integrării, teoreme de tip Radon-Nikodym pentru multimasuri, integrale multivoce, analiza multivoca. Optimizare vectorială cu multifuncții; probleme de echilibru vectorial.
- Geometria fibrarilor diferentiabile, geometrie Finsler și Lagrange, structuri geometrice pe varietăți diferentiabile și în fibrări diferentiabile, subvarietăți, aplicații biarmonice, geometria sistemelor de ecuații diferențiale, aplicații ale geometriei în Mecanica și Fizica teoretică. Functori de omotopie.
- Analiza neliniară, ecuații de evoluție, probleme de viabilitate și invarianța pentru incluziuni diferențiale. Controlabilitate și timp optimal;
- Ecuații diferențiale și inecuații variaționale stochastice, control optimal stochastic. Viabilitate și invarianța pentru ecuații diferențiale stochastice.
- Mecanica mediilor continue: Modele matematice ale solidelor și fluidelor, probleme specifice și metode matematice.

2.b) Infrastructura pentru cercetare/ facilitati oferite, laboratoare de cercetare

- biblioteca Seminarului Matematic "Al. Myller", cu un fond de peste 75.000 de cărți și reviste de specialitate.

2.c) Resursa umană implicată în cercetare

Personal permanent angajat			Personal cu angajament temporar		
grad didactic	numar	nr. ore/saptamana	grad didactic	numar	nr. ore/saptamana
prof.	18	266	prof.	1	4
conf.	14	149	conf.		
lect.	11	75	lect.		
asist.	7	91	asist.		
prep.	1	4	prep.		
CS I			CS I	1	20
CS II			CS II	2	65
CS III			CS III	3	107
CS			CS	3	129
ACS			ACS	9	206
drd			drd		
masteranzi			masteranzi	1	20
studenti			studenti		
alte categorii			alte categorii		

3.a.) Granturi naționale

Grant	cod	Titlu	Director	Buget 2009 (lei)
PROGRAM: PARTENERIATE ÎN DOMENIILE PRIORITARE Tip proiect: Proiect Complex	81-024	ELABORAREA, IMPLEMENTAREA SI VALIDAREA EXPERIMENTALAPE UN MODEL FUNCIONAL ORIGINAL DE CAMERA DE ARDERE A UNUI ALGORITM DE CALCUL NUMERIC PENTRU SIMULAREA CURGERILOR TURBULENTE REACTIVE COMPLEXE	ILIOI CONSTANTIN, MOROSANU COSTICA	30705 RON

3.b) Proiecte din PNCDI II

Grant	cod	Titlu	Director	Buget 2009 (lei)
PN II PROGRAMUL IDEI	13/28.09.07	FUNCTII DE SCALARIZARE SI MULTIPLICATORI LAGRANGE IN PROBLEME DE OPTIMIZARE	Prof.dr ZALINESCU Constantin	144550
PN II PROGRAMUL IDEI	15/28.09.07	CERCETARI MODERNE IN MECANICA MEDIILOR CONTINUE	Prof.dr CHIRITA Stan	236844
PN II PROGRAMUL IDEI	8/28.09.07	METODE FUNCTIONALE, DETERMINISTE SI STOCHASTICE IN DINAMICA FLUIDELOR	Prof.dr LEFTER Catalin George	165298
PN II PROGRAMUL IDEI	3/28.09.07	INCLUZIUNI DIFERENTIALE PE MULTIMI INCHISE, MULTIMI TANGENTE SI APLICATII	Prof.dr. VRABIE Ioan	200295
PN II PROGRAMUL IDEI	4/28.09.07	PRINCIPII VARIATIONALE SI CONTROL OPTIMAL	Prof.dr. CARJA Ovidiu	201512
PN II PROGRAMUL IDEI	6/28.09.07	SISTEME DIFERENTIALE CU PERTURBATII ALEATOARE; PROBLEME DE CONTROL SI VIABILITATE	Prof.dr. RASCANU Aurel	179018
PN II PROGRAMUL IDEI	1/28.09.07	INVARIANTI GEOMETRICI SI TOPOLOGICI ASOCIATI UNOR STRUCTURI GEOMETRICE PE VARIETATI. APLICATII.	Prof.dr. BUCATARU Ioan	121577
PN II PROGRAMUL IDEI	16/28.09.07	CONTROLUL OPTIMAL SI STABILIZAREA MODELELOR CONTINUE ALE DINAMICII POPULATIEI	Prof.dr. ANITA Sebastian	119800
PN II PROGRAMUL IDEI	89	MODELE GENERALIZATE ALE SOLIDELOR ELASTICE CU MICROSTRUCTURA	BIRSAN MIRCEA	91911

PN II PROGRAMUL IDEI	2228	METODE COOMOLOGICE IN GEOMETRIA ALGEBRICA SI GEOMETRIA COMPLEXA	LITCANU RAZVAN	78781
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3.c) Proiecte internationale

Grant	cod	Titlu	Director	Buget 2009 (lei)
FP7 PEOPLE Tip proiect: ITN		CONTROLLED SYSTEMS - Deterministic and Stochastic Controlled Systems and Applications UAIC - coordonator	Prof.dr.Aurel RASCANU	-

4.a) Lucrări științifice publicate în reviste naționale cotate ISI

1. Carja O, Lazu A, Regularity of the minimal time function for the heat equation An. Științ. Univ. Al. I. Cuza Iași. Mat. (N.S.) Volume: 55 Issue: 2 Pages: 355-364 Published: 2009.
2. Lefter, Cătălin-George, Feedback stabilization of two dimensional magnetohydrodynamic equations. An. Științ. Univ. Al. I. Cuza Iași. Mat. (N.S.) 55 (2009), no. 1, 21–34.
3. Lițcanu, Răzvan; Palașcă, Silvia Secret sharing and shared digital signature using elliptic curves. An. Științ. Univ. Al. I. Cuza Iași. Mat. (N.S.) 55 (2009), no. 1, 131--144.
4. Oproiu V, Papaghiuc N, Some new geometric structures of natural lift type on the tangent bundle, Bulletin Mathematique De La Societe Des Sciences Mathematiques De Roumanie, Volume: 52 Issue: 3 Pages: 333-346 Published: 2009,
5. Ioan Pop, On the homotopy functor of an I-category, An. Stiint. Univ. Al. I. Cuza Iasi. Mat. (N.S.) 55 (2009), no. 2, 233-256.
6. Precupanu, Teodor; Ionică, Iuliana Heights of a triangle in a linear normed space and Hilbertian norms. An. Științ. Univ. Al. I. Cuza Iași. Mat. (N.S.) 55 (2009), no. 1, 35--47.
7. Turinici, M. Variational statements on KST-metric structures. An. Științ. Univ. "Ovidius" Constanța Ser. Mat. 17 (2009), no. 1, 231--246.

8. Constantinescu, O., Crasmareanu M, Examples of conics arising in two-dimensional Finsler and Lagrange geometries, *Analele Stiintifice ale Universitatii Ovidius Constanta, Seria Matematica*, vol XVII, fasc. 2., 45-60.
9. Crasmareanu M, Metrizable systems of autonomous second order differential equations, *Carpathian Journal Of Mathematics* Volume: 25 Issue: 2 Pages: 163-176 Published: 2009.
10. Crasmareanu M, Baleanu D, New Aspects In Killing Tensors Of Rank Two, *Romanian Journal Of Physics* Volume: 54 Issue: 3-4 Pages: 275-280 Published: 2009.
11. Moroşanu, Costică Fractional steps method to approximate the nonlinear phase-field transition system; 2D case. *An. Ştiinţ. Univ. "Ovidius" Constanţa Ser. Mat.* 17 (2009), no. 1, 119--135.
12. Ştefănescu, Mirela; Tărnăuceanu, M. Counting maximal chains of subgroups of finite nilpotent groups. *Carpathian J. Math.* 25 (2009), no. 1, 119—127.
13. Lefter AI , Strong Solutions For Boussinesq Equations With Potentials, *Analele Stiintifice Ale Universitatii Al I Cuza Din Iasi-Serie Noua-Matematica* Volume: 55 Issue: 2 Pages: 295-328 Published: 2009
14. Hamadene S, Rotenstein E, Zălinescu A, A Generalized Mixed Zero-Sum Stochastic Differential Game And Double Barrier Reflected Bdses With Quadratic Growth Coefficient, *An. Ştiinţ. Univ. Al. I. Cuza Iaşi. Mat. (N.S.)* Volume: 55 Issue: 2 Pages: 419-444 Published: 2009.
15. Croitoru, Anca; Văideanu, Cristian On pointwise measurability of multifunctions. *An. Ştiinţ. Univ. "Ovidius" Constanţa Ser. Mat.* 17 (2009), no. 1, 69—75.
16. Gh. Iorga, I. Tofan C. Morosanu, Numerical simulation of the thickness accretions in the secondary cooling zone of a continuous casting machine, *Metalurgia International*, VOL. XIV, (2009), no.1, pag. 72-75.

4.b) Lucrări ştiinţifice publicate în reviste internaţionale cotate ISI

1. Barbu, Viorel; Da Prato, Giuseppe; Röckner, Michael Stochastic nonlinear diffusion equations with singular diffusivity. *SIAM J. Math. Anal.* 41 (2009), no. 3, 1106—1120.
2. Barbu, Viorel; Da Prato, Giuseppe; Tubaro, Luciano Kolmogorov equation associated to the stochastic reflection problem on a smooth convex set of a Hilbert space. *Ann. Probab.* 37 (2009), no. 4, 1427--1458.
3. Barbu, Viorel; Da Prato, Giuseppe; Röckner, Michael Finite time extinction for solutions to fast diffusion stochastic porous media equations. *C. R. Math. Acad. Sci. Paris* 347 (2009), no. 1-2, 81--84.

4. Barbu, Viorel; Da Prato, Giuseppe; Röckner, Michael Existence of strong solutions for stochastic porous media equation under general monotonicity conditions. *Ann. Probab.* 37 (2009), no. 2, 428—452.
5. Yan, Y.; Coca, D.; Barbu, V. Finite-dimensional controller design for semilinear parabolic systems. *Nonlinear Anal.* 70 (2009), no. 12, 4451—4475.
6. Barbu, Tudor; Barbu, Viorel; Biga, Veronica; Coca, Daniel A PDE variational approach to image denoising and restoration. *Nonlinear Anal. Real World Appl.* 10 (2009), no. 3, 1351—1361.
7. Barbu, Viorel; Da Prato, Giuseppe; Röckner, Michael Stochastic porous media equations and self-organized criticality. *Comm. Math. Phys.* 285 (2009), no. 3, 901—923, ISSN 0010-3616; 1432-0916.
8. Iannelli M, Barbu V , Stabilization of the Gurtin-MacCamy population system, *Journal Of Evolution Equations* Volume: 9 Issue: 4 Pages: 727-745 Published: NOV 2009.
9. Barbu V, Marinelli C, Strong Solutions For Stochastic Porous Media Equations With Jumps, *Infinite Dimensional Analysis Quantum Probability And Related Topics* , Volume: 12 Issue: 3 Pages: 413-426 Published: SEP 2009.
10. Barbu V, Da Prato G, Some results for the reflection problems in Hilbert spaces , *Control And Cybernetics* Volume: 37 Issue: 4 Special Issue: Sp. Iss. SI Pages: 797-810.
11. Miron, Radu; Kawaguchi, Tomoaki; Kawaguchi, Hiroaki On the Lagrangian rheonomic mechanical systems. *Proc. Rom. Acad. Ser. A Math. Phys. Tech. Sci. Inf. Sci.* 10 (2009), no. 1, 13-17 Published: JAN-APR 2009.
12. Bucataru, I., Miron, R.: The geometry of systems of third order differential equations induced by second order Lagrangians, *Mediterranean Journal of Mathematics*, vol. 6, no.4(2009), 483-500.
13. Anastasiei, Mihai; Vacaru, Sergiu I. Fedosov quantization of Lagrange-Finsler and Hamilton-Cartan spaces and Einstein gravity lifts on (co) tangent bundles. *J. Math. Phys.* 50 (2009), no. 1, 013510, 23 pp.
14. Anița, Sebastian; Fitzgibbon, William Edward; Langlais, Michel Global existence and internal stabilization for a reaction-diffusion system posed on non coincident spatial domains. *Discrete Contin. Dyn. Syst. Ser. B* 11 (2009), no. 4, 805—822.
15. Anița, Sebastian; Arnăutu, Viorel; Ștefănescu, Răzvan Numerical optimal harvesting for a periodic age-structured population dynamics with logistic term. *Numer. Funct. Anal. Optim.* 30 (2009), no. 3-4, 183—198.

16. Anița, Sebastian; Capasso, Vincenzo A stabilization strategy for a reaction-diffusion system modelling a class of spatially structured epidemic systems (think globally, act locally). *Nonlinear Anal. Real World Appl.* 10 (2009), no. 4, 2026—2035.
17. Anița, Sebastian; Langlais, Michel Stabilization strategies for some reaction-diffusion systems. *Nonlinear Anal. Real World Appl.* 10 (2009), no. 1, 345—357.
18. Cârjă, Ovidiu; Lazu, Alina Lyapunov pairs for continuous perturbations of nonlinear evolutions. *Nonlinear Anal.* 71 (2009), no. 3-4, 1012--1018.
19. Cârjă, Ovidiu; Motreanu, Dumitru Characterization of Lyapunov pairs in the nonlinear case and applications. *Nonlinear Anal.* 70 (2009), no. 1, 352—363.
20. Cârjă, Ovidiu; Necula, Mihai; Vrabie, Ioan I. Necessary and sufficient conditions for viability for semilinear differential inclusions. *Trans. Amer. Math. Soc.* 361 (2009), no. 1, 343—390.
21. Cârjă, Ovidiu; Necula, Mihai; Vrabie, Ioan I, Tangent sets, viability for differential inclusions and applications; *Nonlinear Analysis: Theory, Methods and Applications*, volume 71, issue 12, 15 december 2009, pp e979-e990.
22. Ciarletta M, Chirita S, On The Spatial Behavior In Thermoelasticity Without Energy Dissipation, *Journal Of Thermal Stresses* Volume: 32 Issue: 11 Pages: 1198-1214 Published: 2009.
23. Gales, C. and Chirita, S., On spatial behavior in linear viscoelasticity. *Quarterly of Applied Mathematics* 67 (2009), Issue 4, PII: S0033-569X-09-01149-0.
24. S. Chirita and I. D. Ghiba, Strong ellipticity and progressive waves in elastic materials with voids. *Proceedings of the Royal Society A*, published online 21 October 2009, doi: 10.1098/rspa.2009.0360.
25. S. Chirita, On some non-standard problems in linear thermoelasticity. *Journal of Thermal Stresses*, 32 (2009), Issue 12, Pages 1256 – 1269.
26. C. D'Apice and S. Chirita, On Saint Venant's principle for a linear poroelastic material in plane strain. *Journal of Mathematical Analysis and Application*, 363 (2010), Issue 2, Pages 454-467.
27. Fotea VL, Fuzzy hypermodules, *Computers & Mathematics With Applications* Volume: 57 Issue: 3 Pages: 466-475 Published: FEB 2009.
28. Leoreanu-Fotea V, Davvaz B, Join n-Spaces and Lattices, *Journal Of Multiple-Valued Logic And Soft Computing* Volume: 15 Issue: 5-6 Pages: 421-432 Published: 2009.
29. Leoreanu-Fotea V, Rosenberg IG, Homomorphisms of Hypergroupoids Associated with L-Fuzzy Sets *Journal Of Multiple-Valued Logic And Soft Computing* Volume: 15 Issue: 5-6 Pages: 537-545 Published: 2009.
30. Leoreanu-Fotea V, Davvaz B, Fuzzy hyperrings, *Fuzzy Sets And Systems* Volume: 160 Issue: 16 Pages: 2366-2378 Published: AUG 16 2009.

31. Davvaz B, Leoreanu-Fotea V , Applications of interval valued fuzzy n-ary polygroups with respect to t-norms (t-conorms) Computers & Mathematics With Applications Volume: 57 Issue: 8 Pages: 1413-1424 Published: APR 2009.
32. Leoreanu-Fotea V, Corsini P, Isomorphisms of hypergroups and of n-hypergroups with applications, Soft Computing Volume: 13 Issue: 10 Pages: 985-994 Published: AUG 2009
33. Davvaz B, Corsini P, Leoreanu-Fotea V, Fuzzy n-ary subpolygroups Computers & Mathematics With Applications Volume: 57 Issue: 1 Pages: 141-152 Published: JAN 2009
34. Ieşan, D. Binary mixtures of elastic solids with microstructure. Math. Mech. Solids 14 (2009), no. 6, 564--586.
35. Ieşan, D.; Quintanilla, R. On thermoelastic bodies with inner structure and microtemperatures. J. Math. Anal. Appl. 354 (2009), no. 1, 12--23
36. Ieşan, D. Thermal effects in orthotropic porous elastic beams. Z. Angew. Math. Phys. 60 (2009), no. 1, 138--153.
37. Ieşan D, Scalia A, Porous elastic beams reinforced by longitudinal rods, Zeitschrift Fur Angewandte Mathematik Und Physik Volume: 60 Issue: 6 Pages: 1156-1177 Published: NOV 2009
38. Ieşan D., Singular surfaces in the theory of thermoelasticity with microtemperatures, J. Thermal Stresses 32(2009), 1279-1292.
39. Lefter, Cătălin Feedback stabilization of 2D Navier-Stokes equations with Navier slip boundary conditions. Nonlinear Analysis-Theory Methods & Applications, 70 (2009), no. 1, 553—562
40. Oproiu, V.; Papaghiuc, N. General natural Einstein Kähler structures on tangent bundles. Differential Geom. Appl. 27 (2009), no. 3, 384—392
41. Ioan Pop, Directed fibrations and covering projections, Publ. Math. Debrecen, 75/3-4 (2009), 339-364
42. Ciotir, Ioana; Răşcanu, Aurel Viability for differential equations driven by fractional Brownian motion. J. Differential Equations 247 (2009), no. 5, 1505--1528.
43. Turinici M, Functional Versions Of The Caristi-Kirk Theorem , Revista De La Union Matematica Argentina Volume: 50 Issue: 1 Pages: 87-97 Published: 2009
44. Necula, Mihai; Marius Popescu, Vrabie, Ioan I., Evolution equations on locally closed graphs and applications, Nonlinear Analysis: Theory, Methods and Applications, volume 71, issue 12, 15 december 2009, pp e2205-e2216
45. Penot, J.-P.; Zălinescu, C. Convex analysis can be helpful for the asymptotic analysis of monotone operators: asymptotic analysis of monotone operators. Math. Program. 116 (2009), no. 1-2, Ser. B, 481—498, ISSN 0025-5610; 1436-4646

46. Zalinescu C , Duality results involving functions associated to nonempty subsets of locally convex spaces Revista De La Real Academia De Ciencias Exactas Fisicas Y Naturales Serie A-Matematicas Volume: 103 Issue: 2 Pages: 219-234 Published: 2009
47. C. Zalinescu, On two open problems in Convex Analysis, J. Convex Anal. 16 (2009), 1035--1038
48. M.D. Voisei, C. Zalinescu, Strongly-representable monotone operators, J. Convex Anal. 16 (2009), 1011--1033
49. Birsan, Mircea, Thermal stresses in cylindrical Cosserat elastic shells. Eur. J. Mech. A Solids 28 (2009), no. 1, Pages: 94-101
50. Birsan, Mircea On Saint-Venant's problem for anisotropic, inhomogeneous, cylindrical Cosserat elastic shells. Internat. J. Engrg. Sci. 47 (2009), no. 1, 21--38.
51. M. Birsan -- Thermal stresses in anisotropic cylindrical elastic shells, Mathematical Methods in the Applied Sciences, 2009. ISSN 0170-4214; 1099-1476
52. M. Birsan, H. Altenbach -- A mathematical study of the linear theory for orthotropic elastic simple shells, Mathematical Methods in the Applied Sciences, 2009. ISSN 0170-4214; 1099-1476
53. Bucataru, Ioan; Slawinski, Michael A. Invariant properties for finding distance in space of elasticity tensors. J. Elasticity 94 (2009), no. 2, 97—114.
54. Crasmareanu, Mircea; Hreţcanu, Cristina-Elena Last multipliers on Lie algebroids. Proc. Indian Acad. Sci. Math. Sci. 119 (2009), no. 3, 287—296.
55. Hreţcanu, Cristina-Elena; Crâşmăreanu, Mircea-Claudiu Applications of the golden ratio on Riemannian manifolds. Turkish J. Math. 33 (2009), no. 2, 179—191.
56. Crasmareanu, Mircea Fibre bundle maps and complete sprays in Finslerian setting. J. Korean Math. Soc. 46 (2009), no. 3, 551—560.
57. Crasmareanu M , Last Multipliers For Multivectors With Applications To Poisson Geometry, Taiwanese Journal Of Mathematics Volume: 13 Issue: 5 Pages: 1623-1636 Published: OCT 2009.
58. Mircea Crâşmăreanu, Liouville and geodesic Ricci solitons, C. R. Math. Acad. Sci. Paris, 347(2009), no. 21-22, 1305-1308.
59. Benincasa, T.; Moroşanu, C. Fractional steps scheme to approximate the phase-field transition system with non-homogeneous Cauchy-Neumann boundary conditions. Numer. Funct. Anal. Optim. 30 (2009), no. 3-4, 199—213.
60. Munteanu, Marian Ioan; Nistor, Ana-Irina A new approach on constant angle surfaces in \mathbb{E}^3 . Turkish J. Math. 33 (2009), no. 2, 169—178.

61. Dillen, Franki; Munteanu, Marian Ioan Constant angle surfaces in $\mathbb{H}^2 \times \mathbb{R}$. Bull. Braz. Math. Soc. (N.S.) 40 (2009), no. 1, 85—97, ISSN 1678-7544; 1678-7714.
62. Fetcu, Dorel; Oniciuc, Cezar Explicit formulas for biharmonic submanifolds in Sasakian space forms. Pacific J. Math. 240 (2009), no. 1, 85—107. ISSN 0030-8730.
63. D. Fetcu, E. Loubeau, S. Montaldo, C. Oniciuc. Biharmonic submanifolds of CP^n . Mathematische Zeitschrift, Published Online: July 28, 2009, DOI: 10.1007/s00209-009-0582-z..
64. D. Fetcu, C. Oniciuc. "Biharmonic hypersurfaces in Sasakian space forms, Differential Geometry and its Applications, 27 (2009), no. 6, 713—722.
65. Balmus A, Oniciuc C, Biharmonic Surfaces Of S^4 , Kyushu Journal Of Mathematics, Volume: 63 Issue: 2 Pages: 339-345 Published: SEP 2009.
66. Gavrilit A, Croitoru A, Non-atomicity for fuzzy and non-fuzzy multivalued set functions, Fuzzy Sets And Systems Volume: 160 Issue: 14 Pages: 2106-2116 Published: JUL 16 2009.
67. Durea M, Tammer C, Fuzzy necessary optimality conditions for vector optimization problems, Optimization Volume: 58 Issue: 4 Pages: 449-467 Published: 2009.
68. Gales C , On Spatial Behavior of the Harmonic Vibrations in Thermoviscoelastic Mixtures, Journal Of Thermal Stresses Volume: 32 Issue: 5 Pages: 512-529 Published: 2009.
69. Gavriliuț, Alina Non-atomicity and the Darboux property for fuzzy and non-fuzzy Borel/Baire multivalued set functions. Fuzzy Sets and Systems 160 (2009), no. 9, 1308—1317.
70. Apreutesei, G.; Apreutesei, N. Continuous dependence on data for bilocal difference equations. J. Difference Equ. Appl. 15 (2009), no. 5, 511—527.
71. Tărnăuceanu, Marius Subgroup commutativity degrees of finite groups. J. Algebra 321 (2009), no. 9, 2508—2520.
72. Tărnăuceanu, Marius Distributivity in lattices of fuzzy subgroups. Inform. Sci. 179 (2009), no. 8, 1163—1168.
73. Tărnăuceanu, Marius The number of fuzzy subgroups of finite cyclic groups and Delannoy numbers. European J. Combin. 30 (2009), no. 1, 283--287. ISSN: 0195-6698.
74. Lefter AI, Nonlinear feedback controllers for the Navier-Stokes equations, Nonlinear Analysis-Theory Methods & Applications Volume: 71 Issue: 1-2 Pages: 301-316 Published: JUL 1 2009.
75. Simona Druță, Kaehler-Einstein Structures of General Natural Lifted Type on the Cotangent Bundles, Balkan J. Geom. Appl., 14 (2009), 30-39.

4.c) Lucrări științifice publicate în reviste naționale indexate BDI

1. Simona Druță, Cotangent Bundles with General Natural Kahler Structures, Rev. Rou. Math. Pures Appl., 54 (2009), 13-23.
2. Eduard-Paul Rotenstein, Pricing financial derivatives by a minimizing method, Analele Universității din Timișoara, seria Matematică-Informatică, 13pp.

4.d) Lucrări științifice publicate în reviste internaționale indexate BDI

1. Mohsen Asghari-Larimi, Violeta Leoreanu-Fotea, A connection between hypergroupoids and L-Fuzzy Sets of Type 2, Italian Journal of Pure and Applied Mathematics, n. 26 (2009) 207-216.
2. Bucataru, Ioan; Dahl, Matias F. Semi-basic 1-forms and Helmholtz conditions for the inverse problem of the calculus of variations. J. Geom. Mech. 1 (2009), no. 2, 159—180, ISSN 1941-4889; 1941-4897.
3. Fetcu, Dorel; Oniciuc, Cezar On the geometry of biharmonic submanifolds in Sasakian space forms. J. Geom. Symmetry Phys. 14 (2009), 21--34. ISSN 1312-5192
4. Marius Tărnăuceanu, Hyperstructures associated to epsilon-lattices, General Mathematics, vol. 17 (2009), nr. 3, pag. 15-38.
5. Gabriela Apreutesei, Nikos E. Mastorakis, Anca Croitoru, Alina Gavrilut, On the Translation of an Almost Linear Topology, WSEAS Transactions on Mathematics, Issue 9, Volume 8, September 2009, 479-488, ISSN 1109-2769.

4. e) Lucrări științifice publicate în volume ale conferințelor

1. S. Chirita and M. Ciarletta, Spatial evolution in linear thermoelasticity. In: New Trends in Fluid and Solid Models: Proceedings of the International Conference in Honour of Brian Straughan, Vietri sul Mare (Salerno), Italy, February 28th-March 1st, 2008, World Scientific, Singapore 2009 (in colab. M. Ciarletta), pp. 37--47. ISBN: 978-981-4293-21-1, 981-4293-21-0.
2. Chirita S, Spatial Behaviour in Continuum Mechanics, Conference Information: 4th IASME/WSEAS International Conference on Continuum Mechanic (CM 09), FEB 24-26, 2009 Univ Cambridge, Cambridge, England, Proceedings Of The 4th IASME/WSEAS International Conference On Continuum Mechanics - Recent Advances In Continuum Mechanics Book

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6) Participări la manifestări științifice internaționale

1. Chirita, S., Second International Conference on New Trends in Fluid and Solid Models, March 19-21, Vietri sul Mare (Salerno), Italia;
2. Chirita, S., 8th International Congress on THERMAL STRESSES 2009, June 1-4, University of Illinois at Urbana-Champaign, USA.
3. Mircea Birsan, 7th EUROMECH Solid Mechanics Conference (ESMC 2009) September 7-11, 2009, Lisbon, Portugal
4. Mircea Birsan, 1st International Conference on Material Modeling (ICMM1) September 15 - 17, 2009, Dortmund, Germany
5. Mircea Birsan, The 9th Conference SHELL STRUCTURES Theory and Applications (SSTA 2009) October 14-16, 2009, Gdansk - Jurata, Poland
6. Oana Constantinescu, Workshop of Finsler geometry, Department of Mathematics Mai 2009, Debrecen, Ungaria,
7. Oana Constantinescu, XXIV International Workshop On Differential Geometric Methods In Theoretical Mechanics August 2009, Levico Terme (Trento), Italia
8. Oana Constantinescu, Workshop on Differential Geometry and its applications, Septembrie 2009, Iasi
9. Oana Constantinescu, 15th Inverse Days, University of Oulu si Sodankylä Geophysical Observatory , Decembrie 2009, Luosto, Finlanda
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18. Rotenstein Eduard - Worskshop on Finance and Insurance, Fakultät für Mathematik - Institut für Stochastik, 16-20 martie, 2009, Jena, Germania

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23. Anca Croitoru, 2nd WSEAS International Conference on Finite Differences-Finite Elements-Finite Volumes-Boundary Elements (F-and-B' 09), Tbilisi, Georgia, June 26-28, 2009.
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