Raport de cercetare ştiinţifică

pentru anul 2010

1.) Denumire:

Universitatea "Al. I. Cuza" Iaşi, Facultatea de Matematică, Departamentul de Cercetare Stiințifică

Director de Departament: prof. dr. Mihai Anastasiei.

Corespondență: anastas@uaic.ro

Misiune:

Departamentul de Cercetare Stiintifica a Facultatii de matematica a luat fiinta prin hotarare de Senat in 2008.

Misiunea sa principala este de a coordona activitatea stiintifica din Facultate sub toate aspectele : stabilirea domeniilor de cercetare, atragerea de fonduri de cercetare, structura resurselor umane, publicarea rezultatelor in articole stiintifice si monografii, evaluarea impactului rezultatelor cercetarii, recunoasterea valorii Departamentului in mediul academic national si international.

O sarcina importanta a Departamentului este de a prezenta raportarea anuala privind aspectele mentionate. Pentru anul 2010 aceasta raportare se poate consulta mai jos.

In 2010 membrii Departamentului de Cercetare au desfăşurat o activitate de cercetare fructuoasă concretizată în 87 lucrări ştiințifice publicate în structura : 75 in reviste cotate ISI, 6 în reviste din BDI, 2 în volumele unor conferințe internaționale şi 4 în reviste naționale.

Au fost publicate 3 monografii in limba engleză şi au fost prezentate 12 lucrari invitate la manifestări ştiințifice internaționale.

Lucrările ştiințifice ale membrilor Departamentului de Cercetare au fost citate în anul 2010 de 646 ori, din care 545 de citări sunt din reviste ISI, iar 101 din reviste indexate BDI.

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 şi de un grant internațional.

2.a) Domenii de cercetare

- Algebra abstracta si aplicatii, algebra logicii, structuri generalizate si hiperstructuri algebrice. Aplicatii ale algebrei abstracte in informatica.

- Teoria masurii si integrarii, teoreme de tip Radon-Nikodym pentru multimasuri, integrale multivoce, analiza multivoca. Optimizare vectoriala cu multifunctii; probleme de echilibru vectorial.

- Geometria fibrarilor diferentiabile, geometrie Finsler si Lagrange, structuri geometrice pe varietati diferentiabile si in fibrari diferentiabile, subvarietati, aplicatii biarmonice, geometria sistemelor de ecuatii diferentiale, aplicatii ale geometriei in Mecanica si Fizica teoretica. Functori de omotopie.

- Analiza neliniara, ecuatii de evolutie, probleme de viabilitate si invarianta pentru incluziuni diferentiale. Controlabilitate si timp optimal;

- Ecuatii diferentiale si inecuatii variationale stochastice, control optimal stochastic. Viabilitate si invarianta pentru ecuatii diferentiale stochastice.

- Mecanica mediilor continue: Modele matematice ale solidelor şi fluidelor, probleme specifice şi metode matematice.

2.b) Resursa umană implicată în cercetare

Personal **permanent** angajat			Personal cu angajament **temporar**		
grad didactic	numar	echivalent norma de cercetare	grad didactic	numar	echivalent norma de cercetare
prof.	20	9.42	prof.		
conf.	11	5.30	conf.		
lect.	13	2.65	lect.		
asist.	6	1.12	asist.		
prep.	0	0.0	prep.		
CS I			CS I		
CS II			CS II		
CS III			CS III	6	5.69
CS			CS	2	2.00
ACS			ACS	3	1.27
drd			drd		
masteranzi			masteranzi		
studenti			studenti		
alte categorii			alte categorii		

3) Articole publicate în reviste cotate ISI Web of Science

1. Anastasiei Mihai, Vacaru Sergiu; Nonholonomic Black Ring and Solitonic Solutions in Finsler and Extra Dimension Gravity Theories. Int. J. Theor. Phys,49 (2010), 1788-1804.

2. Anita, S, Capasso, V; On the stabilization of reaction-diffusion systems modeling a class of man-environment epidemics: A review; Mathematical Methods In The Applied Sciences, 33 (2010), 1235-1244.

3. Apreutesei, G, Apreutesei, N.; A Trotter-Kato type result for a second order difference inclusion in a Hilbert space; Journal Of Mathematical Analysis And Applications, 361 (2010), 195-204.

4. Arnautu, V, Mosneagu, AM; Numerical Locking Problems for Hyperbolic Equations; Numerical Functional Analysis And Optimization, 31 (2010), 549-568.

5. Balmus A, Montaldo,S, Oniciuc C; Submanifolds with biharmonic Gauss; International Journal Of Mathematics, 12 (2010), 1585-1603.

6. Balmus, A; Fetcu, D; Oniciuc, C; Harmonic and biharmonic maps; Analele Stiintifice Ale Universitatii Al I Cuza Din Iasi-Serie Noua-Matematica, 56 (2010), 81-96.

7. Balmus, A; Montaldo, S; Oniciuc, C; Biharmonic hypersurfaces in 4-dimensional space forms; Mathematische Nachrichten, 283 (2010), 1696-1705.

8. Barbu, V; Exponential stabilization of the linearized Navier-Stokes equation by pointwise feedback noise controllers; Automatica, 46 (2010), 2022-2027.

9. Barbu, V; Stabilization of a plane periodic channel flow by noise wall normal controllers; Systems & Control Letters, 59 (2010), 0167-6911.

10. Barbu, V; Self-organized criticality and convergence to equilibrium of solutions to nonlinear diffusion equations; Annual Reviews In Control, 34 (2010), 52-61.

11. Barbu, V; Albeverio, S; Ferrario, B; Uniqueness of the generators of 2D Euler and Stokes flows; Stochastic Processes And Their Applications, 120 (2010), 2102-2102.

12. Barbu, V; Da Prato, G; Invariant measures and the Kolmogorov equation for the stochastic fast diffusion equation; Stochastic Processes And Their Applications, 120(2010), 1247-1266.

13. Birsan, M; Thermal stresses in anisotropic cylindrical elastic shells; Mathematical Methods In The Applied Sciences, 33 (2010), 799-810.

14. Birsan, M; Altenbach, H; A mathematical study of the linear theory for orthotropic elastic simple shells; Mathematical Methods In The Applied Sciences, 33 (2010), 1399-1413.

15. Bucataru, I; Constantinescu, O; Helmholtz conditions and symmetries for the time dependent case of the inverse problem of the calculus of variations; Journal Of Geometry And Physics, 60 (2010), 1710-1725.

16. Bucataru, I; Dahl, MF; A geometric space without conjugate points; Balkan Journal Of Geometry And Its Applications, 15 (2010), 17-40.

17. Bucataru, I; Dahl, MF; A complete lift for semisprays; International Journal Of Geometric Methods In Modern Physics, 7 (2010), 267-287.

18. Carja, O; Lyapunov pairs for multi-valued semi-linear evolutions; Nonlinear Analysis-Theory Methods & Applications, 73 (2010), 3382-3389 .

19. Chirita, S; Ciarletta, M; On the Harmonic Vibrations in Linear Thermoelasticity Without Energy Dissipation; Journal Of Thermal Stresses, 33 (2010), 858-878.

20. Chirita, S; Ciarletta, M; Reciprocal and variational principles in linear thermoelasticity without energy dissipation; Mechanics Research Communications, 37 (2010), 271-275 .

21. Chirita, S; Ciarletta, M; Spatial behavior for some non-standard problems in linear thermoelasticity without energy dissipation; Journal Of Mathematical Analysis And Applications, 363 (2010), 454-467.

22. Chirita, S; D'Apice, C; On Saint-Venant's principle in a poroelastic arch-like region; Mathematical Methods In The Applied Sciences, 33 (2010), 1743-1754 .

23. Chirita, S; D'Apice, C; On Saint-Venant's principle for a linear poroelastic material in plane strain; Journal Of Mathematical Analysis And Applications, 363(2010), 454-467

24. Chirita, S; Ghiba, ID; Inhomogeneous plane waves in elastic materials with voids; Wave Motion, 47 (2010), 333-342.

25. Chirita, S; Ghiba, ID; Strong ellipticity and progressive waves in elastic materials with voids; Proceedings Of The Royal Society A-Mathematical Physical And Engineering Sciences, 466 (2010), 439-458.

26. Crasmareanu, M; Albeverio, S; From the Eisenhart Problem to Ricci Solitons in f-Kenmotsu Manifolds; Bulletin Of The Malaysian Mathematical Sciences Society, 33(2010), 361-368.

27. Druta, SL; The holomorphic sectional curvature of general natural kahler structures on cotangent bundles; Analele Stiintifice Ale Universitatii Al I Cuza Din Iasi-Serie Noua-Matematica , 56 (2010), 113-130.

28. Druta, SL; Oproiu, V; Tangent sphere bundles of natural diagonal lift type; Balkan Journal Of Geometry And Its Applications, 15 (2010), 53-67.

29. Durea, M; Remarks on strict efficiency in scalar and vector optimization; Journal Of Global Optimization, 47 (2010), 13-27.

30. Durea, M; Openness properties for parametric set-valued mappings and implicit multifunctions; Nonlinear Analysis-Theory Methods & Applications, 72 (2010), 571-579

31. Durea, M; Dutta, J; Tammer, C; Lagrange Multipliers for epsilon-Pareto Solutions in Vector Optimization with Nonsolid Cones in Banach Spaces; Journal Of Optimization Theory And Applications, 145 (2010), 196-211.

32. Durea, M; Strugariu, R; Quantitative results on openness of set-valued mappings and implicit multifunction theorems; Pacific Journal Of Optimization, 6 (2010), 533-549.

33. Durea, M; Strugariu, R; Necessary optimality conditions for weak sharp minima in set-valued optimization; Nonlinear Analysis-Theory Methods & Applications, 73 (2010), 2148-2157 .

34. Fotea, VL; Fuzzy join n-ary spaces and fuzzy canonical n-ary hypergroups; Fuzzy Sets And Systems, 161 (2010), 3166-3173 .

35. Gales, C; On spatial behavior of harmonic vibrations in viscoelastic Reissner-Mindlin plates; International Journal Of Solids And Structures, 48 (2010), 243-248 .

36. Gales, C; Ghiba, ID; On uniqueness and continuous dependence of solutions in viscoelastic mixtures; Meccanica, 45 (2010), 901-909.

37. Gavrilut, A; Non-atomicity and the Darboux property for fuzzy and non-fuzzy Borel/Baire multivalued set functions; Fuzzy Sets And Systems, 161 (2010), 2612-2613.

38. Gavrilut, A; Croitoru, A; Pseudo-atoms and Darboux property for set multifunctions; Fuzzy Sets And Systems, 161 (2010), 2897-2908.

39. Gavrilut, AC; A Lusin type theorem for regular monotone uniformly autocontinuous set multifunctions; Fuzzy Sets And Systems, 161 (2010), 2909-2918.

40. Gavrilut, AC; The general gould type integral with respect to a multisubmeasure; Mathematica Slovaca, 60 (2010), 289-318.

41. Gavrilut, AC; Regularity and autocontinuity of set multifunctions;Fuzzy Sets And Systems, 161 (2010), 681-693.

42. Iesan, D; Torsion of chiral Cosserat elastic rods; European Journal Of Mechanics A-Solids, 29 (2010), 990-997.

43. Iesan, D; Chiral effects in uniformly loaded rods; Journal Of The Mechanics And Physics Of Solids, 58 (2010), 1272-1285 .

44. Iesan, D; Thermal effects in chiral elastic rods; International Journal Of Thermal Sciences, 49 (2010), 1593-1599.

45. Iesan, D; Deformation of orthotropic porous elastic bars under lateral loading; Arch. Mech, 62 (2010).

46. Iesan, D, A.Scalia; Plane deformation of elastic bodies with microtemperatures; Mech.Res.Comm, 37 (2010), 617-621.

47. Lefter, CG; On a unique continuation property related to the boundary stabilization of magnetohydrodynamic equations; Analele Stiintifice Ale Universitatii Al I Cuza Din Iasi-Serie Noua-Matematica, 56 (2010), 1—15.

48. Leoreanu-Fotea, V; Davvaz, B; Binary relations on ternary semihypergroups; Communications In Algebra, 38 (2010), 3621-3636.

49. Leoreanu-Fotea, V; Davvaz, B; Intuitionistic Fuzzy n-ary Hypergroups; Journal Of Multiple-Valued Logic And Soft Computing, 16 (2010), 87-103.

50. Leoreanu-Fotea, V; Feng, F; Li, YM; Application of level soft sets in decision making based on interval-valued fuzzy soft sets; Computers & Mathematics With Applications, 60 (2010), 1756-1767.

51. Leoreanu-Fotea, V; Ma, XL; Zhan, JM; On (fuzzy) isomorphism theorems of Gamma-hyperrings; Computers & Mathematics With Applications, 60 (2010), 2594-2600.

52. Leoreanu-Fotea, V; Rosenberg, IG; Hypergroupoids determined by lattices; European Journal Of Combinatorics, 31 (2010), 925-931.

53. Leoreanu-Fotea, V; Rosenberg, IG; Join Spaces Determined by Lattices; Journal Of Multiple-Valued Logic And Soft Computing, 16 (2010), 7—16.

54. Litcanu, R; Gil, JIB; Singular Bott-Chern Classes And The Arithmetic Grothendieck Riemann Roch Theorem For Closed Immersions; Documenta Mathematica, 15 (2010), 73-176.

55. Maticiuc, L; Pardoux, E; Rascanu, A, et al.; Viscosity solutions for systems of parabolic variational inequalities; Bernoulli, 16 (2010), 258-273.

56. Maticiuc, L; Rascanu, A; A stochastic approach to a multivalued Dirichlet-Neumann problem; Stochastic Processes And Their Applications, 120 (2010), 777-800

57. Mosneagu, AM; Dura, G.; Numerical approximation of Black-Scholes equation; Analele Stiintifice Ale Universitatii "Alexandru Ioan Cuza" Din Iasi, 56 (2010), 39-64.

58. Munteanu MI; Mocanu R; Gray Curvature Identities For Almost Contact Metric Manifolds; Journal Of The Korean Mathematical Society, 47 (2010), 505-521.

59. Munteanu, M.I.; From Golden Spirals to Constant Slope Surfaces; Journal Of Mathematical Physics , 51 (2010), 1—9.

60. Necula, M; Popescu, M; Vrabie, II; Nonlinear evolution equations on locally closed graphs; Revista De La Real Academia De Ciencias Exactas Fisicas Y Naturales Serie A-Matematicas, 104 (2010), 97-114.

61. Oniciuc, C; Fetcu, D; Loubeau, E; Montaldo, S; Biharmonic submanifolds of CPn; Mathematische Zeitschrift, 266 (2010), 505-531.

62. Oproiu, V; Hyper-Kahler structures on the tangent bundle of a Kahler manifold; Balkan Journal Of Geometry And Its Applications, 15 (2010), 104-119.

63. Precupanu, A; Gayrilut, A; Croitoru, A; A fuzzy Gould type integral;Fuzzy Sets And Systems, 161 (2010), 661-680.

64. Precupanu, T; On a characterization of hilbertian norms; Analele Stiintifice Ale Universitatii Al I Cuza Din Iasi-Serie Noua-Matematica, 56 (2010), 339-342.

65. Tărnăuceanu, M; An arithmetic method of counting the subgroups of a finite abelian group ; Bull. Math. Soc. Sci. Math Roumanie, 4 (2010), 373-386.

66. Tărnăuceanu, M; A characterization of generalized quaternion 2-groups; Comptes Rendus Mathematique, 348 (2010), 731-733.

67. Tarnauceanu, M; Bentea, L; On The Total Number Of Principal Series Of A Finite Abelian Group; Analele Stiintifice Ale Universitatii Ovidius Constanta-Seria Matematica, 18 (2010), 41-52.

68. Turinici, M; Functional variational principles and coercivity over normed spaces; Optimization, 59 (2010), 199-222.

69. Turinici, M; Motreanu, D; Motreanu, VV; Coerciveness Property for Conical Nonsmooth Functionals; Journal Of Optimization Theory And Applications, 145(2010), 148-163.

70. Vrabie, II; Lorenzi, A; Identification for a semilinear evolution equation in a Banach space; Inverse Problems, 26 (2010).

71. Vrabie, II; Paicu, A; A class of nonlinear evolution equations subjected to nonlocal initial conditions; Nonlinear Analysis-Theory Methods & Applications, 72 (2010), 4091-4100.

72. Zalinescu, C; On the duality between the profit and the indirect distance functions in production theory; European Journal Of Operational Research, 207 (2010), 30-36

73. Zalinescu, C; Tammer, C; Lipschitz properties of the scalarization function and applications; Optimization, 59 (2010), 305-319.

74. Zalinescu, C; Voisei MD; Maximal monotonicity criteria for the composition and the sum under weak interiority conditions; Mathematical Programming, 123 (2010), 265-283 .

75. Zalinescu, C; Voisei, MD; Linear Monotone Subspaces of Locally Convex Spaces; Set-Valued And Variational Analysis, 18 (2010), 29-55.

4) Lucrari stiintifice publicate în reviste straine din fluxul principal de publicatii, indexate BDI

1. Gavrilut A., Croitoru A., Mastorakis N.E.;Diffusion and semi-convexity of fuzzy set multifunctions; WSEAS Transactions on Mathematics, 9 (2010), 561-570.

2. M.I. Munteanu, A.I. Nistor;New results on the geometry of translation surfaces; Journal of Geometry and Symmetry in Physics, 18 (2010), 49 – 62.

3. Tărnăuceanu Marius; On the poset of subhypergroups of a hypergroup; Int. J. Open Problems Compt. Math, 3 (2010), 115-122.

4. Ioan Pop; On movability of Pro-Morphisms; Analele Universitatii de Vest, Timisoara, Seria Matematica-Informatica, 48 (2010), 223-238.

5. Anastasiei Mihai; Metrizable linear connections in a Lie algebroid; J.Adv.Math.Studies, 3 (2010), 1-10.

6. Balan, V; Crasmareanu, M; Euclidean geometry of finsler wavefronts through gaussian curvature; Scientific Bulletin. Series A: Applied Mathematics and Physics. Politehnica University of Bucharest, 72 (2010), 3-12.

5) Articole publicate în reviste de specialitate recunoscute CNCSIS

1. C. Morosanu; An inverse problem in the phase-field transition system. The 2D case; ROMAI Journal, 6 (2010), 135-143.

2. Croitoru A; Set-norm continuity of set multifunctions; ROMAI Journal, 6 (2010), 47-56

3. F.Buium, V.Atanasiu, D.Rusu; Software System for Mechanism and Robot Simulation; Solid State Phenomena, 166(2010), 95-100.

4. Popa, E; Resolvents of kernels associated with absolutely continuous semigroups; Mathematical Reports, 12 (2010), 157-167.

6) Lucrări ştiinţifice publicate în volume ale conferinţelor

1. Barbu, V.; Optimal Stabilizable Feedback Controller for Navier-Stokes Equations; Nonlinear Analysis and Optimization I: Nonlinear Analysis, 513 (2010), 43-53 .

2. M. Birsan and H. Altenbach; Continuous dependence and instability in the linear theory of elastic shells; Shells Structures--Theory and Applications, 2 (2010), 55-58.

7) Cărţi publicate in edituri naţionale recunoscute CNCSIS

1. Croitoru, Anca ; Integrale in raport cu multimasuri; Editura Performantica, 2010, 213 pagini, ISBN; 978-973-730-743-9.

8) Cărţi publicate în edituri internaţionale

1. Viorel Barbu; Nonlinear differential equations of monotone types in Banach spaces. Springer Monographs in Mathematics; Springer, New York, 2010, 282 pagini.

2. Viorel Barbu; Stabilization of Navier Stokes Flows; Springer, New York, 2010, 276 pagini .

3. Sebastian Anița, Viorel Arnautu, Vincenzo Capasso; An Introduction to Optimal Control Problems in Life Sciences and Economics. From Mathematical Models to Numerical Simulation with MATLAB; Birkhauser, 2010, 232 pagini.

9) Manifestări ştiinţifice de amploare organizate de facultate

1. Alexandru Myller" Mathematical Seminar Centennial Conference, Iasi, Romania, June 21-26, 2010, 252 participanti.

2. The 18th conference on applied and industrial mathematics, Iasi, Romania, October 14-17, 2010, 174 participanti.

10) Lucrări invitate la conferinţe internaţionale

1. Anița Sebastian, Third Conference on Computational and Mathematical Population Dynamics, (CMPD3), Bordeaux, France, 31 May- 4 June, 2010, On the stabilization of reaction-diffusion systems modelling a class of man-environment epidemics: a review

2. Bucataru Ioan; 4th IYR Workshop on Geometry, Mechanics and Control, Ghent, Belgium, January 11-13, 2010, Helmholtz conditions for projective metrizability problem and their formal integrability.

3. Bucataru Ioan; XXV International Workshop on Differential Geometric Methods in Theoretical Mechanics,, Levico Terme (Trento), Italy, August 22-28, 2010, Symmetries and first order variation for systems of differential equations.

4. Bucataru Ioan; 16th Inverse Days, Finnish Centre of Excellence in Inverse Problems Research, Oulu, Finland, December 14–19, 2010, A geometric setting for systems of differential equations and the inverse problem of the calculus of variations.

5. Croitoru Anca; The 4-th WSEAS International Conference on Computational Intelligence (CI'10), Bucharest, Romania, April 20-22, 2010, Fuzzy type set-valued integrals.

6. Zălinescu Constantin; Advances in Optimization and Related Topics, Barcelona, November 29 to December 3, 2010, Vector variational principles for set-valued functions.

7. Zălinescu Constantin; 4th Workshop on Optimization and Variational Analysis, Elche, Spain, June 14-16 2010, Duality results involving functions associated to subsets of locally canvex space.

8. Zălinescu Constantin; Optimization Theory and Related Topics, Haifa, Israel, 11-14 January 2010; Vector variational principles for set-valued functions.

9. Florescu Liviu ; 10ème Colloque Franco-Roumain de Mathématiques Appliquées, Poitiers, France, 26-31 Août 2010, Mesures de Young en tant de minimiseurs relaxes dans le calcul des variations.

10. Vrabie I. Ioan; The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden (Germania), 25-28 Mai 2010, Nonlinear evolution inclusions with nonlocal initial conditions.

11. Ovidiu Cârjă; Workshop ”Stochastic Control and Finance” Roscoff, France, 18-23 martie 2010, On strong invariance for semilinear differential inclusions.

12. Ovidiu Cârjă; The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden (Germania), 25-28 mai 2010, A priori estimates and existence of global solutions to semilinear differential inclusions

11) Profesor invitat la Universităţi din Străinatate

1. Anița Sebastian, INRIA Bordeaux, 15 Iunie-14 Iulie 2010
2. Ieşan Dorin, Universitat Polytecnica de Catalunya (Barcelona), 1-15 septembrie 2010.
3. Leoreanu-Fotea Violeta, Southwest University of Chongqing, 3-17 July 2010.
4. Oniciuc Cezar, Texas A&M University-Commerce, 7-20 Noiembrie.
5. Mircea Birsan, Department of Engineering Sciences, University Martin-Luther Halle-Wittenberg, Halle, Germania, 01.08.2010 - 15.09.2010.
6. Ioan Bucataru; Finnish Centre of Excellence in Inverse Problems, research visit at Aalto University, Helsinki, December 9–18, 2010.

12) Premii şi distincţii academice naţionale şi internaţionale (indicator 22)

1. Mircea Crâşmăreanu; Premiul Gheorghe Titeica 2010; Premiu acordat de Academia Romana pentru un articol stiintific.
2. Marius Durea; Premiul Fundației Naționale pentru Ştiință şi Artă din Bucureşti, 2010; Premiul a fost acordat pentru rezultate remarcabile în teoria matematică a optimizării.

13) Fonduri atrase pentru cercetare

1. Elaborarea, implementarea si validarea experimentalape un model functonal original de camera de ardere a unui algoritm de calcul numeric pentru simularea curgerilor turbulente reactive complexe; PROGRAM: PARTENERIATE ÎN DOMENIILE PRIORITAR; director Prof. Dr. Ilioi Constantin, buget 2010: 3000 lei.
2. Functii de scalarizare si multiplicatori Lagrange in probleme de optimizare, PROGRAMUL IDEI; director Prof. Dr. Zalinescu Constantin, buget 2010: 135162 lei.
3. Cercetari moderne in mecanica mediilor continue; PROGRAMUL IDEI; director Prof. Dr. Chirita Stan, buget 2010: 105710 lei.
4. Metode functionale, deterministe si stochastice in dinamica fluidelor; PROGRAMUL IDEI; director Prof. Dr. Lefter Catalin George, buget 2010: 179506 lei.
5. Incluziuni diferentiale pe multimi inchise, multimi tangente si aplicatii; PROGRAMUL IDEI, director Prof. Dr. Vrabie Ioan, buget 2010: 167087 lei.

6. Principii variationale si control optimal; PROGRAMUL IDEI; director Prof. Dr. Carja Ovidiu, buget 2010: 210203 lei.

7. Sisteme diferentiale cu perturbatii aleatoare; probleme de control si viabilitate; PROGRAMUL IDEI, director Prof. Dr. Rascanu Aurel, buget 2010: 227413 lei.

8. Invarianti geometrici si topologici asociati unor structuri geometrice pe varietati. Aplicatii; PROGRAMUL IDEI, director Prof. Dr. Bucataru Ioan, buget 2010: 146000 lei.

9. Controlul optimal si stabilizarea modelelor continue ale dinamicii populatiei; PROGRAMUL IDEI, director Prof. Dr. Anita Sebastian, buget 2010: 96878 lei.

10. Modele generalizate ale solidelor elastice cu microstructura; PROGRAMUL IDEI, director Conf. Dr. Birsan Mircea, buget 2010: 100000 lei.

11. Metode coomologice in geometria algebrica si geometria complexa; PROGRAMUL IDEI, director Prof. Dr. Litcanu Razvan, buget 2010: 75000 lei.

12. Controlled systems - deterministic and stochastic controlled systems and applications UAIC coordonator: FP7 PEOPLE, director Prof. Dr. Rascanu Aurel, buget 2010: 1022404 lei.