

University of Craiova ROMANIA
Department of Applied Mathematics



**INTERNATIONAL CONFERENCE ON APPLIED MATHEMATICS
AND NUMERICAL METHODS**

Organized in memoriam of Assoc. Prof. Dr. ROMULUS MILITARU
(26.08.1968 - 20.04.2015)

Joint event

WORKSHOP ON DYNAMICAL SYSTEMS AND THEIR APPLICATIONS

Organized in the frame of the project FP7-PEOPLE-2012-IRSES-316338

PROGRAMME

Thursday, April 14 (Central building of the University, 13 A.I. Cuza Street)

8.30-9.30 **Registration**

9.30-10.00 **Opening ceremony (Blue Hall)**

Plenary talks I - Blue Hall

Chairman Constantin UDRISTE

10.00-10.30 **Mircea SOFONEA**, Université de Perpignan Via Domitia, France

Variational-Hemivariational Inequalities with Applications in Contact Mechanics

10.30-11.00 **Radu PURICE**, “Simion Stoilow” Institute of Mathematics of the Romanian Academy, Bucharest, Romania

About the Onsager-Peierls substitution

11.00-11.30 **Coffee Break**

Chairman Mircea SOFONEA

11.30-12.00 **Vicentiu RADULESCU**, University of Craiova & “Simion Stoilow” Institute of Mathematics of the Romanian Academy, Bucharest, Romania

Combined singular effects in nonlinear problems

12.00-12.30 **Ana Margarida RIBEIRO**, Universidade Nova de Lisboa, Portugal

Characterization of Sobolev spaces through functionals without derivatives dependence (joint work with C. KREISBECK and R. FERREIRA)

12.30-13.00 **Constantin UDRISTE**, University Politehnica of Bucharest, Romania

Optimal reliability allocation (joint work with Ali Sapeeh RASHEED and Saad Abbas ABED)

13.00-13.30 **Jean-Marie CROLET**, ISIFC, Besançon, France
Numerical simulations of bone remodeling in pathological cases

13.30-15.30 **Lunch**

Plenary Talks II - Blue Hall

Chairman Dana CONSTANTINESCU

15.30-16.00 **Costica MOROSANU**, "Al. I. Cuza" University, Iasi, Romania
Analysis of stability and error estimates for three methods approximating a nonlinear reaction-diffusion equation
(joint work with Silviu PAVĂL and Cătălin TRENCHIA)

Commemorative Section Romulus Militaru

16.00-16.20 **Lucian Mandache**
Numerical algorithm to manage convergence issues in time-domain analysis of dynamical systems with ferromagnetic cores
(joint work with Romulus Militaru)

16.20-16.40 **Calugăru George, Călin Liviu Adrian, Georgescu Adrian**
Numerical Engineering Software
(joint work with Romulus Militaru)

16.40-16.50 **Florin Munteanu**
Geometrical Methods and Numerical Computations for Predator-Prey Systems
(joint work with Romulus Militaru)

16.50-17.00 **Aurel Diamandescu**
Analytical and Numerical Solutions for ordinary differential equations
(joint work with Romulus Militaru)

17.00-17.30 **Coffee Break**

17.30-19.00 **Remember Romulus Militaru**

19.30-22.00 **Welcome Cocktail, Restaurant Flora**

Friday, April 15 (Faculty of Law building, 107 D, Calea București Street)

Plenary Talks III Hall 1.2

Chairman Grigory PANASSENKO

09.00-09.30 **Gheorghe MUNTEANU**, "Transilvania" University of Brasov, Romania
On the geometry of holomorphic Lie algebroids (joint work with Alexandru IONESCU)

09.30-10.00 **Mario LEFEBVRE**, Polytechnique Montréal, Canada
Estimating the Probability of Exceeding a Given River Flow Threshold

10.00-10.30 **Marin MARIN**, "Transilvania" University of Brasov, Romania
Effect of microtemperatures in mixed problem of thermoelastic micropolar bodies

10.30-11.00 **Sorin MICU**, University of Craiova, Romania
Stabilization of a Boussinesq system with localized damping

11.00-11.30

Coffee Break

Chairman Marin MARIN

11.30-12.00 **Grigory PANASSENKO**, University Jean Monnet, Saint-Etienne, France

Junction of models of different dimensions for flows in thin tube structures

12.00-12.30 **Claudia TIMOFTE**, University of Bucharest, Faculty of Physics

Microstructure Models for Composites with Imperfect Interfaces (joint work with Horia I. ENE)

12.30-13.00 **Vladimir RASVAN**, University of Craiova, Romania

A self synchronizing structure with propagation (joint work with Daniela DANCIU)

13.00-15.00

Lunch

15.00-19.00

Sections

A: Applied Mathematics in Physics, Engineering, Economics, Medicine, Biology

B: Mathematical Analysis, Differential Equations and Applications (I)

C: Algebra, Geometry and Applications

D: Numerical Analysis, Probabilities and Statistics

E: Workshop: Dynamical Systems and their Applications (I)

19.30-23.00

Galla Dinner: University Guest House

A: Applied Mathematics in Physics, Engineering, Economics, Medicine, Biology (Hall 1.3)

Chairman Claudia TIMOFTE

15.00-15.20 **Trandafir BALAN**, University of Craiova, Romania

Unification by Structural Discreteness

15.20-15.40 **Andaluzia-Cristina MATEI**, University of Craiova, Romania

On a class of mixed variational problems and some of their applications. A review of recent results.

15.40-16.00 **Gelu PASA**, "Simion Stoilow" Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania

Some non-Newtonian effects in immiscible Hele-Shaw displacement

16.00-16.20 **Costin BADICA**, University of Craiova, Romania

Simulation of Dynamic Systems Using BDI Agents (joint work with Costin BADICA and Marius BREZOVAN)

16.20-16.40 **Luminița GRECU**, University of Craiova, Romania

A numerical solution based on vortex distribution and quadratic boundary elements for the problem of the compressible fluid flow around obstacles

16.40-17.00 **Marius BREZOVAN**, University of Craiova, Romania

Fuzzyfying High-Level Petri Nets

17.00-17.30

Coffee Break

17.30-17.50

Ioana SIRBU, University of Craiova, Romania

Aspects on the Non-Radiative Transmission Lines Propagation Modeling using Finite Difference Method

- 17.50-18.10 **Adela-Janeta IONESCU**, University of Craiova, Romania *Possibilities of mathematical simulation for the morphogenesis patterns associated to dental structures*, (joint work with Evantia COLES)
- 18.10-18.30 **Dumitru BALĂ**, University of Craiova, Romania
Quantitative methods used in the analysis of tourism activity

B: Mathematical Analysis, Differential Equations and Applications (Hall 1.5)

Chairman Vicentiu RADULESCU

- 15.00-15.20 **Timur AYHAN**, Siirt University, Siirt, Turkey,
A new result on the global existence and boundedness of solutions of a kind of differential equations of third order with multiple deviating arguments
- 15.20-15.40 **Bogdan N. NICOLESCU**, University of Pitesti, Romania
Some considerations on Rayleigh-Plesset equation (joint work with Tudor PETRESCU)
- 15.40-16.00 **Ibrahim TEKIN**, Gebze Technical University, Turkey
Inverse initial boundary value problem for a first order hyperbolic system (joint work with Mansur I. ISMAILOV)
- 16.00-16.20 **Arghir ZARNESCU**, IMAR, Bucharest, Romania and Univ. of Sussex, UK
Liquid crystal point defects and their stability
- 16.20-16.40 **Flavius-Olimpiu PATRULESCU**, Romanian Academy, "Tiberiu Popoviciu" Institute of Numerical Analysis, Cluj-Napoca, Romania
Convergence results for a contact problem with wear
- 16.40-17.00 **Nicușor MINCULETE**, „Transilvania” University of Brasov, Romania
On several inequalities in an inner product space
- 17.00-17.30 **Coffee Break**
- 17.30-17.50 **Aurel DIAMANDESCU**, Universitatea din Craiova, Romania
On the Ψ - Boundedness of the Solutions of a Nonlinear Lyapunov Matrix Differential Equation
- 17.50-18.10 **Mihaela Mioara MIREA**, University of Craiova, Romania
Extensions of inequalities
- 18.10-18.30 **Yusuf SOFUOGLU**, Siirt University, Siirt, Turkey
Ordinary and fractional mathematical models on language competition and bilingualism

C: Algebra and Geometry and Applications (Hall 1.6)

Chairman Paul Popescu

- 15.00-15.20 **Constantin UDRISTE**, University Politehnica of Bucharest, Romania
Exotic structures on Descartes Folium (joint work with Adrian CONSTANTINESCU and Steluta PRICOPIE)
- 15.20-15.40 **Constantin UDRISTE**, University Politehnica of Bucharest, Romania
Viscosity solutions of multitime Hamilton-Jacobi-Isaacs-Udriste PDEs, (joint work with Elena-Laura OTOBICU and Ionel TEVY)
- 15.40-16.00 **Cristian IDA**, „Transilvania” University of Brasov, Romania
Horizontal characteristic connection on complex Riemannian foliated manifolds
- 16.00-16.20 **Vladimir SLESAR**, University of Craiova, Romania
The transverse divergence operator and taut Riemannian foliations

- 16.20-16.40 **Nicoleta VOICU**, „Transilvania" University of Brasov, Romania
Volume forms for Finsler spacetimes
- 16.40-17.00 **Elena POPOVICI**, „Transilvania" University of Brasov, Romania
Classification of contact structures associated with the CR-structure of the complex indicatrix (joint work with Nicoleta ALDEA)
- 17.00-17.15 **Coffee break**
- 17.15-17.35 **Ovidiu PASARESCU**, “Simion Stoilow” Institute of Mathematics of the Romanian Academy, Bucharest, Romania
On the Classification of Embedded Projective Curves
- 17.35-17.55 **Constantin ARCUȘ**, Secondary School CORNELIUS RADU. Rădinești Village, Romania
Geometrical aspects in the generalized almost Lie algebras category (joint work with Esmaeil PEYGHAN)
- 17.55-18.15 **Florian MUNTEANU**, University of Craiova, Romania
About a new kind of conservation laws in k -symplectic formalism
- 18.15-18.35 **Paul POPESCU**, University of Craiova, Romania
Lagrangians adapted to foliations, (joint work with Marcela POPESCU)
- 18.35-18.55 **Marcela POPESCU**, University of Craiova, Romania
Some aspects on higher order dynamics (joint work with Paul POPESCU)

D: Numerical Analysis, Probabilities and Statistics (Hall 1.7)

Chairman Gheorghe TIGAN

- 17.30-17.50 **Anca-Veronica ION**, Gh. Mihoc - C. Iacob Institute of Mathematical Statistics and Applied Mathematics of the Romanian Academy, Bucharest, Romania
A new numerical method for the Navier-Stokes equations, periodic boundary conditions (joint work with Stelian ION)
- 17.50-18.10 **Bogdan Gheorghe MUNTEANU**, Henri Coanda Air Force Academy, Brasov, Romania
Max and Min Poisson-Lomax power series distributions
- 18.10-18.30 **Cristian DINU**, University of Craiova, Romania
Some notions of probability theory on time scales
- 18.30-18.50 **Boubaker SMII**, King Fahd University, Dhahran, Saudi Arabia
Graph representation of SPDE's driven by Lévy noise

E: Workshop: Dynamical Systems and their Applications (I) (Hall 1.7)

Chairman Cristian VLADIMIRESCU

- 15.00-15.25 **Cristian LAZUREANU**, Politehnica University of Timisoara, Romania
On the ball-plate problem
- 15.25-15.50 **Higinio RAMOS**, University of Salamanca, Spain
A BDF-type block method for solving initial-value problems in ODEs
- 15.50-16.15 **Gheorghe TIGAN**, Politehnica University of Timisoara, Romania
Bifurcations in non-smooth impact oscillators
- 16.15-16.35 **Maria Raluca EFREM**, University of Craiova, Romania
Post bifurcation dynamics in a hyperchaotic system
- 16.35-17.00 **Șerban E. VLAD**, Oradea City Hall, Romania
Asynchronous flows: time reversal symmetry and the generalized technical

condition of proper operation

Saturday April 16 (Central building of the University, 13 A.I. Cuza Street)

Plenary Talks IV - Hall 443A

Chairman Mario LEFEBVRE

- 09.00-09.30 **Vladimir BALAN**, Politehica University of Bucharest, Romania
Canonically induced structures in the m -th root pseudo-Finsler framework
- 09.30-10.00 **Higinio RAMOS**, University of Salamanca, Spain
Formulas for the exact integration of products of polynomials, exponentials and sine or cosine functions
- 10.00-10.30 **Ismail Naci CANGUL**, Uludag University, Bursa, Turkey
Graph Theoretical Indices and Some Applications, (joint work with Aysun YURTTAS, Muge TOGAN and Ahmet Sinan CEVIK)
- 10.30-11.00 **Aurel BEJANCU**, Kuwait University,
A new point of view on the geometry of a 5d universe
- 11.00-11.30 **Coffee Break**
- 11.30-13.10 **B: Mathematical Analysis, Differential Equations and Applications (II)**
E: Workshop (II)
F: Control and Optimization
- 13.15-13.30 **Closing Ceremony**

B: Mathematical Analysis, Differential Equations and Applications Hall 433A

Chairman Ismail Naci CANGUL

- 11.30-11.50 **Ariana PITEA**, Politehnica University of Bucharest, Romania
A parametric approach of some optimization problems
- 11.50-12.10 **Aurelia FLOREA**, University of Craiova, Romania
About Convex Ordering Properties and Applications
- 12.10-12.30 **George POPESCU**, University of Craiova, Romania
Zero Density Subsequences for Terraced Matrices
- 12.30-12.50 **Emanuela Geanina NECSULIU**, University Politehnica of Bucharest, Romania
Numerical integration of certain DEs by means of Fuzzy transforms (joint work with **Vladimir BALAN**)

E: Workshop: Dynamical Systems and their Applications Hall 433B

Chairman Higinio RAMOS

- 11.30-11.50 **Adela IONESCU**, University of Craiova, Romania
Study on linearizing the 3D Kermack-McKendrick model of epidemics (joint work with Florian MUNTEANU)
- 11.50-12.10 **Dana CONSTANTINESCU**, University of Craiova, ROMANIA
Hamiltonian description of fast particles' dynamics in tokamak (joint work with Marian NEGREA, Iulian PETRISOR)
- 12.10-12.30 **Maria-Liliana BUCUR**, University of Craiova, Romania

- A study of some processes coming from the logistic map*
 12.30-12.50 **Florin MUNTEANU**, University of Craiova, Romania,
About symmetries, pseudosymmetries and conservation laws in k -cosymplectic formalism
- 12.50-13.10 **Nicolae VULPE**, Institute of Mathematics and Computer Science, Academy of Sciences of Moldova, Chishinau, Moldova,
Classification of quadratic differential systems with invariant hyperbolas
 (joint work with Regilene D. S. OLIVEIRA, Alex C. REZENDE and Dana SCHLOMIUK)

F: Control and Optimization Hall 433C

- Chairman Sorin Micu**
- 11.30-11.50 **Ionel ROVENTA**, University of Craiova, Romania
Approximation of the controls for beam equation with different boundary conditions
- 11.50-12.10 **Daniela DANCIU**, University of Craiova, Romania
Propagation and time delays arising from contact mechanics (joint work with Vladimir RASVAN)
- 12.10-12.30 **Laurentiu Emanuel TEMEREANCA**, University of Craiova, Romania
Approximation of the controls for the wave equation with a potential
- 12.30-12.50 **Cristian VLADIMIRESCU**, University of Craiova,
Limits of solutions to a nonlinear second-order ODE