

# Section 3: Ordinary and Partial Differential Equations, Variational Methods, Optimal Control and Mathematical Physics

Friday, June 29<sup>th</sup>, 2007

09:00–10:45 Chairman: **Toader Moroza**

- 09:00–09:45 **Vicenzo Cappasso** On the stochastic modelling of interacting populations  
10:00–10:45 **Mimo Iannelli** Growth and diffusion of a population in a fragmented habitat

## Coffee

11:15–13:00 Chairman: **Vincentiu Rădulescu**

- 11:15–12:00 **Marius Mitrea** The regularity of Green potentials in non-smooth domains  
12:15–13:00 **Gabriela Marinoschi** Well-posedness for a degenerate diffusion equation with a non-linear operator

## Lunch

15:30–19:00 Chairman: **Dan Tiba**

- 15:30–15:50 **Irina Dmitrieva** The constructive solution of the  $n$ -dimensional operator equations' systems and its application in classical Maxwell theory  
15:55–16:15 **Andrei Perjan** Singularly perturbed Cauchy problem for abstract system of linear equations in Hilbert spaces

## Coffee

- 16:45–17:15 **Kumar Sanjeev** Mathematical model of unsteady-state condition on oxygen diffusion through biological Floc particles  
17:20–17:50 **Vasile Postolică** A coincidence result between the sets of approximate efficient points and Choquet boundaries in ordered locally convex spaces

17:55–18:25 **Călin Iurie** Invariant conditions for the existence of a center for a class of cubic differential systems

## Saturday, June 30<sup>th</sup>, 2007

09:00–10:45 Chairman: **Gheorghe Nenciu**

09:00–09:45 **Horia Cornean** Adiabatically switched-on electrical bias in continuous system and the Landauer-Büttiker formula

10:00–10:45 **Pavel Exner** Inequalities for means of chords and related isoperimetric problems

### Coffee

11:15–13:00 Chairman: **Pavel Exner**

11:15–12:00 **Ovidiu Costin** TBA

12:15–13:00 **Otto Liess** Decay estimates for Fourier transforms of densities defined on surfaces

### Lunch

15:30–18:50 Chairman: **Horia Cornean**

15:45–16:15 **Rodica Luca-Tudorache** Time periodic solutions to a nonlinear second-order partial differential problem

### Coffee

16:45–17:15 **Ioana Dragomirescu** Spectral methods in hydrodynamic stability

17:20–17:40 **Boris Zachariev** New status of spectral theory for Schroedinger equation in inverse problem approach

17:45–18:15 **Dumitru Opreș** Fractional Euler-Lagrange equations for Lie algebroids

18:20–18:40 **Olivia Bundău** Hopf bifurcation for some economic models with tax evasion and delay

## Monday, July 2<sup>nd</sup>, 2007

10:00–10:45 Chairman: Viorel Barbu

10:00–10:45 **Daniel Tătaru** Blow up for some critical semilinear wave equation

11:15–12:55 Chairman: Marius Mitrea

11:15–11:45 **Nicolae Jitarășu** Asymptotic behavior of solutions of elliptic equations in the neighborhood of boundary and the boundary problems with singular boundary conditions

11:50–12:20 **Ovidiu Călin** A geometric method for computing heat kernels for Hermite-type operators

12:25–12:55 **Ovidiu Ilie Șandru** Differential operators that divide the wave operator. Application in the mathematical physics

## Lunch

15:30–18:25 Chairman: Otto Liess

15:30–16:00 **Aurelian Cernea** The maximum principle for constrained differential inclusions with delay

16:05–16:25 **Valeriu Guțu** Limit sets of weakly contracting relations with eventual condensation

## Coffee

16:45–17:15 **Narcisa Apreutesei** Fredholm property of infinite dimensional discrete operators

17:20–17:50 **Ludovic Dan Lemle**  $C_0$ -semigroups on the dual of a Banach space

17:55–18:25 **Vasile Glăvan** On the Favard-Floquet theory

18:30–18:50 **Raluca-Mihaela Georgescu** Equilibria of linear dynamical systems: analytical and algebraic approach

## Tuesday, July 3<sup>rd</sup>, 2007

09:00–10:05 Chairman: Sergiu Aizicovici

09:00–09:30 **Jenică Crînganu** Existence results for a class of nonlinear equations involving a duality mapping

09:35–10:05 **Olivian Simionescu-Panait** Spectral problems in guided waves propagation in piezoelectric crystals subject to initial fields

## Coffee

11:15–13:10 Chairman: **George Dincă**

11:15–12:00 **Jean Mawhin** Boundary value problems for nonlinear perturbations of singular or bounded  $\phi$ -Laplacians

12:05–12:35 **Cristian Bereanu** Some applications of Mawhin continuation theorem

12:40–13:10 **Petru Jebelean** Ordinary  $p$ -Laplacian systems with potential boundary conditions

## Lunch

15:45–17:40 Chairman: **Jean Mawhin**

15:45–16:15 **Marius Ghergu** Singular elliptic systems of Gierer-Meinhardt type

## Coffee

16:45–17:15 **Viorel Catană**  $M$ -hypoelliptic pseudodifferential operators on  $L^p(\mathbb{R}^n)$

17:20–17:40 **Florin Isaia** Generalized Pohozaev identities and non-existence results for  $p$ -Laplacian and  $p(x)$ -Laplacian

17:45–18:15 **Irina Meghea** On a theorem of variational calculus

18:20–18:50 **Codruța Stoica** Trichotomy in Infinite Dimensional Spaces

## Wednesday, July 4<sup>th</sup>, 2007

09:00–10:45 Chairman: **Constantin Vârsan**

09:00–09:45 **Nicolae Pavel** Range conditions in optimization and optimal control

10:00–10:45 **Sergiu Aizicovici** On a class of nonlinear boundary value problems

## Coffee

**11:15–13:00** Chairman: **Gabriela Marinoschi**

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|-------------|---------------------------|---|
| 11:15–12:00 | <b>Toader Moroza</b>      | Exponential stability of discrete time linear equations defined by positive operators on ordered Hilbert spaces |
| 12:30–13:00 | <b>Constantin Udriște</b> | Multi-time controllability obserbability and Bang-Bang principle  |

## **L u n c h**

**15:30–17:40** Chairman: **Radu Purice**

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| 15:30–16:00 | <b>Valeriu Prepeliță</b> | Controllability criteria for a class of multidimensional hybrid systems |
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## **C o f f e e**

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|-------------|------------------------|---|
| 16:45–17:15 | <b>Vasile Staicu</b>   | Multiple solutions for super linear $p$ -Laplacian Neumann problems                               |
| 17:20–17:40 | <b>Radu Moleriu</b>    | The connection between the stability of the equation and the operator norm in the stochastic case |
| 17:45–18:05 | <b>Cristina Nartea</b> | Computation of approximate inertial manifolds for a prey-predator model                           |