



Tbilisi State University

## Second Tbilisi-Salerno Workshop on Modeling in Mathematics



University of Salerno

Tbilisi, March 16-18, 2015

**Organizing Committee:** Co-chair – A. Di Nola, Co-chair – R. Grigolia, R. Botschorishvili,  
J. Gielis, I. Tavkhelidze, M. Transirico, T. Chelidze, R. Liparteliani

**Monday, March 16**

9<sup>30</sup>-10<sup>00</sup> - **R. Botschorishvili, A. Di Nola, R. Grigolia, M. Transirico:** Opening.

*Session 1 (Chair: R. Botschorishvili)*

10<sup>00</sup>-10<sup>20</sup> - **Antonio Di Nola, Revaz Grigolia, Nunu Mitskevich:** Multi Modal Epistemic  
Łukasiewicz logics with application in immune systems.

10<sup>20</sup>-10<sup>40</sup> - **Marc Thiriet:** A biological and mathematical model of acupuncture.

10<sup>40</sup>-11<sup>00</sup> - **Anna Rita Ferraioli:** Semirings in MV-algebras

*Coffee Break*

*Session 2 (Chair: M. Transirico)*

11<sup>40</sup>-12<sup>00</sup> - **T. Tadumadze, A. Nachaoui:** Sensitivity Analysis of Some Classes of Controlled  
Delay Functional.

12<sup>00</sup>-12<sup>20</sup> - **Guiseppe Dattoli:** Application of fractional derivatives to Physical problems

12<sup>20</sup>-12<sup>40</sup> - **Raffaele Cerulli:** A Column Generation Approach for the Maximum Lifetime Wireless  
Sensor Network Problems

12<sup>40</sup>-13<sup>00</sup> - Informal discussion.

*Lunch*

*Session 3 (Chair:)*

15<sup>00</sup>-15<sup>20</sup> - **Roman Koplatadze:** The Specific Properties of Solutions of the First order Differential and  
difference Equations with Several Delay Arguments.

15<sup>20</sup>-15<sup>40</sup> - **Sandra Pinelas:** Asymptotic Behavior of a Differential Equation with Several Delays and  
Advances

15<sup>40</sup>-16<sup>00</sup> - **Giovanni Felici:** Mixed Integer Optimization Models and Their Applications in Energy

*Coffee Break*

*Round Table (Chair: I. Tavkhelidze)*

16<sup>20</sup>-18<sup>00</sup> - Round table on proposed models in the framework of possible joint project

## Tuesday, March 17

### *Session 1 (Chair: R. Grigolia)*

10<sup>00</sup>-10<sup>20</sup> - **R. Botschorishvili: TBA.**

10<sup>20</sup>-10<sup>40</sup> - **Diego Caratelli:** Fourier-Like Solution of Boundary Value Problems in Supershaped Domains.

10<sup>40</sup>-11<sup>00</sup> - **Raffaele D'Ambrosio:** Structure-preserving numerical methods for evolutionary problems

*Coffee Break*

### *Session 2 (Chair: I. Tavkhelidze)*

11<sup>40</sup>-12<sup>00</sup> - **Johan Gielis:** The Simon Stevin Institute of Geometry

12<sup>00</sup>-12<sup>20</sup> - **Paolo Ricci:** Avoiding higher matrix powers in the solution of linear dynamical systems

12<sup>20</sup>-12<sup>40</sup> - **Johan Gielis:** Universal Natural Shapes

12<sup>40</sup>-13<sup>00</sup> - Informal discussion.

*Lunch*

### *Session 3 (Chair: Johan Gielis)*

15<sup>00</sup>-15<sup>20</sup> - **Ilia Tavkhelidze, Mamanti Rogava, Levan Roinishvili:** On a geometric model of bodies with "complex" configuration and some movements.

15<sup>20</sup>-15<sup>40</sup> - **Yohan Fougerolle:** R-functions and Gielis formula: From potential fields to complex domain representation and recognition.

15<sup>40</sup>-16<sup>00</sup> - **Carmine Cerrone:** Upper and Lower Bound for the Close-Enough Traveling Salesman Problem

*Coffee Break*

### *Round Table (Chair: A. Di Nola)*

16<sup>20</sup>-18<sup>00</sup> - Round table on proposed models in the framework of possible joint project

## Wednesday, March 18

### *Session 1 (Chair:)*

10<sup>00</sup>-10<sup>20</sup> - **Jemal Peradze, Zviad Tsiklauri, Gaga Papukashvili:** On the solution of a boundary value problem for the nonlinear Ball

10<sup>20</sup>-10<sup>40</sup> - **Archil Papukashvili:** On numerical solution of antiplane problems of elasticity theory for composite bodies weakened by cracks.

10<sup>40</sup>-11<sup>00</sup> - **Tinatini Davitashvili, Hamlet Meladze:** TBA

*Coffee Break*

*Session 2 (Chair:)*

11<sup>40</sup>-12<sup>00</sup> - **Bruna Germano**: TBA

12<sup>00</sup>-12<sup>20</sup> - **Zaza Khechinashvili**: Forecasting in some stochastic models represented by Gaussian martingale

12<sup>20</sup>-12<sup>40</sup> - **Tatiana Kiseliova**: Medical diagnosis using fuzzy sets: a mathematical view

12<sup>40</sup>-13<sup>00</sup> - closing of workshop .

*Lunch*

***Excursion***

***Social Dinner***

**Supported by**

Iv. Javakhishvili Tbilisi State University



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Iv. Javakhishvili Tbilisi State University and University of Salerno