

**International Workshop on the Qualitative Theory of Differential Equations
QUALITDE – 2017**

Dedicated to the 110th birthday anniversary of Professor I. Vekua

December 24 – 26, 2017

Tbilisi, Georgia

*A. Razmadze Mathematical Institute of I. Javakhishvili Tbilisi State University
6 Tamarashvili Str., Room # 612, Tbilisi 0177, Georgia*

P r o g r a m

December 24, 2017

- 10:45 – 11:00** **Opening of the Workshop**
- 11:00 – 11:30** **I. Tavkhelidze** – Analytic representation and some properties of “Bulky” links, generated by generalised Möbius-Listing’s bodies
- 11:30 – 12:00** **S. Kharibegashvili** – The boundary value problem for one class of semilinear partial differential equations
- 12:00 – 12:30** **T. Shavadze** – Variation formulas of solutions for nonlinear controlled functional differential equations with constant delay and the discontinuous initial condition
- 12:30 – 13:00** **G. Berikelashvili, B. Midodashvili** – Three-layer fully linearized difference scheme for symmetric regularized long wave equations
- 13:00 – 13:30** **T. Jangveladze** – Correctness and additive averaged semi-discrete scheme for two nonlinear multi-dimensional integro-differential parabolic problems
- 13:30 – 14:00** **Z. Kiguradze** – Convergence of finite difference scheme and uniqueness of a solution for one system of nonlinear integro-differential equations with source terms
- 14:00 – 14:30** **Coffee Break**
- 14:30 – 16:30** **Overview of the talks of participants in absentia**
- E. Bravyi** – On the solvability of a boundary value problem for fourth order linear functional differential equations
- R. Hakl, M. Zamora** – Existence and multiplicity of periodic solutions to indefinite singular equations with the phase singularities
- T. Kiguradze, N. Al-Jaber** – Ill-Posed multi dimensional boundary value problems for linear hyperbolic equations of higher order
- T. Kiguradze, A. Beaubrun** – Local solvability of multi dimensional initial-boundary value problems for higher order nonlinear hyperbolic equations
- A. Lomtadze, J. Šremr** – A theorem on differential inequalities for linear functional differential equations in abstract spaces

J. López-Gómez, P. Omari, S. Rivetti – Positive solutions of a one-dimensional superlinear indefinite capillarity-type problem

V. P. Maksimov – On a class of linear functional differential systems under integral control

S. Mukhigulashvili – The periodic type problem for the second order integro differential equations

I. Rachnková – Antiperiodic impulsive problem via distributional differential equation

A. Rontó, M. Rontó, J. Varha – Investigation of transcendental boundary value problems using Lagrange interpolation

S. Stanek – Solutions of two-term fractional differential equations on the half-line via lower and upper solutions method

C. Wang, R. P. Agarwal, D. O'Regan – The shift invariance of time scales and applications

December 25, 2017

11:00 – 11:30 **I. Astashova** – On power-law asymptotic behavior of solutions to weakly superlinear equations with potential of general form

11:30 – 12:00 **M. Ashordia** – On the numerical solvability of the Cauchy problem for systems of linear ordinary differential equations

12:00 – 12:30 **O. Jokhadze, S. Kharibegashvili** – On a mixed nonlinear hyperbolic problem

12:30 – 13:00 **T. Tadumadze** – On a delay parameter optimization problem: existence, sensitivity of a functional minimum, necessary optimality conditions

13:00 – 13:30 **N. Partsvania** – On the Neumann problem for second order differential equations with a deviating argument

13:30 – 14:00 **I. Kiguradze** – On the Cauchy weighted problem for higher order singular ordinary differential equations

14:00 – 14:30 **Coffee Break**

14:30 – 16:30 **Overview of the talks of participants in absentia**

F. Asrorov, Yu. Perestyuk, O. Kapustian – On exponential stability of invariant tori of a class of nonlinear systems

E. A. Barabanov, M. V. Karpuk, V. V. Bykov – Functions defined by n -tuples of the Lyapunov exponents of linear differential systems continuously depending on the parameter uniformly on the semiaxis

M. Bartušek, Z. Došlá, M. Marini – Asymptotic representations for oscillatory solutions of higher order differential equations

U. M. Hanung, M. Tvrđý – On the relationships between Stieltjes type integrals

N. A. Izobov, A. V. Il'in – The version of Perron's effect of replacing the values of characteristic exponents of differential system by a set of positive measure

R. I. Kadiev, A. Ponosov – Positive invertible matrices and stability of nonlinear Itô equations

E. Litsyn, A. Slavova, G. Bobeva – Studying integro-differential CNN model with applications in nano-technology

E. K. Makarov, I. V. Marchenko – On coefficient perturbation classes with degeneracies

M. Perestyuk, O. Kapustyan, I. Romaniuk – On stability properties of global attractors of impulsive infinite-dimensional systems

I. N. Sergeev – The Vinograd-Millionshchikov central exponents and their simplified variants

A. Stanzhytskyi, N. Marchuk, A. Tsukanova – On comparison theorem for neutral stochastic differential equations of reaction-diffusion type

December 26, 2017

10:00 – 12:00

Overview of the talks of participants in absentia

M. S. Belokursky, A. K. Demenchuk – Construction of partially irregular solutions of linear differential systems in critical resonant case

V. M. Evtukhov, N. P. Kolun – Asymptotics of solutions of second-order differential equations with regularly and rapidly varying nonlinearities

A. A. Grin, K. R. Schneider – Global bifurcation of a unique limit cycle in some class of planar systems

J. Jaroš, T. Kusano – Structure of nonoscillatory solutions of first order nonlinear differential systems of Emden-Fowler type

Z. Opluštil – Oscillation criteria for second-order linear advanced differential equations

S. A. Shchogolev – The analogue of the Floquet's-Lyapunov's theorem for linear differential systems with slowly varying parameters

T. Tanigawa – Existence of rapidly varying solutions of second order half-linear differential equations

12:00 – 12:30

Coffee Break

12:30 – 14:30

Overview of the talks of participants in absentia

M. O. Bilozeroва, G. A. Gerzhanovskaya – Asymptotic properties of special classes of solutions of second-order differential equations with nonlinearities in some sense near to regularly varying

O. O. Chepok – Asymptotic properties of some class of solutions of second order differential equations with rapidly and regularly varying nonlinearities

A. Czornik, M. Niezabitowski, A. Vaidzelevich – On relations between regularity coefficients of linear difference equations

O. D. Kichmarenko – Existence of optimal controls for some classes of functional-differential equations

K. S. Korepanova – Asymptotics of solutions of one class of n -th order differential equations with regularly varying nonlinearities

D. E. Limanska, G. E. Samkova – On the existence of some solutions of systems of ordinary differential equations which is partially resolved relatively to the derivatives in the case of fixed singularity

V. I. Mironenko – All solutions of the linear periodic system with the bounded reflecting matrix are bounded