**2nd INTERNATIONAL CONFERENCE ON
"MATHEMATICAL MODELLING
IN APPLIED SCIENCES"**
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**Belgorod State University, Belgorod, Russia
August 20 – 24, 2019**

Conference Program

August 20, 2019	
08h00-10h00	**Registration** BSU University Meeting Hall, 1st Floor
10h00-10h30	**Opening Ceremony** BSU Big Conference Hall, 3rd Floor
	Hall A
	First Plenary Sessions 10h30 - 12h30 Chair: S. Sitnik
10h30-11h10	D. Baleanu, Which classification of fractional operators is the best?
11h10-11h50	V. Romanovski, Hopf Bifurcations and Integrability in Some Biochemical Models
11h50-12h30	V. Kravchenko, Transmutation operator method for practical solution of forward and inverse spectral problems
12h30-14h00	**Lunch**
	First Contributed Talks (SS: 1) 14h00 – 15h40 Chairs: V. Fedorov and E. Shishkina
14h00-14h20	V. Fedorov, Degenerate distributed order differential equations in Banach spaces and applications
14h20-14h40	I. Polovinkin, On Properties of Mean Values of Solutions to Linear Hyperbolic Equations
14h40-15h00	V. Polunin, The Moisil-Theodorescu system in complex form
15h00-15h20	N. Uskova, On diagonalization of some class matrices
15h20-15h40	D. Zirem, Learning in the Hidden Markov Chain
15h40-16h10	**Coffee Break & Poster Session 1**
	Second Contributed Talks (SS: 1) 16h10 – 17h50 Chairs: V. Fedorov and E. Shishkina
16h10-16h30	E. Raetskaya, Solution of a multipoint control problem for a dynamical system in partial derivatives
16h30-16h50	M. Shevtsova, Geometric Interpretation of Solution of Differential Equation in Thermodynamics
16h50-17h10	A. Makovetskii, A generalized variational problem of point-to-point ICP
17h10-17h30	M. Dyshaev, Study of option pricing models with insufficient liquidity and transaction costs
17h30-17h50	E. Shishkina, Hyperbolic potentials generated by the Bessel operator
	Hall B
	First Contributed Talks 14h00 – 15h40 Chair: V. Romanovski
14h00-14h20	N. Levashova, Propagation and Stabilizing of a Front in a Media with Discontinuous Characteristics
14h20-14h40	V. Saenko, Integral representation of the Mittag-Leffler function
14h40-15h00	A. Melnikova, Boundary Layer Solution for an Elliptic Problem with a Singular Neumann Boundary Condition
15h00-15h20	L. Britvina, Generalized Hankel convolution with two parameters and related shift operator
15h20-15h40	A. Kulikov, Local dynamics of the dispersion version of the Cahn-Hilliard equation
15h40-16h10	**Coffee Break & Poster Session 1**
	Second Contributed Talks 16h10 – 17h50 Chair: V. Kravchenko
16h10-16h30	V. Vasilyev, Fredholm properties of elliptic operators and boundary value problems
16h30-16h50	V. Beloshapko, Peculiarities of nonlinear system of two-dimensional singularly perturbed differential equations. Time-periodic problem
16h50-17h10	E. Burlakov, On Volterra-Hammerstein Integral Inclusions and Their Applications
17h10-17h30	V. Sidoryakina, The study of the correctness of the coupled mathematical models of sediment and suspended matter transport

17h30-17h50	Y. Virchenko, Divergent second order evolution equations of solenoidal vector field on R^3

	Hall C
First Contributed Talks (SS: 2 & 4) 14h00 – 15h40 Chairs: A. Khastan et al.	
14h00-14h20	A. Khastan, Linear dynamical equations with uncertainty on time Scales
14h20-14h40	Z. Alijani, A Chebyshev based numerical methods for solving fractional fuzzy differential equations
14h40-15h00	S.S.A. Yazdi, Full Fuzzy function Approximation by using Radial Basis Function interpolation
15h00-15h20	B. Takhedmit, Uncertainty Quantification in M/G/1/N Queue with Dependent Breakdowns
15h20-15h40	S. Rathinasamy, UDE-based robust tracking control for uncertain dynamical systems
15h40-16h10	**Coffee Break & Poster Session 1**
Second Contributed Talks (SS: 2 & 4) 16h10 – 17h50 Chairs: A. Khastan et al.	
16h10-16h30	M. Panchenko, Fuzzy inference methods for flexible neuro-fuzzy systems
16h30-16h50	E. Can, Numerical Solution for a Fuzzy Fractional Population Growth
16h50-17h10	F. Cheurfa, P-boxes for uncertainty analysis of classic risk model
17h10-17h30	S. Ouazine, P-box Uncertainty Quantification of Queues Using the Taylor Series Expansion
17h30-17h50	L. Berdjoudj, Stochastic Analysis of M/G/1/1 retrial queue with impatient customers in the orbit
18:00	**Welcome party**

	August 21, 2019
	Hall A
Second Plenary Sessions 09h00 - 11h00 Chair: D. Baleanu	
09h00-09h40	J.C. Cortés, Computing the probability density function of non-stationary solutions for some significant random differential equations: Beyond means and variances
09h40-10h20	S. Sitnik, Integral Transforms Composition Method (ITCM) in Transmutation Theory
10h20-11h00	I. Perfilieva, Fuzzy Transforms Through the Prism of Galerkin Methods
11h00-11h30	**Coffee Break**
Third Contributed Talks (SS: 5) 11h30 – 12h50 Chairs: I. Dassios & I.L. Popa	
11h30-11h50	I.L. Popa, Generalized Stability for Linear Time-Varying Discrete-time Systems
11h50-12h10	D. Bukahnov, Detecting Malware Software using Articial Neural Network based on Adaptive Resonance Theory with a Hierarchical Structure of Memory
12h10-12h30	F. Boulahia, Existence and uniqueness of asymptotically w-periodic solutions of recurrent neural networks with time-varying coefficients and mixed delays
12h30-12h50	S. Dhama, Pseudo Almost Automorphic solution of a Leslie-Gower Predator Prey model on time scales
12h50-14h20	**Lunch**
Fourth Contributed Talks (SS: 5) 14h20 – 15h40 Chairs: I. Dassios & I.L. Popa	
14h20-14h40	I. Dassios, Methods in system theory, differential equations & networks for mathematical modelling
14h40-15h00	A. Jawad, Chirped bright Solitons of nonlinear Schrödinger models in optical fibers using Sech Scheme
15h00-15h20	S. Zuev, Numerical path integration and probability modelling of chaotic systems
15h20-15h40	V. Egorova, Multi-scale modelling for wildfire propagation: interplay between meso- and macro-scale factors
15h40-16h00	P. Kabalyants, Application of discrete models of dynamic systems for remote detection of cyanotoxin sources on aquatories
	Hall B
Third Contributed Talks 11h30 – 12h50 Chair: P. Surkov	
11h30-11h50	M. Al Khaleel, Nonlinear type contraction in G-metric spaces
11h50-12h10	V. Makovetsky, The constructions of transmutations for hypergeometric differential operators of higher order
12h10-12h30	S. Guenfoud, Evaluation of the Integrals of the Green's Function of the Lamb's Model Entering in the Contact Problems
12h30-12h50	A. Zvyagin, Solvability of fractional α–Voigt model with memory along the motion trajectories

12h50-14h20	**Lunch**
	Fourth Contributed Talks 14h20 – 15h40 Chair: A. Soldatov
14h20-14h40	A. Setukha, Numerical Simulation of Electromagnetic Scattering Using Boundary Hypersingular Integral Equations Method
14h40-15h00	B. Tishchenko, Existence and Stability of the Solution of the Two Stationary Diffusion Equation System With Internal Transition Layer in a Medium with Discontinuous Characteristics
15h00-15h20	L. Kovaleva, The Dirichlet problem on two-dimensional stratified sets
15h20-15h40	O. Tarasova, On some estimates for discrete boundary value problems
15h40-16h00	A. Meirmanov, Free boundary problems and homogenization on non-periodic structures
	Hall C
	Third Contributed Talks 11h30 – 12h50 Chair: Y. Virchenko
11h30-11h50	K. Mecheri, Econometric modeling of Bejaia's citrus production from 1983 to 2018
11h50-12h10	O. Chernova, Integral representation of solutions of an elliptic system
12h10-12h30	V. Devi, The application of Lagrange's operational matrix method for two-dimensional hyperbolic telegraph equation
12h30-12h50	F. Soleyman, On the finite orthogonality of q-classical polynomials
12h50-14h20	**Lunch**
	Fourth Contributed Talks 14h20 – 15h40 Chair: V. Vasilyev
14h20-14h40	G. Alexander, Bessel family of operator functions
14h40-15h00	D. Demskoi, On non-steady solutions of ideal fibre-reinforced fluids on the plane
15h00-15h20	B.S. Bigham, Two Disjoint Convex Hulls
15h20-15h40	M.F. Teodoro, Approximating the Solution of Some Advanced-Retarded Differential Equations Using a Technique Based on HAM
15h40-16h00	V. Nikolaev, On a Condition for the Existence of Solutions to the Homogeneous Schwarz Problem

	August 21, 2019
16h00-19h00	**Social Program 1: Evening Bus Tour**

	August 22, 2019
	Hall A
	Third Plenary Sessions 09h00 - 11h00 Chair: J.C. Cortés
09h00-09h40	A. Atangana, Fractional differentiation and integration above power law
09h40-10h20	R. Hilfer, Local Equilibrium in Time
10h20-11h00	H. Jafari, A numerical method for solving a type of variable order partial differential equations
11h00-11h30	**Coffee Break**
	Fifth Contributed Talks 11h30 – 12h50 Chair: S.M. Sitnik
11h30-11h50	M.V. Shamolin, Integrable Dissipative Dynamical Systems: Approach and Applications
11h50-12h10	V. Orlov, On strong solutions of a fractional nonlinear viscoelastic model of Voigt type
12h10-12h30	V. Kandu, On Nonlinear Vibrations of an Elastic Plate on a Fractional Viscoelastic Foundation
12h30-12h50	S. Pisareva, Correct solvability of nonstationary problems in Stepanov spaces
12h50-14h20	**Lunch**
	Hall B
	Fifth Contributed Talks 11h30 – 12h50 Chair: A. Meirmanov
11h30-11h50	M.L. Thivagar, A Computational Technique of Nano Topological Model via Graphs
11h50-12h10	M.D. Christober, On Nano Topological Model Induced by New Class of Generalized Closed sets
12h10-12h30	A. Soldatov, Linear Conjugation Problem for Bi-Analytic Functions in the Weighted Holder Spaces
12h30-12h50	N. Mahmudov, Ulam-Hyers stability for impulsive nonlinear time-delay systems
12h50-14h20	**Lunch**
	Hall C
	Fifth Contributed Talks 11h30 – 12h50 Chair: V. Polunin

11h30-11h50	R. Bourguiba, Positve iterative solutions for nonlinear fractional differential equations
11h50-12h10	Z. Hammouch, Mathematical modeling and analysis of some reaction-diffusion problems with nonsingular-kernel derivatives
12h10-12h30	D. Batishchev, Methods for calculating the quality criteria of medical images
12h30-12h50	A. Tiukhtina, Mathematical Problems of Atmospheric Electricity
12h50-14h20	**Lunch**

August 22, 2019	
15h00-21h00	**Social Program 2: Excursion to Belgorod region and historical places**

August 23, 2019	
Hall A	
Sixth Contributed Talks (SS: 3) 09h00 – 10h40 Chairs: A. Debbouche & C. Pinto	
09h00-09h20	I. Talib, A generalized operational matrix: An application to fractional Differential Equations
09h20-09h40	Z. Hussain, An optimized Stability model for Magnetohydrodynamic Fluid
09h40-10h00	
10h00-10h20	M. Plekhanova, Strong solutions for a class of semilinear equations with lower fractional derivatives
10h20-10h40	A. Avilovich, Degenerate fractional order differential equations in Banach spaces and applications
10h40-11h20	**Coffee Break & Poster Session 2**
Seventh Contributed Talks (SS: 3) 11h20 – 12h40 Chairs: A. Debbouche & C. Pinto	
11h20-11h40	A. Debbouche, Mathematical model involving time-fractional partial differential equations
11h40-12h00	A. Nagumanova, Linear Inverse Problems for a Class of Degenerate Fractional Differential Equations in Banach Spaces
12h00-12h20	E. Guariglia, Fractional derivative of the Lerch zeta function and Banach algebras
12h20-12h40	R.K. Maurya, Stable numerical scheme for two dimensional quasilinear fractional waves model
12h40-14h00	**Lunch**
Eighth Contributed Talks (SS: 3) 14h00 – 15h40 Chairs: A. Debbouche & C. Pinto	
14h00-14h20	R. Kalantari, A Stable and Convergent Non-Standard Finite Difference Method for Fractional Black-Scholes Model of Digital Put Option Pricing
14h20-14h40	V. Kumar, Controllability Results for Fractional Damped Dynamical Equation with Non-instantaneous Impulses
14h40-15h00	N. Belevtsov, The general solution of a fractional Bessel equation
15h00-15h20	S. Al-Sharif, On Compact Fractional Semigroup of Bounded Linear Operators
15h20-15h40	A. Nuseir, Exact solutions for generalized Benjamin-Bona-Mahony equation using direct methods
15h40-16h10	**Coffee Break**
Ninth Contributed Talks (SS: 3) 16h10 – 17h50 Chairs: A. Debbouche & C. Pinto	
16h10-16h30	C. Pinto, Autoimmune diabetes in HIV infected patients: insights from a mathematical model
16h30-16h50	P. Surkov, On the Solution Tracking Problem with Incomplete Information for the System of Nonlinear Fractional Differential Equations
16h50-17h10	R. Sibatov, Tempered fractional equation for electron transport in quantum wires with fractal disorder
17h10-17h30	T. Abdeljawad, The discrete counterpart of fractional operators with generalized Mittag-Leffler kernels
Hall B	
Sixth Contributed Talks 09h00 – 10h40 Chair: V. Vasilyev	
09h00-09h20	M. Chebbah, Simulation Improvements for efficient combination of two lower bound functions in univariate global optimization
09h20-09h40	A. Ferrag, Approximate and complete controllability of stochastic systems with impulsive effects in infinite dimension
09h40-10h00	R.A. Yahia, Quasi-boundary value method for a linear ill-posed parabolic problem

10h00-10h20	Ali Akgül, A novel method for boundary layer ow of a Powell-Eyring non-Newtonian fluid
10h20-10h40	M. Dilmi, Asymptotic analysis of viscoelastic problems with nonlinear dissipative terms
10h40-11h20	**Coffee Break & Poster Session 2**
	Seventh Contributed Talks 16h10 – 17h50 Chair: S.M. Sitnik
11h20-11h40	F. Leslous, Optimization of a Telecommunication Network
11h40-12h00	S. Hamani, Impulsive fractional differential inclusions involving Liouville-Caputo-Hadamard fractional derivatives
12h00-12h20	A. Sahari, Nucleation and growth of metallic ions onto surfaces: Mathematic view
12h20-12h40	H. Benseridi, Study of an evolution problem in a thin domain with Fourier and Tresca boundary conditions
12h40-14h00	**Lunch**
	Eighth Contributed Talks 14h00 – 15h40 Chair: V. Fedorov
14h00-14h20	M. Tilioua, Control of ferromagnetic structures at elevated temperature
14h20-14h40	M.R.S. Ammi, Optimal control of a nonlocal thermistor problem with with nonlocal and nonsingular Mittag-Leffler kernel
14h40-15h00	S. Himri, The encapsulation of some derivatives of Anilinonaphthalene sulfonate by β-Cyclodextrin: A DFT investigation
15h00-15h20	S. Lamari, Efficient basis set for the bound states of the Kane Hamiltonian in the MOSFET device geometry
15h20-15h40	N. Kribes, Surface roughness modeling by using Taguchi method on hard tuning
15h40-16h10	**Coffee Break**
	Ninth Contributed Talks (SS: 1) 16h10 – 17h50 Chair: A. Meirmanov
16h10-16h30	I. Touil, A primal-dual interior point algorithm for semidefinite programming based on a new barrier function
16h30-16h50	W. Chikouche, The transmission problem for the Laplace operator on a domain with a cuspidal point
16h50-17h10	S. Lounis, Second order differential inclusion governed by sweeping process in Hilbert spaces
17h10-17h30	L. Menniche, A logarithmic barrier method for linear programming using a new minorant function

<div align="center">Hall C</div>

	Sixth Contributed Talks 14h00 – 15h40 Chair: Y. Virchenko
09h00-09h20	S. Lingeshwaran, Analysis of solutions of p-Laplacian parabolic system with integrable data
09h20-09h40	H. Boulares, Stability analysis for fractional differential equations in Weighted Sobolev spaces
09h40-10h00	M. Dalah, Existence and Uniqueness of the Weak Solution for an Antiplane Contact Problem with Friction
10h00-10h20	J.R. Wang, Controllability of Conformable Fractional Differential Systems
10h20-10h40	F. Nouioua, Periodic Solutions for a Third-Order Nonlinear Delay Differential Equation with Variable Coefficients
10h40-11h20	**Coffee Break & Poster Session 2**
	Seventh Contributed Talks 16h10 – 17h50 Chair: A. Soldatov
11h20-11h40	N. Touafek, On a higher-order nonautonomous rational difference equation with periodic coefficients
11h40-12h00	N. Boussetila, An iterative regularization method for fractional inverse problems
12h00-12h20	R. Boukoucha, Coexistence of algebraic and non-algebraic limit cycles of a family of polynomial differential systems
12h20-12h40	I. Area, Some open problems on multivariate orthogonal polynomials on nonuniform lattices
12h40-14h00	**Lunch**
	Eighth Contributed Talks 14h00 – 15h40 Chair: O. Chernova
14h00-14h20	Ekaterina Kisileva, Mathematical model of learning system
14h20-14h40	/
14h40-15h00	/
15h00-15h20	/
15h20-15h40	/
15h40-16h10	**Coffee Break**
	Ninth Contributed Talks 14h00 – 15h40 Chair:

16h10-16h30	/
16h30-16h50	/
16h50-17h10	/
17h10-17h30	/

August 23, 2019	
19h00-23h00	**Social Program 3: Conference dinner/Banquet**

August 24, 2019	
09h00-11h00	**Scientific Meeting & Closing Ceremony** **BSU Big Conference Hall, 3rd Floor**