The 5ᵗʰ International Conference of Mathematical Society of the Republic of Moldova,
dedicated to the 55th anniversary of the foundation of
Vladimir Andrunachievici Institute of Mathematics and Computer Science (IMCS-55)

September 28 – October 1, 2019, Chişinău, Republic of Moldova

Timetable

Saturday, September 28 (Arrival):

Sunday, September 29: SOCIAL PROGRAM, EXCURSION TO ORHEIUL VECHI AND WELCOME PARTY

10.00   **Departure from the Central Scientific Library „Andrei Lupan”**
Address: 5A, Academiei str., Chişinău

Monday, September 30,

Central Scientific Library „Andrei Lupan”,
the Conference Hall
Address: 5A, Academiei str., Chişinău

REGISTRATION:
8.00 – 9.30   **Central Scientific Library „Andrei Lupan”,**
The Lobby
Address: 5A, Academiei str., Chişinău

09.30 – 10.00	Opening Session
10.00 – 11.20	Plenary Lectures
11.20 – 11.40	Coffee break
11.40 – 13.00	Plenary Lectures
13.00	A group photo of the Conference IMCS-55 participants

13.15 – 14.30   **LUNCH**

Vladimir Andrunachievici Institute of Mathematics and Computer Science,
room 340
Address: 5, Academiei str., Chişinău

14.30 – 15.50	Plenary Lectures
15.50 – 16.10	Coffee break
16.10 – 19.15	WORK IN SECTIONS

Tuesday, October 1:

Vladimir Andrunachievici Institute of Mathematics and Computer Science,
room 340
Address: 5, Academiei str., Chişinău

10.00 – 11.20	Plenary Lectures
11.20 – 11.40	Coffee break
11.40 – 13.00	Plenary Lectures
13.00 – 14.30	**LUNCH**
14.30 – 15.00	Plenary Lectures
15.15 – 16.15	WORK IN SECTIONS
16.15 – 16.45	Coffee break
16.45 – 18.30	WORK IN SECTIONS

Wednesday, October 2:   DEPARTURE

The agenda of the conference includes 40-minute plenary talks and 15-minute communications.

S C H E D U L E

Monday, September 30

Central Scientific Library „Andrei Lupan",
the Conference Hall
Address: 5A, Academiei str., Chişinău

09.30 – 10.00   **OPENING**

Plenary Lectures

10.00 – 10.40   **Dan Burghelea**
A computer-friendly alternative to Morse-Novikov theory

10.40-11.20   **Alexandr Moldovyan, Nicolai Moldovyan**
Finite Non-commutative Algebras as Carriers of Post-quantum Public-key Cryptoschemes

11.20 – 11.40	**COFFEE BREAK**

Plenary Lectures

11.40 – 12.20	**Vasile Brînzănescu** *Algebraic Methods for Bloch-Iserles Hamiltonian Systems*
12.20 – 13.00	**Verginica Barbu Mititelu** *Openly Released Corpora for Romanian*
13.00	A group photo of the IMCS-55 participants in front of Institute of Mathematics and Computer Science "Vladimir Andrunachievici"
13.15 – 14.30	**LUNCH**

Vladimir Andrunachievici Institute of Mathematics and Computer Science,
room 340
Address: 5, Academiei str., Chişinău

Plenary Lectures

14.30 – 15.10	**Sergiu Moroianu** *Gauss-Bonnet-Chern formulas on singular manifolds*
15.10– 15.50	**Costică Moroşanu** *Numerical approximation for a non-local Allen-Cahn equation supplied with non-homogeneous Neumann boundary conditions*
15.50 – 16.10	**COFFEE BREAK**

SECTION 1: Pure Mathematics

SUBSECTION 1.1: Algebra, Geometry and Topology
                   (IMCS, room 340)

Chairman:	**Alexei Kashu**
16.15 – 16.30	**Vladimir Arnautov, Galina Ermakova** *Non-discrete topologizations of some countable groups*

16.30 – 16.45   **Valeriu Popa**
On the structure of some LCA groups with commutative
π-regular ring of continuous endomorphisms

16.45 – 17.00   **Parascovia Syrbu, Ion Grecu**
On total inner mapping groups of middle Bol loops

17.00 – 17.15   **Dmitrii Moldovyan, Alexander Moldovyan, Victor Shcherbacov**
On Defining 4-Dimensional Finite Non-Commutative
Associative Algebras Over $GF(2^s)$

17.15 – 17.30   **Liubomir Chiriac, Natalia Lupasco, Natalia Josu**
On Topological AG-groupoids and Homogeneous Isotopies

17.30 – 17.45   **Eugene Kuznetsov**
Group-theoretic-free proof of Hall's theorem about finite
sharply 2-transitive permutation group

17.45 – 18.00   **Natalia Didurik, Victor Shcherbacov**
Units in quasigroups with non-classical Bol-Moufang type
identities

18.00 – 18.15   **Nadezhda Malyutina, Alexei Shcherbacov, Victor Shcherbacov**
Construction of linear binary codes using orthogonal systems
of Latin squares

18.15 – 18.30   **Fedir Sokhatsky**
About orthogonality of multiary operations

18.30 – 18.45   **Grigorii Horosh, Victor Shcherbacov, Alexandr Tcachenco, Tatiana Yatsko**
On Groupoids With Classical Bol-Moufang Type Identities

18.45 – 19.00   **Dorin Pavel**
On Set-Valued Continuous Periodic Functions on Topological
Spaces

19.00 – 19.15   **Izbash Olga, Izbash Vladimir**
On functionally completeness of quasigroups

SUBSECTION 1.2: Analysis, Differential Equations and Dynamical Systems
(IMCS, room 311)

Chairman: **Mihail Popa**

16.15 – 16.30   **Andrei Perjan, Galina Rusu**
Convergence estimates for some abstract second order differential equations in Hilbert spaces

16.30 – 16.45   **David Cheban**
Levitan Almost Periodic Solutions of Linear Partial Differential Equation

16.45 – 17.00   **Dumitru Cozma, Angela Matei**
Integrating factors of a cubic system with two parallel invariant lines and one invariant cubic

17.00 – 17.15   **Valery Dryuma**
Riemann space in theory of the Navier-Stokes Equations

17.15 – 17.30   **Vasile Neagu**
Equivalence of some algebras of singular integral operators. Noetherian criteria

17.30 – 17.45   **Cristina Bujac, Dana Schlomiuk, Nicolae Vulpe**
Configurations of invariant straight lines of the type (2,2,1,1) for a family of cubic systems

17.45 – 18.00   **Alexandru Șubă, Silvia Turuta**
Center problem and classification of cubic differential systems with the line at infinity of multiplicity three and an invariant affine straight line of multiplicity two

18.00 – 18.15   **Vadim Repeşco**
Classification of cubic systems with invariant straight lines along one direction of total multiplicity at least seven

18.15 – 18.30   **Natalia Neagu, Victor Orlov, Mihail Popa**
Center-affine invariant stability conditions of unperturbed motion governed by critical cubic differential system

18.30 – 18.45   **Iurie Calin, Valeriu Baltag**
Some classes of polynomial bidimensional cubic differential systems with the symmetry axis

18.45 – 19.00   **Iurie Calin, Stanislav Ciubotaru**
A class of bidimensional polynomial systems of differential equations with nonlinearities of the fourth degree with the symmetry axis

SECTION 2:   Applied Mathematics
(IMCS, room 301)

Chairman: **Alexander D. Kolesnik**

16.15 – 16.30   **Dmitry Lozovanu, Stefan Pickl**
Pure and Mixed Stationary Strategies for Stochastic Positional Games

16.30 – 16.45   **Lucian Trifina, Daniela Tarniceriu, Ana-Mirela Rotopanescu, Emilian Ursu**
The Inverse of A Fourth Degree Permutation Polynomial

16.45 – 17.00   **Radu Strugariu**
On directional stability of mappings

17.00 – 17.15   **Monica-Dana Burlică**
A viability problem

17.15 – 17.30   **Daniela Rosu**
Existence for a semilinear equation with delay and nonlocal initial condition

17.30 – 17.45   **Natasha Stojkovikj, Mirjana Kocaleva, Jordan Miovski and Biljana Zlatanovska**
Four color theorem - map solver

17.45 – 18.00   **Alexander Lyaletski**
On a Sequent Form of the Inverse Method

18.00 – 18.15   **Alexander D. Kolesnik**
Green's function for the telegraph equation on the unit sphere in $\mathbb{R}^3$

18.15 – 18.30   **Gheorghe Mishkoy, Lilia Mitev**
Modeling of busy period in polling models with semi-Markov switching of states

18.30 – 18.45   **Boris Hâncu, Emil Cataranciuc**
Parallel algorithm for solving 2D block-cyclic distributed bimatriceal games

18.45 – 19.00   **Boris Rybakin, Sergey Moiseenko, Grigore Secrieru**
Modeling of the formation of protostellar cores in the clouds-clouds collision

SECTION 3:   **Computer Science**
(IMCS, room 344)

Chairman: **Constantin Gaindric**

16.15 – 16.30   **Artiom Alhazov, Rudolf Freund, Sergiu Ivanov**
Rule Forms in Rewriting Systems

16.30 – 16.45   **Lyudmila Burtseva**
Enhancement of Historical Documents Scans by P system based Image Processing Techniques

16.45 – 17.00   **Svetlana Cojocaru, Constantin Gaindric, Galina Magariu, Tatiana Verlan, Elena Zamsa**
Information system support for Cerebrovascular Accident prophylaxis

17.00 – 17.15   **Victor Ababii, Viorica Sudacevschi, Mariana Oşovschi, Ana Ţurcan, Ana Nistiriuc, Dimitrie Bordian, Silvia Munteanu**
Distributed System for Real-Time Collective Computing

17.15 – 17.30   **Inga Titchiev**
Petri nets approach to solve logical problems

17.30 – 17.45   **Valeriu Ungureanu**
Steepest Descent Method in the Wolfram Language and Mathematica System

17.45 – 18.00   **Andrei Braicov, Ivan Budanaev and Mircea Petic**
Risk Detection Algorithm Design: Officer Fall Case Study

Tuesday, October 1:

Vladimir Andrunachievici Institute of Mathematics and Computer Science, room 340

Plenary Lectures

10.00 – 10.40   **Mitrofan M. Cioban, Ekaterina P. Mihaylova**
Convex families of sets on topological spaces

10.40-11.20   **Aleksandra Mileva**
Recent Developments in IoT Steganography

11.20 – 11.40   **COFFEE BREAK**

Plenary Lectures

11.40 – 12.20   **Vasile Berinde**
Improving some fixed point techniques from applied nonlinear analysis

12.20 – 13.00   **Yaroslav Bihun, Roman Petryshyn, Ihor Skutar**
On averaging in multifrequency systems with linearly transformed arguments

13.00 – 14.30   **LUNCH**

Vladimir Andrunachievici Institute of Mathematics and Computer Science, room 340

Plenary Lectures

14.30 – 15.00   **Victor Ufnarovski**
When a commutator of two matrices has rank one?

SECTION 1:   Pure Mathematics
(IMCS, room 340)

Chairman: Vladimir Izbash

15.15 – 15.30   **Omer Gok**
On extensions of d-lattice bimorphisms

15.30 – 15.45 **Taras Goy**
On Generalized Brioschi's Formula and its Applications

15.45 – 16.00 **Mariana-Geanina Zaharia**
Some remarks regarding Fibonacci and Lucas numbers

16.00 – 16.15 **Radu Vasile**
Building BCK-Algebras of higher order using new BCK Extensions

16.15 – 16.45 **COFFEE BREAK**

16.45 – 17.00 **Galina Banaru**
On Einstein six-dimensional planar Hermitian submanifolds of Cayley algebra

17.00 – 17.15 **Mihail Banaru**
On some almost contact metric hypersurfaces of Kählerian manifolds

17.15 – 17.30 **Alexandru Lungu**
On the theory of finite crystallographic groups of cyclical W_p-symmetry

17.30 – 17.45 **Ivan Gutsul**
On tiling H^3 by polyhedra with irrational relative to π dihedral angles

17.45 – 18.00 **Elizaveta Zamorzaeva**
On normal 3-isohedral spherical tilings for group series $*nn$, nn, $*22n$ and $n*$

18.00 – 18.15 **Andrei Rusu, Elena Rusu**
On completeness as to $\neg$-expressibility in a 4-valued provability logic

18.15 – 18.30 **Florin Damian**
Construction of a hyperbolic 5-manifold with cusps

SECTION 2: Applied Mathematics
(IMCS, room 301)

Chairman: **Dmitrii Lozovanu**

15.15 – 15.30   **Elisabete Alberdi, Joseba Makazaga, Ander Murua, Mikel Antonana**
An algorithm based on continuation techniques for minimization problems with non-linear equality constraints

15.30 – 15.45   **Frank Vega**
Triangle Finding

15.45 – 16.00   **Irinel Dragan**
On the Coalitional Rationality and the Egalitarian Nonseparable Contribution

16.00 – 16.55   **Yuri Menshikov**
On the stability of approximate solutions of the inverse synthesis problem

16.15 – 16.45   **COFFEE BREAK**

16.45 – 17.00   **Vladimir Pațiuc, Galina Rîbacova**
On determining coefficients matrices for transmission line equations

17.00 – 17.15   **Mario Lefebvre**
Optimal control of a stochastic system related to the Kermack-McKendrick model

17.15 – 17.30   **Alexandra Tkacenko**
Method for solving fuzzy fractional multi-criteria transportation problem of "bottleneck" type

17.30 – 17.45   **Boris Rybakin, Grigore Secrieru, Elena Gutuleac**
Computer simulation of impulsive loading on buried projectile

17.45 – 18.00   **Elena Cebotaru**
Linear stability interval for geometrical parameter of the Newtonian eight bodies problem

18.00 – 18.15   **Tatiana Pașa, Valeriu Ungureanu**
Solving the non-linear 4-index transportation problem

18.15 – 18.30 **Galina Sprincean**
Chebyshev parameters applied to modeling nonlinear processes in semiconductor devices

18.30 – 18.45 **Radu Buzatu**
On the maximum nontrivial convex cover number of the join of graphs

SECTION 3: Computer Science
(IMCS, room 344)

Chairman: **Alexei Averkin**

15.15 – 15.45 **Veaceslav Albu**
Encapsulating the Concept of Information in Scientific Paradigm of Reality: A Possible Scenario of a Theory of Everything

15.45 – 16.00 **Victoria Bobicev, Yulia Hlavcheva, Olga Kanishcheva**
Can Computers Catch the Authors Style?

16.00 – 16.15 **Aleksandra Stojanova, Dušan Bikov, Aleksandra Mileva, Yunqing Xu**
Investigation of Some Cryptographic Properties of the 8x8 S-boxes Created by Quasigroups

16.15 – 16.45 **COFFEE BREAK**

16.45 – 17.00 **Constantin Ciubotaru, Valentina Demidova, Tudor Bumbu**
Generation of the Romanian Cyrillic lexicon for the period 1967 -- 1989

17.00 – 17.15 **Alexandru Colesnicov, Svetlana Cojocaru, Mihaela Luca, Ludmila Malahov**
On Digitization of Documents with Script Presentable Content

17.15 – 17.30 **Olesea Caftanatov**
A new approach of designing the Intelligent Tutoring System "GeoMe"

17.30 – 17.45 **Vladimir Popukaylo**
Features of building analytical enterprise-systems in R