

# The Tenth Congress of Romanian Mathematicians

*June 30–July 5, 2023, Pitești, Romania*

## PROGRAM

FRIDAY, JUNE 30, 2023

15:00–16:00 *Opening Ceremony*

### Coffee Break

#### Section 1 *Algebra and Number Theory*

*Session 1.A* (Algebra)

Chairperson: Andrei Mărcuș

16:30–16:55	<b>Simion Breaz</b>	Change of scalars and bounded silting complexes
17:00–17:25	<b>George Ciprian Modoi</b>	Migration of silting-like properties via adjoint pairs
17:30–17:55	<b>Daniel Bulacu</b>	On sovereign, balanced and ribbon (quasi-)Hopf algebras
18:00–18:25	<b>Mihai Chiș</b>	An average equal to 1 for every non-trivial finite group
18:30–18:55	<b>Nil Şahin</b>	4 generated pseudo symmetric semigroups and their homogeneity
19:00–19:25	<b>Virgilius-Aurelian Minuță</b>	An exact sequence for the graded Picent group

*Session 1.B* (Number Theory)

Chairperson: Vicențiu Pașol

16:30–16:55	<b>George Turcaș</b>	On $p$ -isogenies of elliptic curves with multiplicative reduction
17:00–17:25	<b>Oana Pădurariu</b>	Rational points on Atkin-Lehner quotients of geometrically hyperelliptic Shimura curves

#### Section 2 *Algebraic, Complex and Differential Geometry and Topology*

Chairperson: Vasile Brînzănescu

16:30–17:20	<b>Ciprian Manolescu</b>	Khovanov homology and four-dimensional topology
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17:30–18:20	<b>Andrei Neaguț</b>	Quantum groups and quiver varieties
18:30–19:20	<b>Alexandra Otiman</b>	Bott-Chern cohomology of compact Vaisman manifold

*Special Session* *Geometry of Submanifolds and its Applications*

Chairperson: Bogdan Suceavă

17:30–17:55	<b>Simona Decu (Marinescu)</b>	Casorati inequalities for statistical submanifolds
18:00–18:25	<b>Magdalena Toda</b>	Curvature functionals, elastic Willmore-type energies, and applications to Physics and Biophysics

### **Section 3** *Real and Complex Analysis, Potential Theory*

Chairperson: Lucian Beznea

16:30–17:20	<b>Victor Lie</b>	A hierarchical structure within Harmonic Analysis; The trilinear Hilbert transform
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*Special Session* *Sobolev Spaces in the Metric Setting*

Chairperson: Șerban Costea

17:30–18:20	<b>Jeremy Tyson</b>	Quasiconformal and Sobolev distortion of Assouad-type dimensions
18:30–19:20	<b>Carlos Pérez</b>	Extensions of Sobolev inequalities

### **Section 4** *Ordinary and Partial Differential Equations, Controlled Differential Systems*

Chairperson: Radu Precup

16:30–17:20	<b>Cătălin Trenchea</b>	Numerical modeling of fluid-structure interaction
17:30–17:55	<b>Ioan Bejenaru</b>	Stability and instability for geometric PDEs
18:00–18:25	<b>Aurelian Cernea</b>	On a class of hyperbolic fractional integro-differential inclusions
18:30–18:55	<b>Rodica Toader</b>	Homogenisation problems for a class of free discontinuity functionals
19:00–19:25	<b>Cristian Cazacu</b>	Recent results on Hardy inequalities for magnetic $p$ -Laplacians

*Special Session* *Recent Advances in Partial Integro-Differential Eqns*

Chairperson: Lorena Bociu

17:30–17:55	<b>Mikil Foss</b>	Traces for non-differentiable functions on irregular domains
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18.00–18.25	<b>Hidde Shönberger</b>	A variational theory for integral functionals involving finite-horizon fractional gradients
18.30–18.55	<b>Ciprian Gal</b>	On fractional in time diffusion equations
19.00–19.25	<b>Maria-Magdalena Boureau</b>	Multiple weak solutions for anisotropic systems with variable exponents

**Section 5** *Functional Analysis, Operator Theory and Operator Algebras, Mathematical Physics*

Chairperson: Bogdan Nica

16:30–17:20	<b>Florian-Horia Vasilescu</b>	Quotient range operators in commutative and noncommutative frameworks
17:30–18:20	<b>Hari Bercovici</b>	The support of free convolutions
18:30–18:55	<b>Liviu Păunescu</b>	Examples of countable groups stable in permutations
19:00–19:25	<b>Aurel Stan</b>	Random variables with overlapping number operator and Weyl algebras

**Section 6** *Probability, Stochastic Analysis, and Mathematical Statistics*

Chairperson: Victor-Emmanuel Brunel

16:30–16:55	<b>Vlad Barbu</b>	Divergence measures and their use in statistical inference
17:00–17:25	<b>Valentin Patilea</b>	Regularity estimation in multivariate functional data analysis
17:30–17:55	<b>Cristian Preda</b>	Learning with categorical functional data
18:00–18:25	<b>Flavia Mitroi-Symeonidis</b>	The permutation entropy and its applications on full-scale compartment fire data
18:30–18:55	<b>Eduard Rotenstein</b>	Splitting-up methods for SDEs with generalized reflection on convex and nonconvex domains
20:00–23:00	<b>Welcome Reception</b>	

SATURDAY, JULY 1, 2023

**The First Balkan Mathematics Conference (BMC)**

Chairperson: Betül Tanbay

09:30–10:20	<b>Dan-Virgil Voiculescu</b> ( <i>online talk</i> )	From perturbations of operators to noncommutative condensers
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## Congress Plenary Talk

Chairperson: Lucian Beznea

15:00–15:50    **Artur Avila**                      Renormalization, fractal geometry, and the Newhouse phenomenon

### Section 1 *Algebra and Number Theory*

*Session 1.A*                      (*Algebra*)

Chairperson: Simion Breaz

11:00–11:50    **Călin Chindriș**                      An invariant theoretic approach to the representation-type of a finite-dimensional algebra (*joint with Session 1.B*)

12:00–12:25    **Dorin Popescu**                      Extensions of rings which are filtered colimits of smooth, or complete intersection algebras

12:30–12:55    **Constantin-Cosmin Todea**              Skew category algebras and induction of precosheaves of algebras

### Lunch

Chairperson: Dorin Popescu

16:30–17:20    **Laura Ciobanu**                      Equations in groups: between decidability and undecidability (*BMC talk, joint with Session 1.B*)

17:30–17:55    **Tiberiu Coconeț**                      Stable unital bases, hyperfocal subalgebras and basic Morita equivalences

18:00–18:25    **Miruna-Ștefana Sorea**                      (Disguised) toric dynamical systems and their (disguised) toric locus

18:30–18:55    **Iulian Ion Simion**                      On the product expansion of normal subsets in simple groups

*Session 1.B*                      (*Number Theory*)

Chairperson: Simion Breaz

11:00–11:50    **Călin Chindriș**                      An invariant theoretic approach to the representation-type of a finite-dimensional algebra (*joint with Session 1.A*)

Chairperson: George Turcaş

12:00–12:50 **Cristina Ballantine** Parity results for 3-regular partitions and quadratic forms

### Lunch

Chairperson: Dorin Popescu

16:30–17:20 **Laura Ciobanu** Equations in groups: between decidability and undecidability (*BMC talk, joint with Session 1.A*)

Chairperson: Vlad Matei

17:30–18:20 **Florian Luca** Recent progress on the Skolem problem

18:30–18:55 **Mircea Merca** On the parts with the same parity in all the partitions of  $n$

## Section 2 Algebraic, Complex and Differential Geometry and Topology

Chairperson: Liana David

11:00–11:50 **Andrei Căldăraru** An overview of computations of categorical enumerative invariants

Chairperson: Monica Alice Aprodu

16:30–17:20 **Tudor Pădurariu** Categorical Donaldson-Thomas theory of  $\mathbb{C}^3$  and beyond

17:30–18:20 **Liana David**  $B_n$  generalized pseudo-Kähler structures

18:30–19:20 **Tamás László** Numerical semigroups and weighted homogeneous surface singularities

### Special Session

### Geometry and Topology of Algebraic Varieties

Chairperson: Laurențiu Maxim

11:00–11:25 **Laurențiu Păunescu** Zariski's dimensionality type of singularities. Case of dimensionality type 2

11:30–11:55 **Liviu Nicolaescu** Morse functions statistics

12:00–12:25 **Cristina Palmer-Anghel** Globalising Jones and Alexander polynomials via Lagrangians in configuration spaces

12:30–12:55 **Thomas Krämer** The monodromy of subvarieties on abelian varieties

### Lunch

Chairperson: Mihai Tibar

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|-------------|------------------------|--|
| 16:30–16:55 | <b>Nir Gadish</b>      | A Serre spectral sequence for moduli spaces of tropical curves |
| 17:00–17:25 | <b>Alexandru Suciu</b> | Towards an integral version of rational homotopy theory        |
| 17:30–17:55 | <b>Roberto Pagaria</b> | Cohomology rings of abelian arrangements                       |

Chairperson: Radu Popescu

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|-------------|------------------------------|--|
| 18:00–18:25 | <b>Moisés Herradón Cueto</b> | Alexander modules and Mellin transform                                   |
| 18:30–18:55 | <b>Alexander Hof</b>         | Milnor fiber consistency via flatness                                    |
| 19:00–19:25 | <b>Martin Palmer-Anghel</b>  | Homological mapping class group representations and lower central series |

### Section 3 *Real and Complex Analysis, Potential Theory*

Chairperson: Victor Lie

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|-------------|-----------------------------|---|
| 11:00–11:25 | <b>Constantin Niculescu</b> | The Hornich-Hlawka functional inequality  |
| 11:30–11:55 | <b>Gavriil Păltineanu</b>   | Sets of functions which have the property $\mathcal{V}$ , The Von Neumann Density Theorem |
| 12:00–12:25 | <b>Alina Iosif</b>          | Riemann-Lebesgue integrability in interval-valued multifunctions setting                  |
| 12:30–12:55 | <b>Anca Croitoru</b>        | Spaces of Riemann-Lebesgue integrable functions   |

### Lunch

*Special Session*

*Integral Operators and Applications*

Chairperson: Victor Nistor

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|-------------|-------------------------------------|--|
| 16:30–16:55 | <b>Irina Mitrea</b>                 | On the Radon-Carleman problem in irregular domains   |
| 17:00–17:25 | <b>Massimo Lanza de Cristoforis</b> | A necessary and sufficient condition on a singular kernel for the continuity of an integral operator in Hölder spaces and applications to layer potentials |
| 17:30–17:55 | <b>Sergey Mikhailov</b>             | On evolution anisotropic periodic variable-coefficient Navier-Stokes equations   |

Chairperson: Irina Mitrea

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|-------------|---------------------|---|
| 18:00–18:25 | <b>Nadine Große</b> | Boundary value problems on domains with cusps                                     |
| 18:30–18:55 | <b>Mihai Iancu</b>  | Families of mappings with generalized parametric representation on $\mathbb{B}^n$ |

### Section 4 Ordinary and Partial Differential Equations, Controlled Differential Systems

Chairperson: Volker Mehrmann

11:00–11:50 **Monica Vişan** Recent progress in completely integrable PDE  
(*BMC talk*)

Chairperson: Cătălin Trenchea

12:00–12:50 **Gabriel Turinici** Reduced representations of non linear manifolds: from reduced basis to (conditional) vector quantization of measures

#### Lunch

Chairperson: Gabriel Turinici

16:30–16:55 **Radu Ignat** Minimality of vortex solutions for Ginzburg-Landau type functionals

17:00–17:25 **Mihai Mariş** Special classes of solutions to the Gross-Clark system

17:30–17:55 **Andaluzia Matei** Three-field weak solutions for a class of boundary value problem

18:00–18:25 **Bogdan Raiţă** Concentration effects in modern PDE

18:30–18:55 **Loredana Bălilescu** Higher order coefficients in some different classes of microstructures

19:00–19:25 **Călin Şerban** Multiplicity in some relativistic systems with odd nonlinearities

*Special Session* *Recent Advances in Partial Integro-Differential Eqns*

Chairperson: Javier Cueto

16:30–16:55 **Mark Allen** The two-phase thin free boundary problem for almost minimizers

17:00–17:25 **Marvin Weidner** The nonlocal Bernstein technique and the nonlocal obstacle problem

17:30–17:55 **Evangelia Ftaka** Piecewise smooth solutions to scalar balance laws with singular source terms

18:00–18:25 **Dragoş Manea** Concentration limit for non-local dissipative convection-diffusion kernels on the hyperbolic space

18:30–18:55 **Florin Bobaru** Analytical solutions to peridynamic models in elasticity and diffusion

19:00–19:25 **Andrei Grecu** The torsion problem of the  $p$ -Bilaplacian

### Section 5 *Functional Analysis, Operator Theory and Operator Algebras, Mathematical Physics*

Chairperson: Liviu Păunescu

- 11:00–11:25 **Omer Gok** On the Fremlin tensor product of lattice ordered algebras and Banach lattice algebras
- 11:30–11:55 **Mamoon Ahmed** The  $C^*$ -dynamical system of amenable quasi-lattice ordered groups and positive elements

Chairperson: Jan Philip Solovej

- 12:00–12:50 **Aleksey Kostenko** Spectral theory of strings and the Camassa-Holm equation (*BMC talk*)

#### Lunch

Chairperson: Irina Nenciu

- 16:30–17:20 **Radu Purice** Spectral regularity for a class of pseudo-differential operators with “dilation” perturbation

Chairperson: Frédéric Hélein

- 17:30–18:20 **Iakovos Androulidakis** Hypocoellipticity and the Helffer-Nourrigat conjecture (*BMC talk*)

Chairperson: Christof Sparber

- 18:30–19:20 **Horia Cornean** Bulk-edge correspondence for unbounded Dirac-Landau operators

### Section 6 *Probability, Stochastic Analysis, and Mathematical Statistics*

Chairperson: Iulian Cîmpean

- 11:00–11:50 **Alex Blumenthal** Exponential mixing for incompressible stochastic flows and an example of Pierrehumbert
- 12:00–12:50 **Victor-Emmanuel Brunel** Barycenters in non-positively curved metric spaces

#### Lunch

Chairperson: Alex Blumenthal

- 16:30–17:20 **Cagri Sert** Stationary measures on projective spaces
- 17:30–17:55 **Iulian Cîmpean** From Monte Carlo to neural networks approximations of boundary value problems



18:00–18:25	<b>Oana Lang</b>	Analytical and calibration properties for a stochastic shallow water system
18:30–18:55	<b>Vlad Margarint</b>	Extensions of SLE theory, and connections with other fields - with an Addendum on hyperbolic neural networks and beyond, in the memory of Octavian Ganea

**Section 7** *Mechanics, Astronomy, Numerical Analysis, and Mathematical Models in Sciences*

*Special Session*

*New Advances in the Numerical Solving of PDE*

Chairperson: Lori Badea

11:00–11:25	<b>Cristina Bacuta</b>	An alternate way for introducing finite differences and finite element discretization
11:30–11:55	<b>Andrei Drăgănescu</b>	Multilevel methods for optimal control of elliptic equations with stochastic coefficients discretized using stochastic collocation
12:00–12:25	<b>Stelian Ion</b>	Modelling shallow water flow on curved surfaces
12:30–12:55	<b>Ioan Ionescu</b>	Wave propagation in damaged brittle materials

**Lunch**

Chairperson: Constantin Bacuta

16:30–16:55	<b>Kundan Kumar</b>	Flow, geomechanics, and friction in fractured subsurface
17:00–17:25	<b>Liviu Marin</b>	Stable numerical solution of the Cauchy problem in anisotropic heat conduction with non-smooth coefficients
17:30–17:55	<b>Victor Nistor</b>	Uniform estimates for transmission problems in the smooth and polygonal cases
18:00–18:25	<b>Mihai Nechita</b>	Data assimilation for fluid-structure interaction (FSI). Applications to 4d-flow MRI
18:30–18:55	<b>Mircea Sofonea</b>	Convergence criteria, well-posedness concepts and numerical validation
19:00–19:25	<b>Nicolae Tarfulea</b>	On solving hyperbolic differential equations with constraints numerically

**Section 8** *Theoretical Computer Science, Operations Research, and Optimization*

*Special Session*

*Logic and Applications*

Chairperson: Laurențiu Leuștean

11:00–11:50	<b>Mircea Dumitru</b>	Modal Frame Incompleteness. An account through second order logic
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12:00–12:25	<b>Alexandru Dragomir</b>	The paradox of knowability in epistemic temporal logic
12:30–12:55	<b>Marian Calborean</b>	A classical logic for linguistic vagueness

### Lunch

Chairperson: Mircea Marin

17:30–17:55	<b>Eugen Mândrescu</b>	On almost König-Egerváry graphs
18:00–18:25	<b>Radu Buzatu</b>	A special graph convex covering problem
18:30–19:20	<b>Klavdija Kutnar</b>	Hamiltonicity in vertex-transitive graphs ( <i>BMC talk</i> )

19:30–20:30 *Roundtable on Romania-USA research collaboration*

## SUNDAY, JULY 2, 2023

### Section 1 Algebra and Number Theory

*Session 1.A* (Algebra)

Chairperson: Alexandru Popa

09:00–09:50	<b>Cristian Popescu</b>	Equivariant Iwasawa theory of Selmer groups and applications ( <i>joint with Session 1.B</i> )
10:00–10:50	<b>Adrian Diaconu</b>	Uniform homological stability and moments of $L$ -functions ( <i>joint with Session 1.B</i> )

### Coffee Break

Chairperson: Ivan Chipchakov

11:30–11:55	<b>Marian Deaconescu</b>	Local, global and general results for finite groups
12:00–12:25	<b>Bogdan Nica</b>	Polynomials over structured grids
12:30–12:55	<b>Elitza Hristova</b>	On the $GL(n)$ -module structure of a class of relatively free algebras

### Lunch

Chairperson: Sebastian Burciu

15:00–15:25	<b>Adriana Balan</b>	On the tensor product of cocomplete quantale-enriched categories
15:30–15:55	<b>Parascovia Sirbu</b>	Total multiplication groups of middle Bool loops

**Coffee Break**

Chairperson: Marian Deaconescu

16:30–16:55	<b>Gigel Militaru</b>	Kimura semigroups, Davis numbers and the set-theoretic quantum Yang-Baxter equation
17:00–17:25	<b>Ana Agore</b>	Universal constructions for Poisson algebras. Applications
17:30–17:55	<b>Sebastian Burciu</b>	Burnside vanishing type results for fusion categories
18:00–18:25	<b>Iulia-Cătălina Pleșca</b>	Number theory concepts in Group Theory

*Session 1.B**(Number Theory)*

Chairperson: Alexandru Popa

09:00–09:50	<b>Cristian Popescu</b>	Equivariant Iwasawa theory of Selmer groups and applications ( <i>joint with Session 1.A</i> )
10:00–10:50	<b>Adrian Diaconu</b>	Uniform homological stability and moments of $L$ -functions ( <i>joint with Session 1.A</i> )

**Coffee Break**

11:30–12:20	<b>Andrei Jorza</b>	$p$ -adic $L$ -functions in $GL(2n)$ -families
12:30–12:55	<b>Marian Anton</b>	Computational aspects of arithmetic group cohomology

**Lunch**

Chairperson: Andrei Jorza

15:00–15:25	<b>Vlad Matei</b>	Hilbert irreducibility for some algebraic groups with density one
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**Coffee Break**

16:30–16:55	<b>Constantin-Nicolae Beli</b>	Cohomology with multilinear differentials and applications
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**Section 2 Algebraic, Complex and Differential Geometry and Topology**

Chairperson: Laurențiu Maxim

09:00–09:50	<b>Mircea Mustață</b>	Invariants of singularities and higher rational and Du Bois singularities
10:00–10:50	<b>Simion Filip</b>	Some applications of hyperbolic geometry to algebraic geometry

**Coffee Break**

Chairperson: Mircea Mustașă

11:30–12:20	<b>Mihai Fulger</b>	Positivity of theta divisors on some abelian threefolds
12:30–12:55	<b>Mihai Pavel</b>	Compactification of moduli of vector bundles

**Lunch**

Chairperson: Mihai Pavel

15:00–15:50	<b>Leonardo Mihalcea</b>	Positivity in the quantum $K$ theory of Grassmannians
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**Coffee Break**

Chairperson: Mihai Fulger

16:30–17:20	<b>Florin Ambro</b>	On toric Fano fibrations
17:30–18:20	<b>Laurențiu Maxim</b>	Higher du Bois and higher rational singularities of hypersurfaces
18:30–18:55	<b>Yeongrak Kim</b>	Ulrich bundles on cubic fourfolds
19:00–19:25	<b>Youngook Choi</b>	Brill-Noether loci in codimension two

**Section 3** *Real and Complex Analysis, Potential Theory**Special Session**Sobolev Spaces in the Metric Setting*

Chairperson: Carlos Pérez

09:00–09:50	<b>Oliver Dragičević</b>	The $p$ -ellipticity condition for non-divergence-form operators
10:00–10:50	<b>Raul Paolo Serapioni</b>	Regular surfaces in Step 2 Carnot groups

**Coffee Break**

Chairperson: Cristina Benea

11:30–12:20	<b>Dan Coman</b>	Spaces of holomorphic sections vanishing along subvarieties
12:30–12:55	<b>George Ioniță</b>	Holomorphic factorization of vector bundle automorphisms

**Lunch**

Chairperson: Lucian Beznea

15:00–15:50 **Cristina Benea** Some examples of “curved” multilinear operators invariant under modulation

### Coffee Break

Chairperson: Raluca Tanase

16:30–17:20 **Simion Filip** Lyapunov exponents, Anosov representations, and Hodge theory

17:30–17:55 **Peter Dovbush** Normal families and normal functions in  $\mathbb{C}^n$

Chairperson: Gheorghe Bucur

18:00–18:25 **Eleutherius Symeonidis** On the dimension of the space of homogeneous  $k$ -modified harmonic polynomials of a fixed degree

18:30–18:55 **Marcelina Mocanu** Regularity properties of Orlicz-Sobolev spaces on metric measure spaces

19:00–19:25 **Dorin Ghişă** Conformal self mappings of the fundamental domains of analytic functions

*Special Session*

*Integral Operators and Applications*

Chairperson: Sergey Mikhailov

16:30–16:55 **Constantin Bacuta** Finite element analysis for convection-diffusion problems

17:00–17:25 **Mihai Cristea** Mappings of finite distortion and mappings of finite distortion; the modulus method

17:30–17:55 **Cristian Bereanu** The Lorentz force equation: a functional analytic approach

Chairperson: Mirela Kohr

18:00–18:25 **Gabriela Marinoschi** The  $H$ -infinity control problem for parabolic systems

18:30–18:55 **Radu Precup** Energy-localization in Navier-Stokes models with reaction terms

19:00–19:50 **David Shoikhet** Fixed points, semigroups and rigidity of holomorphic mappings

### Section 4 Ordinary and Partial Differential Equations, Controlled Differential Systems

Chairperson: Viorel Barbu

09:00–09:50 **Daniel Tătaru** Free boundary problems in fluid dynamics

10:00–10:25	<b>Mihaela Ifrim</b>	The small data global well-posedness conjecture for 1D defocusing dispersive flows
10:30–10:55	<b>Mihai Tohăneanu</b>	The weak null condition on Kerr backgrounds

### Coffee Break

Chairperson: Radu Ignat

11:30–11:55	<b>Vlad Vicol</b>	On anomalous diffusion
12:00–12:25	<b>Victor Nistor</b>	Layer potentials on manifolds with cylindrical ends: the Laplace operator
12:30–12:55	<b>Mirela Kohr</b>	The Stokes operator on manifolds with cylindrical ends

### Lunch

Chairperson: Mihaela Ifrim

15:00–15:25	<b>Liviu Ignat</b>	Large-time behaviour for anisotropic stable nonlocal diffusion problems with convection
15:30–15:55	<b>Arghir Zărnescu</b>	On the motion of a large number of small rigid bodies in a viscous incompressible fluid

### Coffee Break

#### *Session 4.A*

Chairperson: Liviu Ignat

16:30–16:55	<b>Mihai Mihăilescu</b>	Monotonicity properties of the $p$ -torsional rigidity in convex domains
17:00–17:25	<b>Adrian Petrușel</b>	Abstract Volterra operators and applications
17:30–17:55	<b>Eduard-Wilhelm Kirr</b>	Can one find all coherent structures supported by a nonlinear wave equation?
18:00–18:25	<b>Ionel Roventă</b>	The approximation of the controls for the wave equation with a lower rate numerical vanishing viscosity
18:30–18:55	<b>Lorena Bociu</b>	Analysis and control in poroelastic systems with applications to biomedicine
19:00–19:25	<b>Andrei Perjan</b>	Convergence estimates for some semilinear second order differential equations with two small parameters in Hilbert space

#### *Session 4.B*

Chairperson: Loredana Bălilescu

16:30–16:55	<b>Ovidiu-Neculai Avădanei</b>	Well-posedness for the surface quasi-geostrophic front equation
17:00–17:25	<b>Iulia Cristian</b>	Coagulation equations for non-spherical clusters

17:30–17:55	<b>Nicolae Lupa</b>	Exponential dichotomies via evolution semigroups
18:00–18:25	<b>Eduard Curcă</b>	Some Bourgain-Brézis type solutions via complex interpolation
18:30–18:55	<b>Octavian Postăvaru</b>	A numerical method to solve fractional Fredholm-Volterra equations
19:00–19:25	<b>Nicolae Vulpe</b>	On families $QSL_3$ of quadratic systems with invariant lines of total multiplicity exactly 3

### Section 5 *Functional Analysis, Operator Theory and Operator Algebras, Mathematical Physics*

Chairperson: Radu Purice

09:00–09:50	<b>Jan Philip Solovej</b>	On the pressure of dilute Bose gases
10:00–10:50	<b>Irina Nenciu</b>	Weak anisotropic Hardy inequalities and essential self-adjointness of drift-diffusion operators

#### Coffee Break

Chairperson: Horia Cornean

11:30–12:20	<b>Christof Sparber</b>	Effective dynamics of translationally invariant magnetic Schrödinger equations
12:30–12:55	<b>Cristina Stamate</b>	Vector integrals and applications

#### Lunch

Chairperson: Ruhan Zhao

15:00–15:50	<b>Florin Rădulescu</b>	Special cases of left quasiregular representations that have good regularity properties in the Calkin algebra
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#### Coffee Break

Chairperson: Florian Vasilescu

16:30–17:20	<b>Ruhan Zhao</b>	Berezin type operators and Toeplitz operators on Bergman spaces
17:30–17:55	<b>Gabriel Prăjitură</b>	Rhaly operators in $l^2$
18:00–18:25	<b>George Popescu</b>	Rhaly operators in some Banach sequence spaces
18:30–18:55	<b>Elhadj Dahia</b>	Compactness of 2-Lipschitz mappings

## Section 6 *Probability, Stochastic Analysis, and Mathematical Statistics*

### *Special Session*

### *Stochastic Dynamics and Potential*

Chairperson: Oana Lupaşcu-Stamate

09:00–09:25	<b>Ionel Popescu</b>	Interpolation with neural networks
09:30–10:25	<b>Max von Renesse</b>	A central limit theorem for the modified massive arratia flow
10:30–10:55	<b>Madalina Deaconu</b>	Probabilistic tools for the fragmentation equation

### **Coffee Break**

Chairperson: Madalina Deaconu

11:30–11:55	<b>Ciprian Tudor</b>	Multidimensional Stein method and asymptotic independence
12:00–12:50	<b>Gerald Trutnau</b>	Existence and uniqueness of (infinitesimally) invariant measures for second order partial differential operators on Euclidean space

### **Lunch**

Chairperson: Oana Lang

15:00–15:20	<b>Ionuț Bebu</b>	Personalized screening schedules for chronic diseases
15:30–15:55	<b>Cristina Anton</b>	Clustering of functional data with outliers

### **Coffee Break**

Chairperson: Vlad Margarint

16:30–16:55	<b>Roxana Dumitrescu</b>	A linear programming approach for mean-field games: theory and numerical aspects
17:00–17:25	<b>Ilie Grigorescu</b>	Long-term behavior of the Bak-Sneppen branching diffusions
17:30–17:55	<b>Oana Lupaşcu-Stamate</b>	Asymptotic behaviour of a one-dimensional avalanche model through a particular stochastic process
18:00–18:50	<b>Heinrich Matzinger</b>	Incompressibility of first order logic in transformer under a probabilistic multivariate normal model with independence



### Section 7 *Mechanics, Astronomy, Numerical Analysis, and Mathematical Models in Sciences*

Chairperson: Mircea Sofonea

09:00–09:25	<b>Lori Badea</b>	Multigrid Uzawa algorithm for general saddle point problems
09:30–09:55	<b>Gabriela-Ana Nadabaică</b>	The Laplace plane of asteroid satellites
10:00–10:25	<b>Emilian Parau</b>	Stability of water waves in infinite depth with constant vorticity
10:30–10:55	<b>Claudiu Mîndrilă</b>	Time-periodic weak solutions for incompressible fluids interacting with elastic shells

#### Coffee Break

Chairperson: Marius Cocou

11:30–11:55	<b>Nicolae Suci</b>	Random walk methods for reactive transport in porous media
12:00–12:25	<b>Florentina Tone</b>	Long time stability of the implicit Euler scheme for an incompressible two-phase flow model
12:30–12:55	<b>Cătălin Trenchea</b>	Numerical modeling of fluid-structure interaction

#### Lunch

Chairperson: Lucian Beznea

15:00–15:50	<b>Volker Mehrmann</b>	Dirac, Lagrange and monotone structures in energy-based mathematical modeling of dynamical systems
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#### Coffee Break

Chairperson: Ioan Ionescu

16:30–16:55	<b>Florin Bobaru</b>	Dislocations interacting with growing cracks: a peridynamic approach
17:00–17:25	<b>Stan Chiriță</b>	Some characteristic properties of the solutions in the three-phase-lag heat conduction
17:30–17:55	<b>Marius Cocou</b>	A class of nonlinear dynamic contact problems in thermoviscoelasticity
18:00–18:25	<b>Andreea Grecu</b>	A probabilistic numerical approach to the inverse Cauchy problem
18:30–18:55	<b>Yajuvindra Kumar</b>	Bending analysis of a nonhomogeneous rectangular plate resting on foundation using Rayleigh-Ritz method
19:00–19:25	<b>Claudia Timofte</b>	Homogenization results for non-local problems in composites with imperfect interfaces

## Section 8 *Theoretical Computer Science, Operations Research, and Optimization*

### *Special Session*

### *Logic and Applications*

Chairperson: Mircea Dumitru

09:00–09:50	<b>Mihai Prunescu</b>	Some rings have the same diophantine theory as $\mathbb{Z}$
10.00–10:25	<b>Andrei Sipoș</b>	The computational content of super strongly nonexpansive mappings
10.30–10:55	<b>Horațiu Cheval</b>	Recent results in proof mining and applications of interactive theorem proving

### **Coffee Break**

Chairperson: Mădălina Erascu

11:30–12:20	<b>Cătălin Dima</b>	Computationally feasible strategies for linear temporal logic objectives
12.30–12:55	<b>Iulia Bastys</b>	Securing IoT apps with information flow control

### **Lunch**

Chairperson: Mihai Prunescu

15:00–15:50	<b>Mircea Marin</b>	Similarity-based set matching
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### **Coffee Break**

Chairperson: Cătălin Dima

16:30–17:20	<b>Florin Stoican</b>	Explicit MPC solution using Hasse diagrams: construction, storage and retrieval
17:30–17:55	<b>Mădălina Erascu</b>	A symbiosis of constraint optimization, symmetries and symmetry breaking for scalable Cloud deployment problems
18:00–18:25	<b>Paul Irofti</b>	Tackling unsupervised anomaly detection through dictionary learning
18:30–18:55	<b>Elena Nechita</b>	On the resilience of a nature-inspired class of algorithms
19:00–19:25	<b>Doru Constantin</b>	ICA model estimation using a mixed learning rule based on neural network and genetic algorithm

### **Poster Session: 15:00-17:00**

<b>Ahmed Abbassi</b>	Bilinear closed graph theorem in the framework of asymmetric normed spaces
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<b>Daniel Adams</b>	Boundedness results for solutions of certain second order non-autonomous ordinary differential equations
<b>Mohammed Benharrat</b>	Fractional powers approach of maximal accretive operators for a class of third order abstract Cauchy problems
<b>Rachid Boukoucha</b>	On the dynamics of a class of differential systems with two limit cycles
<b>Rachid Chaili</b>	Roumieu Regularity of differential operators of constant strength
<b>Diana Constantin</b>	Exact solution of the atemporal Schrödinger equation with a perturbed-harmonic potential using Laplace transform
<b>Diana Constantin</b>	The spherical harmonics role in 3D visualization of the orbitals for Hydrogen-like atoms
<b>Sule Curuk</b>	On $q$ -sums of bicomplex Jacobsthal numbers
<b>Suleyman Demir</b>	Matrix representations of plasma equations
<b>Makeesh Kumar</b>	Riemann problems for inviscid hyperbolic PDEs through approximate analytical approach
<b>Elifcan Sayin</b>	On Oresme numbers and their geometric interpretations
<b>Muhammad Shafiq ur Rahman Paswal</b>	Scattering of waves in random media
<b>Mohamed Tantawy</b>	Toward Extended Unified Method. Solution of nonautonomies and inhomogeneous nonlinear evolution equations and wave configurations
<b>Tzi-Sheng Yang</b>	A series Evans function approach to stability of traveling waves of reaction-diffusion systems
<b>Samia Zermani</b>	Global well-posedness and asymptotic behavior for a reaction-diffusion system of competition type

20:00–23:00 *Conference Dinner*

MONDAY, JULY 3, 2023

*Excursion*

TUESDAY, JULY 4, 2023

*Bitdefender-Lecture for a large audience*

12:30–13:20 **Georgiana Miruna Roşca** Homomorphic Encryption  
(*Bitdefender, Romania*)

### Section 1 *Algebra and Number Theory*

Chairperson: Cristian Popescu

- 09:00–09:50 **Adrian Ioviță** BGG for de Rham complexes associated to modular forms  
 10:00–10:50 **Gabriel Dospinescu** Geometry of the  $p$ -adic upper half-plane

#### Coffee Break

- 11:30–12:20 **Mihai Cipu** Bounds for the size of  $D(n)$ -sets

#### Lunch

Chairperson: Mihai Cipu

- 15:00–15:25 **Mircea Cimpoeaş** On almost monomial groups  
 15:30–15:55 **Nicolae Bonciocat**  $\pi$  and the irreducibility of polynomials that take a prime value

#### Coffee Break

- 16:30–16:55 **Tinhinane Amina Azzouz** Spectrum of  $p$ -adic linear differential equations

Chairperson: Bogdan Nica

- 17:00–17:25 **Andrei Alexandru** A finitary characterization of generalized hybrid sets over infinite universes  
 17:30–17:55 **Ivan Chipchakov** Quasifinite fields of prescribed characteristic and Diophantine dimension  
 18:00–18:25 **Dumitru Stamate** Progress on canonical trace ideals  
 18:30–18:55 **Radu Stancu** Fusion systems on pro- $p$  groups  
 19:00–19:25 **Florin Felix Nichita** Rings, boolean algebras and Yang-Baxter systems

*Special Session* *Homological methods in commutative algebra*

Chairperson: Dorin Popescu

- 09:00–09:50 **Claudiu Raicu** Stable cohomology of line bundles on flag varieties  
 10:00–10:25 **Oana Veliche** On the minimal free resolution of the residue field  
 10:30–10:55 **Alexandru Constantinescu** Cotangent cohomology for matroids

#### Coffee Break

Chairperson: Oana Veliche

11:30–11:55 **Alina Jacob** Direct limits of Gorenstein injective modules  
 12:00–12:25 **Andrei Bengus-Lasnier** Valuations and key polynomials

### Lunch

Chairperson: Claudiu Raicu

15:00–15:50 **Florian Enescu** Frobenius complexity and rational twist in positive characteristic

### Coffee Break

Chairperson: Alexandru Constantinescu

16:30–16:55 **Rodica Dinu** On varieties coming from phylogenetic group-based models

*Special Session* *Hopf algebras, tensor categories and related topics*

Chairperson: Stefaan Caenepeel

09:30–09:55 **Yorck Sommerhäuser** Categorical aspects of extension theory  
 10:00–10:25 **Kenichi Shimizu** Applications of the Nakayama functor to tensor categories  
 10:30–10:55 **Bogdan Ion** PBW theorems, Shuffle algebras, and Lyndon words

### Coffee Break

Chairperson: Sebastian Burciu

11:30–11:55 **Yinhuo Zhang** Generalized Faà di Bruno Hopf algebras  
 12:00–12:25 **Taiki Shibata** On classification of Hopf superalgebras

### Lunch

Chairperson: Bogdan Ion

15:00–15:25 **Peter Schauenburg** Some answers and questions on Frobenius-Schur indicator values in fusion categories  
 15:30–15:55 **Sébastien Palcoux** Simple integral fusion categories

### Coffee Break

Chairperson: Ana Agore

16:30–16:55	<b>Joost Vercruyse</b>	Generalizations of Yetter-Drinfel'd modules and the center construction of monoidal categories
17:00–17:25	<b>Chiara Pagani</b>	Braided Lie algebras of gauge transformations for non-commutative Hopf-Galois extensions
17:30–17:55	<b>Paolo Saracco</b>	On a correspondence between ideal coideals and coideal subrings of Hopf algebroids
18:00–18:25	<b>Laura Năstăsescu</b>	On a class of quasi-Frobenius algebras

## Section 2 Algebraic, Complex and Differential Geometry and Topology

Chairperson: Eleny Ionel

09:00–09:50	<b>Andrei Teleman</b>	Moduli spaces of holomorphic bundles framed along a real hypersurface
10:00–10:50	<b>Vasile Brînzănescu</b>	Relating Catlin and D'Angelo $q$ -types invariants

### Coffee Break

Chairperson: Patrick Popescu-Pampu

11:30–12:20	<b>Sorin Dumitrescu</b>	Holomorphic $\mathfrak{sl}(2, \mathbb{C})$ -differential systems on Riemann surfaces and curves in compact quotients of $SL(2, \mathbb{C})$
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### Lunch

Chairperson: Sorin Dumitrescu

15:00–15:50	<b>Patrick Popescu-Pampu</b>	The local tropicalization of splice type singularities
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### Coffee Break

Chairperson: Victor Vuletescu

16:30–17:20	<b>Eleny Ionel</b>	Counting embedded curves in 3-folds
17:30–18:20	<b>Florin Belgun</b>	Special holonomy on compact conformal manifolds
18:30–18:55	<b>Hristo Iliev</b>	Families of curves on cones that give rise to components of the Hilbert scheme of curves
19:00–19:25	<b>Miron Stanciu</b>	Modifications of locally conformally Kähler spaces

*Special Session**Geometry of Submanifolds and its Applications*

Chairperson: Ana-Irina Nistor

15:00–15:25 **Rareş Ambrosie**

New results for biharmonic quadratic maps between spheres

15:30–15:55 **Mateo Anarella**Totally geodesic Lagrangian submanifolds of the pseudo-nearly Kähler  $SL(2, \mathbb{R}) \times SL(2, \mathbb{R})$ **Coffee Break**

Chairperson: Gabriel Vîlcu

16:30–16:55 **Ana-Irina Nistor**Magnetic geodesics in  $\mathbb{R}^7$ 17:00–17:25 **Cezar Oniciuc**

On biconservative surfaces

Chairperson: Marian Munteanu

17:30–17:55 **Cornel Pinteă**

Size of tangencies to non-involutive distributions

18:00–18:25 **Rafael López**

Some themes around the notion of catenary

**Section 3** *Real and Complex Analysis, Potential Theory*

Chairperson: Lucian Beznea

09:00–09:50 **Bálint Tóth**Random walks in divergence free random environments (*joint with Section 6*)

Chairperson: Camil Muscalu

11:30–12:20 **Ciprian Demeter**

Large sets with limited tube occupancy

**Lunch**

Chairperson: Mihai Cristea

16:30–17:20 **Anatoly Golberg**

Teichmüller's theorem in higher dimensions

17:30–18:20 **Mark Elin**

The Fekete–Szegő problem for spirallike mappings and non-linear resolvents in Banach spaces

Chairperson: Eleutherius Symeonidis

18:30–18:55 **Ileana Bucur**

On Korovkin theorem

19:00–19:25 **Habib Benfriha** Helly-Bray theorem revisited. Weak convergence in the sense of b.v.

*Special Session*

*Dynamical Systems*

Chairperson: Eugen Mihăilescu

10:00–10:50 **Peter Raith** Mixing properties and entropy for Lorenz maps on the interval

### Coffee Break

11:30–12:20 **Fedor Pakovich** On intersections of orbits of rational functions

12:30–12:55 **Denis Gaidashev** Renormalization for Fibonacci maps

### Lunch

Chairperson: Peter Raith

15:00–15:25 **Dan Paraschiv** Newton-like components in the Chebyshev-Halley family of degree  $n$  polynomials

15:30–15:55 **Radu Munteanu** Inverse entropy for endomorphisms

### Coffee Break

Chairperson: Fedor Pakovich

16:30–16:55 **Marian Gîdea** Energy growth in Hamiltonian systems with small dissipation

17:00–17:25 **Eugen Mihăilescu** Dynamics of semigroup actions and amalgamated pressure

Chairperson: Raluca Tanase

17:30–17:55 **Tanya Firsova** Critical locus for complex Hénon maps

18:00–18:25 **Mariusz Urbanski** Dimension spectrum of conformal Iterated Function Systems



### Section 4 *Ordinary and Partial Differential Equations, Controlled Differential Systems*

Chairperson: Mihai Mihăilescu

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|-------------|-----------------------|--|
| 09.00–09.25 | <b>Renata Bunoiu</b>  | On the homogenization of some problems with sign-changing coefficients             |
| 09.30–09.55 | <b>Nicolae Cîndea</b> | Controllability of the linear elasticity as a first order in time and space system |

#### Coffee Break

Chairperson: Renata Bunoiu

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|-------------|--------------------------|--|
| 11:30–11:55 | <b>Marius Tucsnak</b>    | Long time behavior in some fluid-structure interaction problems  |
| 12:00–12:25 | <b>Valentina Busuioc</b> | Convergence of $\alpha$ -Euler to Euler for low regularity   |
| 12:30–12:55 | <b>Dan Polișevschi</b>   | Dirichlet problem for a fine scale mixture of two highly different conductive materials with interfacial barrier |

#### Lunch

Chairperson: Valentina Busuioc

- |             |                            |   |
|-------------|----------------------------|---|
| 15:00–15:25 | <b>Delia Ionescu-Kruse</b> | Nonlinear two-dimensional water waves with arbitrary vorticity          |
| 15:30–15:55 | <b>Andrei Tarfulea</b>     | Applications of mass spreading to regularity for the Boltzmann equation |

#### Coffee Break

Chairperson: Andrei Tarfulea

- |             |                         |   |
|-------------|-------------------------|---|
| 16:30–16:55 | <b>Dan Tiba</b>         | Optimality conditions and Lagrange multipliers for shape and topology optimization problems               |
| 17:00–17:25 | <b>Vasile Staicu</b>    | Strong solutions to parabolic equations with non-monotone multivalued terms                               |
| 17:30–17:55 | <b>Maria Fărcășeanu</b> | Solutions for nonlinear elliptic equations with singular potentials                                       |
| 18:00–18:25 | <b>Cristian Enache</b>  | The first eigenvalue, maximum principle and regularity results for a class of Monge-Ampère type operators |
| 18:30–18:55 | <b>Alexandra Melnig</b> | Reaction-diffusion systems: source stability estimates with boundary observations                         |
| 19:00–19:25 | <b>Eylem Öztürk</b>     | Well-posedness and long time behavior for viscous fractional Cahn-Hilliard equations with memory          |

### Section 5 *Functional Analysis, Operator Theory and Operator Algebras, Mathematical Physics*

Chairperson: Hari Bercovici

09:00–09:50 **Marius Dadarlat** Cohomological obstructions to group stability  
 10:00–10:50 **Bogdan Nica** Norms of averaging operators on hyperbolic groups

#### Coffee Break

Chairperson: Marius Dadarlat

11:30–11:55 **Cristian Ivănescu** Villadsen idempotents  
 12:00–12:25 **Maria Joița** Local boundary representations for a local operator system  
 12:30–12:55 **Valentin Deaconu**  $C^*$ -algebras from  $k$  group representations

#### Lunch

Chairperson: Maria Joița

15:30–15:55 **Ioana Ghenciu** On some classes of operators on  $C(K, X)$

#### Coffee Break

Chairperson: Dan Timotin

16:30–16:55 **Anca Marcoci** Schur multipliers techniques in the solid spaces of infinite matrices  
 17:00–17:25 **Liviu Marcoci** The dual and predual of Bloch space of matrices  
 17:30–17:55 **Pankaj Jain** Sawyer's duality principle for Lebesgue and grand Lebesgue spaces  
 18:00–18:25 **Monika Singh** Hardy inequality for non-increasing functions on weighted grand variable exponent Lebesgue spaces  
 18:30–18:55 **Arun Pal Singh** Rubio de Francia's extrapolation  
 19:00–19:25 **Dilmi Mourad** Asymptotic analysis of a nonlinear boundary value problem with friction

**Section 6** *Probability, Stochastic Analysis, and Mathematical Statistics**Special Session**Stochastic Dynamics and Potential*

Chairperson: Lucian Beznea

09:00–09:50 **Bálint Tóth** Random walks in divergence free random environments (*joint with Section 3*)

**Coffee Break**

Chairperson: Bálint Tóth

11:30–12:20 **Jurij Kozicki** A Markov process for a continuum infinite particle system with attraction

**Lunch**

Chairperson: Anamaria Savu

15:00–15:25 **Alexandru Hening** Stochastic population dynamics

15:30–15:55 **Sergiu Ungureanu** Optimal harvesting of stochastic populations - theoretical results and numerical methods

**Coffee Break**

Chairperson: Alexandru Hening

16:30–16:55 **Adina Opreșan** Brownian motion with power law drifts

17:00–17:25 **Anamaria Savu** Processes with zero-range interaction

**Section 7** *Mechanics, Astronomy, Numerical Analysis, and Mathematical Models in Sciences*

Chairperson: Stan Chiriță

09:30–09:55 **Xiaoyan Liu** The parametric eighth-degree interpolation spline function

10:00–10:25 **Peter Rashkov** Dynamic complexity and time-scale separation in models for dengue fever

10:30–10:55 **Sarita Singh** Numerical solution of pulsatile blood flow in patient specific elastic carotid artery

**Coffee Break**

Chairperson: Mirel Bîrlan

16:30–16:55 **Mihai Bărbosu** Mathematical models in artificial intelligence for astronomy applications

Chairperson: Mihai Bărbosu

17:00–17:25 **Mirel Bîrlan** Photometric observations of 159 small near-Earth objects in the frame of EU NEOROCKS Programme

17:30–17:55 **Ioana Boacă** An inverse problem related to a system of ordinary differential equations that describes the motion of a meteoroid

18:00–18:25 **Liliana Dumitru** Study of magnetic flux in active region NOAA 11967

### **Section 8** *Theoretical Computer Science, Operations Research, and Optimization*

Chairperson: Vlad Rusu

09:00–09:50 **Dorel Lucanu** On programming language definitions as matching logic theories

10:00–10:25 **Andrei Arusoai** Proof-carrying parameters in certified symbolic execution

10:30–10:55 **Denisa Diaconescu** VLMS: A general theory for reasoning about faulty distributed systems

#### **Coffee Break**

Chairperson: Andrei Arusoai

11:30–12:20 **Grigore Roşu** Matching Logic – A for computing, languages, and formal verification

#### **Lunch**

Chairperson: Denisa Diaconescu

15:00–15:50 **Gabriel Ciobanu** Challenging logical doubts with an extended version of finitism

#### **Coffee Break**

Chairperson: Grigore Roşu

16:30–16:55 **Claudia Chiriţă** Abstract connectives in Institution Theory

17:00–17:25 **Isabela Drămnesc** Deductive synthesis of sorting algorithms on lists and on binary trees in Theorema

17:30–18:00 **Adrian Crăciun** Scheme-based theory exploration (and algorithm synthesis) by lazy thinking

***Poster Session: 15:00-17:00***

<b>Ahmed Abbassi</b>	Bilinear closed graph theorem in the framework of asymmetric normed spaces
<b>Daniel Adams</b>	Boundedness results for solutions of certain second order non-autonomous ordinary differential equations
<b>Mohammed Benharrat</b>	Fractional powers approach of maximal accretive operators for a class of third order abstract Cauchy problems
<b>Rachid Boukoucha</b>	On the dynamics of a class of differential systems with two limit cycles
<b>Rachid Chaili</b>	Roumieu Regularity of differential operators of constant strength
<b>Diana Constantin</b>	Exact solution of the atemporal Schrödinger equation with a perturbed-harmonic potential using Laplace transform
<b>Diana Constantin</b>	The spherical harmonics role in 3D visualization of the orbitals for Hydrogen-like atoms
<b>Sule Curuk</b>	On $q$ -sums of bicomplex Jacobsthal numbers
<b>Suleyman Demir</b>	Matrix representations of plasma equations
<b>Makesh Kumar</b>	Riemann problems for inviscid hyperbolic PDEs through approximate analytical approach
<b>Elifcan Sayin</b>	On Oresme numbers and their geometric interpretations
<b>Muhammad Shafiq ur Rahman Paswal</b>	Scattering of waves in random media
<b>Mohamed Tantawy</b>	Toward Extended Unified Method. Solution of nonautonomies and inhomogeneous nonlinear evolution equations and wave configurations
<b>Tzi-Sheng Yang</b>	A series Evans function approach to stability of traveling waves of reaction-diffusion systems
<b>Samia Zermani</b>	Global well-posedness and asymptotic behavior for a reaction-diffusion system of competition type

WEDNESDAY, JULY 5, 2023

**Section 1 Algebra and Number Theory**

Chairperson: Adrian Diaconu

09:00–09:50 **Cristian Cobeli** Bee's eyes among lattice points

10:00–10:50 **Florin Boca** Euclidean dynamics and quadratic irrationals

### Coffee Break

11:30–12:20 **Eugenia Roşu** A higher degree Weierstrass function

### Section 2 *Algebraic, Complex and Differential Geometry and Topology*

Chairperson: Miron Stanciu

09:00–09:50 **Radu Laza** Higher rational and higher Du Bois singularities and applications

10:00–10:50 **Philippe Gille** A local-global principle for rational points of projective homogeneous varieties

### Coffee Break

Chairperson: Philippe Gille

11:30–12:20 **Victor Vuletescu** Do products of locally conformally Kähler manifolds (LCK, for short) carry an LCK metric?

12:30–12:55 **Costin Vilcu** Reshaping Convex Polyhedra

### Section 3 *Real and Complex Analysis, Potential Theory*

Chairperson: Ciprian Demeter

09:00–09:50 **Camil Muscalu** A new approach to the Fourier Extension Problem for the paraboloid

10:00–10:50 **Tamás Darvas** Transcendental Okounkov bodies

### Section 6 *Probability, Stochastic Analysis, and Mathematical Statistics*

Chairperson: Adina Opreşan

09:00–09:25 **Ştefana Aniţa** Controlling a nonlinear Fokker-Planck equation via inputs with nonlocal action

09:30–09:55 **Gheorghe Bucur** Non extinction vs. Compactness Inverse Tchebyshev inequality

10:00–10:25 **Vic Patrangenaru** A statistical and topological data analysis of 2D and 3D scenes extracted from electronic images

10:30–10:55 **Alexandru Lazari** Advanced properties of homogeneous linear recurrences with applications to stochastic problems

### Coffee Break

Chairperson: Alexandru Lazari

11:30–11:55	<b>Daniel Ciuiu</b>	Successive determination of the coefficients of $AR(p)$ time series using the Cholesky decomposition
12:00–12:25	<b>Florin Constantin Enache</b>	Estimation of therapeutic equivalence using bioequivalence methods for algopirin tablets versus exceedrin analgesic
12:30–12:55	<b>Emil Simion</b>	Statistical testing tools for evaluating cryptographic applications
13:00–13:25	<b>Ramona Hodişan</b>	Statistical methods in the study of human genetic diversity based on Y-chromosome analysis

### Section 8 *Theoretical Computer Science, Operations Research, and Optimization*

Chairperson: Dorel Lucanu

09:00–09:50	<b>Vlad Rusu</b>	Defining and reasoning about corecursive functions in Coq
10:00–10:25	<b>Ştefan Ciobâcă</b>	Specification, implementation and verification of an image format in Dafny
10:30–10:55	<b>Ionuţ Țuţu</b>	Narrowing revisited