The 16th French-Romanian Colloquium on Applied Mathematics

August 26-30, 2024, Bucharest, Romania

PROGRAM

MONDAY, AUGUST 26, 2024

9:30-10:00	*Opening Ceremony*	
Chairperson:	Lucian Beznea	
10:00-10:50	**Majorlane Puel**	Fractional diffusion for kinetic equations

Coffee Break

Chairperson:	Majorlane Puel	
11:15-12:05	**Radu Precup**	Localization of energies in Navier-Stokes models with reaction terms

Lunch

Special Session *Random Graphs*

Chairperson:	Ioana Dumitriu	
14:00-14:25	**Johannes Alt**	Spectral Phases of the Erdös-Rényi graph
14:30-14:55	**Grégory Miermont**	Combinatorial and probabilistic aspects of maps with tight boundaries

Coffee Break

Chairperson:	Grégory Miermont	
15:30-15:55	**Ioana Dumitriu**	Community Detection and the (Hyper)Graph Stochastic Block Model

| 16:00-16:25 | **Raphael Ducatez** | Spectral gap and embedded trees for the Laplacian of the Erdős-Rényi graph |
| 16:30-16:55 | **Bastien Mallein** | Infinite-Bin Model and the Longest Increasing Path in an Erdős-Rényi random graph |

Special Session *Control of PDEs*

Chairperson: Sorin Micu

| 14:00-14:25 | **Guillaume Olive** | Minimal control time for 1D linear hyperbolic systems |
| 14:30-14:55 | **Mihai Bucataru** | Accelerated iterative algorithms for the Cauchy problem in steady-state anisotropic heat conduction |

Coffee Break

| 15:30-15:55 | **Sue Claret** | Neumann boundary controllability of a semilinear wave equation |
| 16:00-16:25 | **Geoffrey Lacour** | Non-Newtonian fluids and null controllability: the influence of finite stopping time |

Special Session *Numerical analysis*

Chairperson: Gabriel Turinici

| 14:00-14:25 | **Laetitia Laguzet** | The Quantization Monte Carlo method for solving radiative transport equations |
| 14:30-14:55 | **Mihai Nechita** | Optimal approximation of unique continuation |

Coffee Break

Chairperson: Marina Vidraşcu

15:30-15:55	**Alexandre Ern**	Some recent results on the discontinuous Galerkin approximation of Maxwell's equations
16:00-16:25	**Emilian Parau**	A dissipative nonlinear Schrödinger model for wave propagation in the marginal ice zone
16:30-16:55	**Nicolae Suciu**	Iterative schemes for coupled flow and transport problems in porous media - Convergence & truncation errors
17:00-17:25	**Liviu Ignat**	Approximations of the best constants
17:30-17:55	**Andra Malina Teodora Cătinaş**	Spherical interpolation of scattered data using least squares thin-plate spline and inverse multiquadric functions

18:00 **Cocktail**

TUESDAY, AUGUST 27, 2024

Chairperson:	Radu Precup	
9:00-9:50	**Katharina Schratz**	Resonances as a computational tool (Canceled)
10:00-10:50	**Jimmy Lamboley**	Stability in shape optimization under convexity constraint

Coffee Break

Chairperson:	Jimmy Lamboley	
11:15-12:05	**Grégory Miermont**	Maps and 2-dimensional random planar geometries

Lunch

Special Session *Analysis and PDEs*

Chairperson:	Cristian Cazacu	
16:30-16:55	**Romain Joly**	Abstract parabolic equation in cylinders
17:00-17:25	**Natalia Chinchaladze**	Zero Approximation of Hierarchical Models for Fluids in Pipes
17:30-17:55	**Iulia Cristian**	Multi-dimensional coagulation models describing sedimentation
18:00-18:25	**Sándor Kajántó**	Riccati Pairs: An Alternative Approach to Hardy Inequalities

Special Session *Control of PDEs*

Chairperson:	Nicolae Cîndea	
14:00-14:25	**Cristinel Mardare**	Geometric rigidity of mappings and its applications in nonlinear elasticity
14:30-14:55	**Alexandra Melnig**	Source estimates with boundary observations for reaction-diffusion systems

Coffee Break

Chairperson: Ionel Roventa

15:30-15:55	**Sorin Micu**	A mixed finite elements approximation of inverse source problems for the wave equation
16:00-16:25	**Pierre Lissy**	Luenberger observers for the linearized water-wave equation

Special Session *PDEs with random coefficients and stochastic PDEs*

Chairperson: Ismael Bailleul

14:00-14:25	**Ludovic Goudenège**	Numerical scheme for SPDEs with singular drift
14:30-14:55	**Victor Nistor**	Elliptic problems with 'log-normal' random coefficients

Coffee Break

15:30-15:55	**Oana Lupaşcu-Stamate**	Asymptotic behaviour of a one-dimensional avalanche model through a non-conservative coagulation-fragmentation equation and associated stochastic processes

Special Session *Spatio-temporal random processes and applications*

Chairperson: Oana Lupascu-Stamate

14:00-14:25	**Marc Peigne**	A local limit theorem for oscillating random walks on $\mathbb{Z}$
14:30-14:55	**Ciprian Tudor**	Inference for the nonlinear stochastic heat equation

Coffee Break

Chairperson: Bastien Mallein

15:30-15:55	**Antoine Lejay**	Long time behavior of some self-similar fragmentation equation
16:00-16:25	**Iulian Cîmpean**	Construction of Hunt processes by the Lyapunov method and applications to generalized Mehler semi-groups
16:30-16:55	**Vlad Ştefan Barbu**	Testing statistical hypotheses for Markov chains

17:00-17:25	**Emil Simion**	Limitation of statistical tools in validation of random number generators
17:30-17:55	**Alexandra Teodor**	Nonlinear Dirichlet problem of non-local branching processes

Special Session *Numerical analysis*

Chairperson: Alexandre Ern

16:00-16:25	**Marina Vidraşcu**	Numerical Simulation of Fluid-Structure Interaction in the Left Heart with Reduced Valve Modeling
16:30-16:55	**Sorin-Mihai Grad**	A fresh look at algorithms for solving smooth multiobjective optimization
17:00-17:25	**Andreea Grecu**	Numerical spectral analysis of Cauchy-type inverse problems: A probabilistic approach
17:30-17:55	**Roxana Dumitrescu**	TBA
18:00-18:25	**Lori Badea**	Convergence of classical and multilevel variants of the Uzawa algorithm for general saddle point problems

WEDNESDAY, AUGUST 28, 2024

Chairperson: Radu Precup

9:00-9:50	**Mircea Bîrsan**	Equilibrium conditions and existence of energy minimizers for higher order models of nonlinear elastic shells
10:00-10:50	**Radu Purice**	Analyse spectrale des familles de Bloch isolés dans un champ magnétique regulier

Coffee Break

Chairperson: Radu Purice

11:15-12:05	**Denis Villemonais**	Recent results for the study of quasi-stationary distributions

Lunch

14:30-20:00	**Excursion and conference dinner**	

THURSDAY, AUGUST 29, 2024

Chairperson: Denis Villemonais

9:00-9:50	**Cristian Cazacu**	Uncertainty principles and sharp stability of functional inequalities
10:00-10:50	**Radu Ştefan**	Rank revealing algorithms for general rational matrices: class of solutions and applications

Coffee Break

Chairperson: Blanche Buet

11:15-12:05	**Frédéric Rousset**	Derivation and analysis of singular Vlasov equations

Lunch

Special Session *Analysis and PDEs*

Chairperson: Cristian Bereanu

14:00-14:25	**Pei Su**	Regularity for a perfect elastic beam interacting with the Navier-Stokes equations
14:30-14:55	**Antoine Detaille**	A glimpse at the marvelous world of Sobolev mappings into manifolds

Coffee Break

Chairperson: Romain Joly

15:30-15:55	**Martin Donati**	Localization for helical vortex filaments
16:00-16:25	**Dragoş Manea**	Discrete Laplacians on the hyperbolic space - a compared study
16:30-16:55	**Nicuşor Costea**	Steklov eigenvalue problems with weights for the ϕ-Laplacian
17:00-17:25	**Laurent Lafleche**	Semiclassical Limit of the Bogoliubov-de Gennes Equations
17:30-17:55	**Claudiu Mîndrilă**	Nonlinear fluids and Lipschitz truncations

Special Session *Differential equations with medical and biological applications*

Chairperson: Aurelian Cernea

14:00-14:25	**Paul Georgescu**	Facultative mutualisms and their resilience: global stability of coexistence equilibria
14:30-14:55	**Ana-Maria Bordei**	Drug Resistance Pathways in Chronic Myeloid Leukemia

Coffee Break

Chairperson: Andrei Halanay

15:30-15:55	**Aurelian Cernea**	On a fractional differential inclusion arising from HIV models
16:00-16:25	**Laurance Fakih**	Modeling Immune Dynamics and Allergic Reactions in CML Therapy
16:30-16:55	**Rodica Rădulescu**	Modelling HIV therapy and allergic reactions
17:00-17:25	**Irina Badralexi**	Oscillations in a delay differential equations model for blood disorders under periodic treatment
17:30-17:55	**Marian Petrica**	Identification of the parameters in a modified SIRD epidemic model using ensemble neural networks
18:00-18:25	**François Bienvenu**	The B2 index of galled trees

Special Session *PDEs with random coefficients and stochastic PDEs*

Chairperson: Victor Nistor

14:00-14:25	**Loïc Béthencourt**	Fractional diffusion limit for a kinetic Fokker-Planck equation with diffusive boundary conditions in the half-line.
14:30-14:55	**Ciprian Tudor**	Stein's method and the spatial average of the solutions to SPDE

Coffee Break

Chairperson: Iulian Cîmpean

15:30-15:55	**Oana Lang**	On global solutions for fluid dynamics SPDEs
16:00-16:25	**Alexandru Lazari**	Evolution time of stochastic systems with multiple final sequences of states

FRIDAY, AUGUST 30, 2024

Chairperson: Radu Purice

9:00-9:50	**Mihai Mihăilescu**	On a family of PDEs related to the principal frequency of the p-Laplacian and the p-torsion problem
10:00-10:50	**Blanche Buet**	Flagfolds: multi-dimensional varifolds to handle discrete surfaces

Coffee Break

Special Session *Analysis and PDEs*

Chairperson: Laurent Lafleche

11:15-11:40	**Cristian Bereanu**	Interactions in the Lorentz force equation
11:45-12:10	**Marc Rouveyrol**	Propagation of smallness and spectral estimates on non-compact manifolds

Lunch