

**International Conference on Mathematics  
and Computer Science  
5th Edition - MACOS 2024**

**Braşov, June 13-15, 2024**



# Technical Program

**June 13, 2024**

**14:30 - 15:30 Registration of participants**

Transilvania University Hall – *Iuliu Maniu nr. 41A*

**15:30 - 15:45 Opening Ceremony and group photo**

Transilvania University Hall

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**16:00-18:35 Plenary session - Transilvania University Hall**

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**Chair: Radu Miculescu**

16:00-16:45 Fast continuous and discrete time methods for monotone equations and variational inequalities

*Radu Ioan Boț*

**16:45-17:00 Coffee Break**

17:00-17:45 Iterated Inside Out: A New Exact Algorithm for the Transportation Problem

*Federico Della Croce*

17:50-18:35 Enhanced protein analysis using deep learning contextual embeddings

*Lucian Ilie*

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**18:45-19:15 Musical moment**

**19:30 Welcome Cocktail**

Restaurant of Transilvania University – *Memorandului nr. 39*

**June 14, 2024**

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**9:00-9:50** Plenary session  
**Room UI7**

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**Chair: Radu Păltănea**

9:00-9:45 Characterizing convexity of functions by linear approximation processes  
*Ulrich Abel, Dany Leviatan and Ioan Raşa*

9:50-10:35 Recent advances in Multi-modal Unsupervised Machine Learning  
*Nistor Grozavu*

**10:35-10:50 Coffee Break**

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**10:50-13:40** Mathematical Analysis (Convexity)  
**Room UI6**

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**Chair: Constantin P. Niculescu**

10:50-11:10 Some remarks related to the Raabe-Duhamel test  
*Andrei Vernescu*

11:10-11:30 Trace inequalities for the generalized relative entropies  
*Shigeru Furuichi*

11:30-11:50 Convex Type Inequalities on Uniformly Convex Functions via Quadratic Complete Homogeneous Symmetric Polynomials  
*Geanina Maria Lăchescu*

11:50-12:10 Boundary controls approximation for the  $2 - D$  wave equation in rectangular domains  
*Ionel Roventă*

**12:10-12:20 Coffee Break**

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**12:20-13:40** Mathematical Analysis (Convexity)  
**Room UI6**

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**Chair: Shigeru Furuichi**

12:20-12:40 Bounds for Shannon's entropy  
*Flavia-Corina Mitroi-Symeonidis and Eleutherius Symeonidis*

12:40-13:00 On Generalized Harmonic Polynomials  
*Eleutherius Symeonidis*

13:00-13:20 Functional inequalities in the framework of Banach spaces  
*Constantin P. Niculescu*

13:20-13:40 Inequalities related to the numerical radius of a bounded operator on a Hilbert space  
*Nicușor Minculete*

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**10:50-11:30**  
**Room UI7**    **Mathematical Analysis (Approximation)**

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**Chair: Ulrich Abel**

10:50-11:10 Double weighted second order modulus of continuity and applications  
*Radu Păltănea*

11:10-11:30 A Note on Stancu operators with three parameters  
*Gülen Başcanbaz-Tunca*

11:30-11:50 On the shape-preserving properties of the limit  $q$ -Durrmeyer operator  
*Övgü Gürel Yılmaz*

11:50-12:10 Complex Modified Perturbed Bernstein-Type Operators  
*Nursel Çetin*

**12:10-12:20 Coffee Break**

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**12:20-13:40**  
**Room UI7**    **Mathematical Analysis (Approximation)**

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**Chair: Radu Păltănea**

12:20-12:40 Generalized Kantorovich Operators  
*Bianca Vasian*

12:40-13:00 A Voronovskaya type theorem associated to geometric series of Bernstein - Durrmeyer operators  
*Ștefan Garoiu*

13:00-13:20 Study on composition operators associated with the Laguerre polynomials  
*Carmen Violeta Muraru-Popescu, Marius Birou and Vijay Gupta*

13:20-13:40 Some results on wavelet packet shrinkage operators  
*Stanzin Dorjai*

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**10:50-12:10**  
**Room UI3**    **Mathematical Analysis**

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**Chair: Radu Ioan Boț**

- 10:50-11:10    On the connectivity of graph Lipscomb's space  
*Radu Miculescu*
- 11:10-11:30    Fixed point results on generalized metric spaces  
*Ariana Pitea*
- 11:30-11:50    Some Sturm-Liouville type coupled systems of differential inclusions  
*Aurelian Cernea*
- 11:50-12:10    A new approach to averaged mappings in CAT(0) spaces  
*Cristina-Mihaela Călineață*

**12:10-12:20 Coffee Break**

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**12:20-13:40**  
**Room UI3**    **Mathematical Analysis**

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**Chair: Radu Miculescu**

- 12:20-12:40    The Invariant Measure for a Countable Generalized Iterated Function System  
*Izabella Abraham*
- 12:40-13:00    On the fractal operator of a mixed possibly infinite iterated function system  
*Bogdan-Cristian Anghelina*
- 13:00-13:20    A note on scalable K-g-frames  
*Nikhil Khanna*
- 13:20-13:40    Contractive affine generalized iterated function systems which are topologically contracting  
*Silviu Aurelian Urziceanu*

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**10:50-12:10**  
**Room UI2**    **Algebra, number theory and discrete mathematics**

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**Chair: Daniel Mayer**

- 10:50-11:10    Moments of quadratic L-functions over function fields  
*Adrian Diaconu*

11:10-11:30 On the p-isogenies of elliptic curves with multiplicative reduction  
*George Cătălin Turcaș*

11:30-11:50 From quaternion algebras to Fermat prime numbers  
*Diana Savin*

11:50-12:10 Some remarks on deeply ramified extensions  
*Vicențiu Pașol*

**12:10-12:20 Coffee Break**

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**12:20-13:40** Algebra, number theory and discrete mathematics  
**Room UI2**

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**Chair: Adrian Diaconu**

12:20-12:40 Group theory of cyclic cubic number fields  
*Daniel Mayer, Siham Aouissi, Bill Allombert and Abderazak Soullami*

12:40-13:00 On a new generalization of Pell graphs  
*Elif Tan*

13:00-13:20 Remarks on the coefficients of ternary cyclotomic and invers cyclotomic polynomials  
*George-Cătălin Turcaș, Dorin Andrica and Ovidiu Bagdasar*

13:20-13:40 From Number Theory to Group Theory  
*Iulia Cătălina Pleșca and Marius Tărnăuceanu*

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**13:40 - 15:40 Lunch**

Restaurant of Transilvania University – *Memorandului nr. 39*

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**15:40-17:00** Computer Science  
**Room UI6**

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**Chair: Federico Della Croce**

15:40-16:00 A Multidimensional Approach to Predicting Action Probability from Text  
*Elena Pelican and Vlad Belciug*

16:00-16:20 Optimizing University Timetables: A Dynamic Genetic Algorithm Solution  
*Irina Stancu-Viziri, Mihai-Lucian Rîtan and Alexandra Băicoianu*

16:20-16:40 The Impact of Size and Variability of Multispectral Data Sets on Image Visualization Quality  
*Ioana Cristina Plajer, Alexandra Băicoianu and Mihai Ivanovici*

16:40-17:00 Cost optimization of increasing the widest path between two nodes in a network  
*Adrian Deaconu*

**17:00-17:10 Coffee Break**

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**17:10-18:30**    **Computer Science**  
**Room UI6**

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**Chair: Nistor Grozavu**

17:10-17:30 Optimizing Path Management and Retrieval in Dynamic Networks for Improved Maximum Flow Calculation  
*Luciana Majercsik*

17:30-17:50 The links between the internet of everything, education and large language models  
*Liana Luminița Boca and Vasile Teodor Dădârlat*

17:50-18:10 Multi-parameter optimization of energy consumption in 3D printing  
*Ioannis Kechagias*

18:10-18:30 IAM about automation assigning identities to users  
*Silviu Răzvan Dumitrescu*

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**15:40-17:00**    **Dynamical Systems**  
**Room UI2**

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**Chair: Nicoleta Voicu**

15:40-16:00 About the linear stability of the regular  $n$ -gon rotating equilibria with logarithmic gravitational interaction  
*Daniel Pașca*

16:00-16:20 The circular restricted 4-body problem with logarithmic potential  
*Anna-Monika Muscas*



16:40-17:00 On tempered exponential dichotomy for random semi-dynamical systems  
*Oana Albescu and Ioan Lucian Popa*

**17:00-17:10 Coffee Break**

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**17:10-17:50** **Dynamical Systems**  
**Room UI2**

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**Chair: Daniel Paşca**

17:10-17:30 Metric-affine cosmological models and the inverse problem of the calculus of variations  
*Nicoleta Voicu*

17:30-17:50 Cosmological spacetime solution of Finsler gravity equation  
*Annamaria Friedl and Elena Popovici-Popescu*

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**15:40-17:00** **Applied Mathematics**  
**Room UI7**

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**Chair: Cristian Lăzureanu**

15:40-16:00 Construction of New Skew Codes over Finite Rings  
*Aicha Batoul*

16:00-16:20 A Nonlinear Fourth-order Diffusion-based Video Filtering Technique  
*Tudor Barbu*

16:20-16:40 Inheritance Pattern of Huntington's Disease, a Multiplayer Game  
*Genrev Josiah Villamin*

16:40-17:00 Second-order evolution inclusions with anti-periodic solutions and one parameter  
*Ioan Vladimir Vîntu*

**17:00-17:10 Coffee Break**

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**17:10-18:30** **Applied Mathematics**  
**Room UI7**

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**Chair: Tudor Barbu**

17:10-17:30 On Darboux polynomials and integrable deformations of three-dimensional dynamical systems  
*Cristian Lăzureanu*

- 17:30-17:50 Modeling Nutrient Constraints and their Impact on Tumor Progression  
*Ahlam Elkhettab*
- 17:50-18:10 Mixed Dirichlet-Robin problem for coupled anisotropic Darcy-Forchheimer-Brinkman equations  
*Andrei Gasparovici*
- 18:10-18:30 Convergence, almost convergence of triple sequences and their interconnection in the environment of uncertainty  
*Birojit Das*
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**19:30 Dinner**

**Restaurant of Transilvania University – Memorandului nr. 39**

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## **June 15, 2024**

**9:00-16:00 Excursion and Lunch**

Departure from Faculty of Mathematics and Computer Science  
*Iuliu Maniu no. 50*

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### **Other participants of MACOS 2024:**

Lecturer Nicoleta Enache-David  
Assoc. Prof. Olivia Florea  
Assoc. Prof. Andreea Fulga  
Lecturer Camelia Mîzgaciu  
Lecturer Vlad Monescu  
Assist. Maria Nuțu  
Assist. Cristina Maria Păcurar  
Prof. Dorina Răducanu  
Assoc. Prof. Lucian-Mircea Sasu  
Assoc. Prof. Livia Sângeorzan  
Assoc. Prof. Gabriel Stan

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