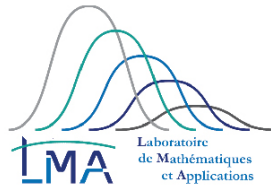




Laboratoire
Ingénierie
Mathématiques
et informatique



**LABORATORY OF MATHEMATICS AND APPLICATIONS (LMA)
And LABORATORY OF MATHEMATICAL ENGINEERING
AND COMPUTER SCIENCE (IMI)
Organize**

2nd International Conference

**ON MATHEMATICAL ANALYSIS AND MACHINE LEARNING
(ICMAML2024)**

TOPICS

- Mathematical analysis
- Algebra and Applications
- Mathematics for Finance
- Optimization
- Statistics
- Artificial intelligence

28-30 November, 2024

**AT THE FACULTY OF SCIENCE
AGADIR**

m3l.24conf@gmail.com





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OUR KEYNOTE SPEAKERS



Pr. Abdallah Mkhadri,
University of Cadi Ayyad, Morocco.



Pr. Abdeljalil Nachaoui,
University of Nantes, France.



Pr. Abdelkarim Bourouihia,
Nova Southeastern University, USA



Pr. Belmesnaoui Aqzzouz,
Mohamed V University, Morocco.



Pr. El Haj Laamri,
University of Lorraine, France.



Pr. Emmanuel Lepinette,
Paris Dauphine University, France.



Pr. Mohammed Baraa,
University of Cadi Ayyad, Morocco.



Pr. Nour Eddine Alaa,
University of Cadi Ayyad, Morocco.



Pr. Yasmine LAMARI,
University of Ibn Zohr, Morocco.

OVERVIEW

The aim of this conference is to bring together researchers, academics, and students from both the academic and industrial sectors, all connected by their interest in mathematics and its Applications. On the others hand, it gives the participants an opportunity to establish contacts and exchange new ideas, discuss challenging issues, foster future collaborations and interact with each other. this also motivates young researchers and graduate students to work in many fertile subjects of mathematics.

TOPICS

- Mathematical analysis
- Optimization
- Algebra and Applications
- Statistics
- Mathematics for Finance
- Artificial intelligence

KEY, DATES AND DEADLINES

- Abstracts Submission Deadline : 27 octobre 2024
- Notification of acceptance : 3 Novembre 2024
- Publication of the program : 23 Novembre 2024

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CONFERENCE PROGRAM

28-30 November, 2024

AT THE FACULTY OF SCIENCE, AGADIR

THURSDAY NOVEMBER 28, 2024

8h30 - 09h00
09h00

REGISTRATION OF PARTICIPANTS

OPENING CEREMONY (Amphitheatre BR)

PLENARY SESSIONS

Moderator: Prof. Samir El Kabbaj

9h30-10h10

Global existence for reaction-diffusion systems with control of total mass: Recent results.
Prof. El Haj Laamri (University of Lorraine, France)

10h10-10h50

Conditional operator and random optimization in mathematical finance
Prof. Emmanuel Lepinette (Paris Dauphine University, France)

COFFEE BREAK

PARALLEL SESSIONS

	Session 1 : Amphitheater BR Moderator : Prof. S. El Morchid	Session 2 : Room BS5 Moderator: Prof. R. Abounacer	Session 3 : Room BS3 Moderator : Prof. I. Akharraz	Session 4 : Room BS2 Moderator : Prof. M. Boumazgour
11h10-11h30	Maha Daoud (ENSTA -Paris) Parabolic reaction-diffusion systems governed by different fractional Laplacians with mass control : Theory and simulations	Elkhaiar Soufiane (FSA- Ait Melloul) Stability analysis of an SEIS epidemic model with saturated incidence rates	Zaaouat Ali (FS - Kenitra) A Comparative Study of Stock Market Forecasting: Assessing Conventional Time Series Methods Versus Deep Learning Techniques.	Dimou Hajira (FSA- Ait Melloul) A New Variant of Wilson's Functional Equation on Monoids
11h30-11h50	Mohamed Boukdir (FP- Ouarzazate) Non-autonomous Cauchy problem with instantaneous average	Oulaanzi Yassine (FS - Agadir) A Comparative Evaluation of Operators in Large Neighbourhood Search metaheuristic	El Ghandour Abdessamade (FS - Agadir) Detecting weak and strong depression on social media	Belfakih Keltouma (FP- Taroudant) Another Cosine-Sine functional equation on semigroups
11h50-12h10	Ismail Khelifi (FST - Settat) Wolff Potential Estimates for Supersolutions of Equations with Generalized Orlicz Growth	Taha Anass (FP - Taroudant) A Discrete Mountain Gazelle Optimizer (DMGO) for Efficiently Solving Capacitated Vehicle Routing Problem	Bounja Karim (ENSA- Berrechid) A Novel Framework for VIX Option Pricing: Overcoming Data Limitations with Deep Learning	Farhat Karim (FP- Beni Mellal) Stability of an extension of the Levi-Cevita equation on semigroup
12h10-12h30	Ettoussi Razika (FST- Beni Mellal) Application of intuitionistic fuzzy laplace adomian decomposition method for solving intuitionistic fuzzy differential equations	Echchehira Mohamed (FSA- Ait Melloul) On Numerical Solution of Conformable Fractional Differential Equations Using a New Predictive-Corrective Approach	Labrik Yacine (FS- Agadir) Detecting Depression on Arabic Social Media Using Deep Learning.	Ahendouz Youssef (FS Agadir) On Self-Dual Constacyclic Codes of Length ps over $F_{p^m} + uF_{p^m} + u^2F_{p^m}$

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PLENARY SESSIONS

Moderator : Prof. R.Daher

15h30 - 16h20

Recent developments in meshless methods for inverse problems
Prof. Abdeljalil Nachaoui (University of Nantes, France)

16h20 - 17h10

Similarities and differences between spherical spectrum of quaternionic right linear bounded operators and spectra of complex linear operators.

Prof. Mohammed Baraa (University of Cadi Ayyad, Morocco)

PARALLEL SESSIONS

	Session 5 : Amphitheater BR Moderator : Prof. N.IZEM	Session 6 : Room BS5 Moderator: Prof. M.Boumzgour	Session 7: Room BS3 Moderator : Prof. B. Hafidi	Session 8 : Room BS2 Moderator : Prof. A. Riffi
17h10-17h30	Tayeq Hatim (FP- Larache) Robust methods for improving the approximate solution of a discontinuous elliptic problem	Taki Zakaria (FS - Marrakech) About the numerical range of the basic elementary operator in semi-Hilbertian spaces	Elamrani Oussama (FS- Agadir) Preprocessing via fitting copula	Flouet El Hassane (CrmeF - Agadir) Generalization of Kraft's Theorem
17h30-17h50	Boumzough Khalifa (FS- Agadir) Convergence Analysis and Acceleration of the JN Relaxed Algorithm for Convection-Diffusion Cauchy Problems	Sougrati Abdelghani (FS - Agadir) Daugavet equation for basic elementary operators	Belgraoui Youssef (FST- Mohammedia) Comparison of Extended Kalman Filter and Ensemble Kalman Filter parameter estimation based on stochastic SIR model for Covid-19 epidemic	Tamoussit Ali (CrmeF - Agadir) On $\mathcal{S}\mathcal{D}\mathcal{S}$ -algebras between $\mathcal{S}\mathcal{D}\mathcal{X}\mathcal{S}$ and $\mathfrak{M}(\mathfrak{I}\mathfrak{N})\mathcal{D}\mathcal{S}$
17h50-18h10	Essaid Aourir (FS- Agadir) Comparative Study of Enhanced Numerical Methods for Solving Integral and Differential Equations	Aserrar Youssef (FS - Agadir) Trigonometric functional equations on semigroups	Bourzik Dounia (FS - Marrakech) Optimal rank-based procedures for testing non linear regression model	Ouzzaouit Omar (ESEF - Agadir) On some polynomial overrings of integral domains
18h10-18h30	Ijerch Mariam (FS- Agadir) Artificial Viscosity Stabilization of Meshless Methods for One-Dimensional Shallow Water in Channels	Hassaouy Mohammed (FS- Kenitra) EUCLIDEAN RADIUS INEQUALITIES FOR HILBERT C^* -MODULES	Echtouki Aicha (FSJE - Ain Sebaa) Credit Risk Analysis: A Machine Learning Approach for Moroccan Companies	Sghiouer Fedoua (FS- Kenitra) Irrationality Criteria for Certain Infinite Series.

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PLENARY SESSIONS

Moderator : Prof. A. Redouani

9h00-9h50

Nonlinear hyperbolic system $p(x)$ -Growth conditions and its application to image decomposition.
Prof. Nour Eddine Alaa (Cadi Ayyad University, Morocco)

9h50-10h40

Some Results on Portfolio Theory in infinite Dimensional Vector Lattices
Prof. Belmesnaoui Aqzzouz (Mohammed V University, Morocco)

COFFEE BREAK

PARALLEL SESSIONS

	Session 9 : Amphitheater BR Moderator : Prof. N. Izem	Session 10 : Room BS5 Moderator: Prof. F. Maragh	Session 11 : Room BS3 Moderator : Prof. A. Lahmdani	Session 12 : Room BS2 Moderator : Prof. I. Akharraz
11h00-11h20	Aatrif Zineb (FS- Agadir) Low multilinear rank updates of the Sylvester tensor equation	Adnane Elmrabty (EST - Guelmim) Spectral flow and Z/kZ -manifolds	Hamdaoui Khadija (FS- Agadir) Optimizing a Difference of Quasiconvex Functions	El Bazzi Mohamed Salim (FP- Taroudant) Enhancing Document Management with Deep Embeddings: A Machine Learning Approach
11h20-11h40	Hafida HAMD (FST- Beni mellal) Cauchy problem in anisotropic thermal conduction: stabilization and resolution	Asmaa Abassi (FSTM -Casablanca) A Game Theory Framework for Blind Image Deconvolution	Chimaa Ennouri (FST- Settati) Minimization by Blocks	Oubraime Mohamed (FS- Agadir) DTW and K-means Based Algorithm for Selecting the Best Time Series Prediction Model: A Case Study
11h40-12h00	Khadija Elhadi (FS- Agadir) FINITE ELEMENT DISCRETIZATION OF THE TWO-FLUID NONSTATIONARY INCOMPRESSIBLE MAGNETOHYDRODYNAMICS EQUATIONS WITH FREE SURFACE	Eddamane Elhousseine (FS- Meknes) The Kronecker function ring of semistar	El Aoung Ahmed (FS- Agadir) Arbres de décision et forêts aléatoires : Une étude comparative	El Youbi El Idrissi Lamyae (FP - Taza) A Novel Approach Based on Autoencoders with Opposite User Inference to Solve Data Sparsity and Gray Sheep Issues in Collaborative Filtering
12h20-12h20	Abderrahim Bahssini (FS- Agadir) GENERALIZED FINITE ELEMENT METHOD FOR DIFFUSION PROBLEMS ON ANISOTROPIC MEDIA	Rachid Guirhir (FP- Ben Mellal) On the subordination principle for completely positive kernels	Abdelkarim Lahmdani (ENSA-Agadir) Text-to-Image Generation: The Architecture and Applications of DALL-E 2	Saida Hachimi El Idrissi (FS- Agadir) Understanding Social Simulation: Purpose, Types, and Impact

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PLENARY SESSION

Moderator : Prof. M. Boumazgour

15h30 - 16h20

Some Partial Results on the HRT Conjecture
Prof. Abdelkrim Bourouhiya (Nova Southeastern University, USA)

PARALLEL SESSIONS

	Session 13 : Amphitheater BR Moderator : Prof. Emmanuel Lepinette	Session 14 : Room BS2 Moderator: Prof. A. Sani	Session 15 : Room BS3 Moderator : Prof. S. Hadd	Session 16 : Room BS2 Moderator : Prof. A. Sabour
16h30-16h50	Aboutafail Othman (ENSA- Kenitra) Upper-semi-Fredholm property of operators and their modulus on Banach lattices	El Baggari Hind (FS- Marrakech) Heat Kernel for heat equation with inverse square potential and	Elmansouri Badr (FS- Agadir) Dynkin games in defaultable settings: Valuation problem via a doubly reflected BSDEs approach	Samir Soukaina (FS- Agadir) Brain Tumor Segmentation Based on RESUNET Architecture
16h50-17h10	JAWAD H'michane (ENSA - Kénitra) Contribution to L-weakly compact sets and operators between Banach lattices	Mahfoudh Mechergui (FS- Tunisia) Existence of solutions for a singular double phase Kirchhoff type problems involving the fractional $q(x, \cdot)$ -Laplacian operator	Hamza BOUNACER (FS- Agadir) On the stochastic maximal L^p -regularity for perturbed evolution equations	Zaroual Soumaya (FS- El Jadida) Predictive Maintenance in Industrial Systems: A Machine Learning Approach for Failure Prediction
17h10-17h30	Abdelmonaim Elkaddouri (ENSA- Kenitra) SOME CHARACTERIZATIONS OF UNBOUNDED DUNFORD-PETTIS OPERATORS	Achehboune Mustapha (FS- Agadir) Analysis of potential pathological behaviors of the B-S operator	Nasroallah Kaoutar (FS- Marrakech) BSDEs with central value reflection	Boulbarj Ilias (FS- Agadir) Use of advanced transformer neural networks for honey quality control via thermal image analysis
17h30-17h50	Oughajji Fatima Zahra (FS- Kenitra) On the class of b almost order (L) sets in Banach lattices	Assebbane Youness (FSA- Ait Melloul) Closed-Form Solution of Linear Differential Equations Using a Generalized Fractional Power Series	Abdelmajid Gourty (FS- Agadir) Multiple-term improvements of Jensen's inequality for (p, h) -convex and (p, h) -log convex functions	Htiti Mohamed (FP - Taza) Adaptive Steganographic Model Using Patch-Based Embedding for Large Images

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SATURDAY NOVEMBER 30, 2024

PLENARY SESSIONS

Moderator : Prof. R. Abounacer

9h00-9h50

Support Vector Machine for high dimensional data
Prof. Abdallah Mkhadri (University of Cadi Ayyad, Morocco)

9h50-10h40

Bridging Data and Creativity with Generative AI and Machine Learning advances
Prof. Yasmine Lamari (University of Ibn Zohr, Morocco)

COFFEE BREAK

PARALLEL SESSIONS

	Session 17 : Labo IMI Moderator : Prof. H. Dimou	Session 18 : Room BS5 Moderator: Prof. A. Zerbet	Session 19 : Room BS3 Moderator : Prof. K. Hamdaoui	Session 20 : Room BS2 Moderator : Prof. A. Tamoussit
11h00-11h20	Ajebbar Omar (FP- Beni Mellal) A variant of the Kannappan-sine addition law on semigroups	Belmaati Aziza (FST- Mohammedia) Parameter estimate of stochastical SIR model using EM algorithm	Rguibi Arjdal (FS- Agadir) Anomaly Detection in IoT Using Hybrid Deep Learning Models	Fihi Hiba (FS - Meknes) Derivations acting on symmetric elements with central values
11h20-11h40	Iz-iddine EL-Fassi (FST- Fes) Stability results for a type of functional equations	Fatima-Ezzahra Farah (FS- Agadir) Volatility estimation of Gaussian mean-reverting Ornstein-Uhlenbeck process of the second kind	Raja AIT EL MOUDEN (FS- Agadir) Deep Learning-based Approach for Resource's Management in Cloud Environments using Multi-Objective Optimization	El Kouabli Youssef (FS- Ain Chock) S-packing coloring of distance graphs
11h40-12h00	Eddaoudi Hicham (FS- Kenitra) Elliptic equations with nonstandard growth involving measures	Nadia ASRIR (FS- Marrakech) Sliced Inverse Regression: A Simple Alternative to Multiple Linear Regression for Dimension Reduction & Variable Selection	Soumia Benkou (FS- Agadir) Trigger-Service: A Novel E-Health Blockchain Architecture Integrating Supervised Learning Techniques	Moumen Mohamed (ENSA- Agadir) Derivations mapping into the Jacobson radical of a Banach algebra

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SATURDAY NOVEMBER 30, 2024

12h00-12h20	<p>Jaafar Ahmed (FS- Agadir) A Kannappan-cosine functional equation on semigroups</p>	<p>Jebraoui Smahane (FS- Agadir) Agent-Based Approaches in Tourism Studies: Insights, Applications, and Future Directions</p>	<p>Lahcen Oumouss (FS- Agadir) A stream cipher using cellular automata and chaotic maps</p>	<p>El Bilali Mohammed (FS- El Jadida) The DMP inverse of square matrix</p>
12h20-12h40	<p>Nafnal Youssef (FS- Agadir) Some new results on the class of b-weakly compact operators and applications.</p>	<p>Tadoummant Lahoucine (FS- Kenitra) A Numerical Scheme of a Fractional Coupled System of Volterra Integro -Differential Equations with the Caputo Fabrizio Fractional Derivative</p>	<p>Jaafri Nezha (FP - Taroudant) Comparative analysis for variants of vehicle routing problems</p>	<p>EL HASSAN AATIF (FP- Ouarzazate) Pricing of American Options with Jump Diffusion and Non-Standard Volatility</p>
12h40-13h00	<p>Issame Ahizoune (FS-Kenitra) Spectral Analysis of the Bicomplex Magnetic Laplacian and a New Bargmann Transform</p>	<p>Hicham Tchay (FST- Fes) PARAMETER IDENTIFICATION IN PARTIAL DIFFERENTIAL EQUATIONS USING FINITE VOLUME METHOD</p>	<p>Oueiddris Ilham (FS- Marrakech) Impulse controllability for degenerate parabolic equation in non divergence form with drift</p>	
CLOSING OF THE CONFERENCE				
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