

*Le laboratoire « Mathematics, Computer Sciences and Applications »
organise:
«The first International Conference on Mathematics, Data Science and Artificial
Intelligence »
(ICMDSA'25)
Le 28/11/2025 à l'Amphi des conférences FSTM*

Programme de la conférence

8H30 -9H00	Accueil des participants et Inscription
9H00 -9H30	Mots d'ouverture
Conférences Plénières : Amphi des conférences Modérateurs : Pr. N. AZOUAGH, Pr. A. MOUSSAID, Pr. R. YAFIA	
9H30-10H10	Modeling and Analysis of Complex Systems Pr. ALAOUI M. A. Aziz University of Le Havre Normandie France
11H55 -12H35	Infographie, mathématique et Proportion dorée : redécouvrir le génie mathématique de l'art géométrique Islamique Pr. KHAMJANE Aziz University of Sidi Mohamed Ben Abdellah FP, Taza, Morocco
10H50- 11H30	L'intégration des nouvelles technologies d'IA et de Blockchain dans les systèmes d'informations portuaires Pr. Cyrille BERTELLE University of Le Havre Normandie France
11H30 -11H55	Pause Café
Conférences Plénières Modérateurs : Pr. M. KABIL, Pr. A. TAIK	
10H10 -10H50	Résolution des problèmes de CFD à l'aide du calcul haute performance : des méthodes numériques classiques aux réseaux neuronaux informés par la physique Pr. KISSAMI Imad University Mohammed VI Polytechnic, (UM6P), BEN Guerir, Morocco
12H35 -13H15	The Price of Creativity: Understanding and Resolving the Generative AI Paradox Pr. ZEROUAL Imad University of Moulay Ismail, Faculty of Sciences and Technics, Meknes, Morocco
13H15 -14H00	La Prière
14H-15H	Déjeuner

Communications orales (Sessions parallèles)

15H00-18H00
NB : La durée des communications orales est de 10 min

Session 1 : Statistics, probability & applications / Data-mining, Machine Learning, Deep Learning

Chair : A. LMAKRI, A. SAIDA, A. SGHIR

- **A Mathematical Model of Financial Contagion in Banking Systems under Varying Growth Rate.** **Latifi Salma** [et al.] (Présentiel)
- **Career Typologies and Longevity after Retirement: An Integrative Machine Learning and Survival Analysis of Moroccan Public Sector Retiree .** **El Moutaki Nada** [et al.] (Présentiel)
- **A Stochastic Model for Group Testing under Random Sample Size.** **Benasquar Mohammed** [et al.] (Présentiel)
- **Impact of External Variables on the Performance of Statistical and Artificial Intelligence Models in Time Series Forecasting.** **Lahjili Ibtissam** [et al.] (Présentiel)
- **Spatio-Temporal Interpolation Method Applied to Remote Sensing: Evidence from the Moroccan Atlas Mountain.** **Insaf Marouane** [et al.] (Présentiel)
- **A Hybrid CBIR Model Combining Deep Features and Pareto Front Theory.** **Ghazli Nassima** (Présentiel)
- **Empirical Investigation of Stability in Artificial Neural Networks for Seasonal Time Series Analysis.** **Elabassi Rida** (Présentiel)
- **Hybrid Deep Learning for Image Denoising: Balancing Noise Removal and Detail Preservation with Game Theory.** **Touaoussa Mohammed** (Présentiel)
- **Monetary and fiscal policy interactions in Morocco: A Vector Autoregression (VAR) Model.** **Arrias Nada** [et al.] (Présentiel)

15H00-18H00
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Session 2: Statistics, probability & applications /Big Data and Business Intelligence / Computer Sciences for IA

Chair : F. MARZOUKI, I. ZEROUAL

- **A Game Theoretic Framework for Optimization in Computer Vision.** **Mansouhi Meriem** [et al.] (Présentiel)
- **Powering Industrial Maintenance with Artificial Intelligence.** **Elouajdi Hiba** [et al.] (Présentiel)
- **An Empirical Evaluation of Stemming Algorithms for Modern Standard Arabic and Moroccan Darija: A Comparative Experimental Study.** **Ait Elouli Abdellah** [et al.] (Distance)
- **Evidential Markov Chain.** **Ameur Meryem** [et al.] (Distance)
- **Mathematical Applications in Finance and Actuarial Science.** **Ait Brahim Abdessamad** [et al.] (Distance)
- **Optimal Detection of Threshold Effects in Regression Models with Bilinear Dependent Errors.** **Bourzik Dounia** [et al.] (Distance)
- **Integrating Stochastic Modeling and Machine Learning for Responsive E-Health Services.** **Amzil Abdellah** (Distance)
- **Darija Sentiment Analysis in the Literature: From Feature-Based Models to Pretrained Transformers.** **Sakhi Hasnae** (Distance)
- **Dynamic Optimization of Energy and Response Time in IoT-Fog Ecosystems: A Hybrid Metaheuristic Approach.** **Baroudi Akram** (Distance)
- **A Secure Image Encryption via eXOR-CBC Integration with Hyperchaotic 4D Lü System.** **Saghouri Sihame** [et al.] (Distance)

15H00-18H00 NB : La durée des communications orales est de 10 min	Session 3 : Dynamical systems / Mathematical Modeling and Image Processing Chair : Y. Abouelhanoune, A. BEN-LOGHFYRY, N. MOUSSAID, • Modeling and Analysis of a Fractional SEIR Epidemic with Nonlinear Transmission and Treatment. Aarir Mohsine [et al.] (Présentiel) • A novel PDE-constrained model Based on the Weickert controlled Diffusion Model for Image Denoising. Lehrizi Kawtar [et al.] (Présentiel) • A Physics-Informed Neural Networks for Solving some PDEs. Hafidi Jamal [et al.] (Présentiel) • Advancing Biomedical Imaging via Spectral Analysis of Fractional Gaussian Processes. Kharkhour Hala [et al.] (Présentiel) • Advancing Blind Deconvolution through Fractional Derivatives and Bilateral Total Variation. Semmane Fatima Zahra [et al.] (Présentiel) • Hybrid Game-Theoretic Model with Variable-Order Fractional Derivatives for Robust Blind Image Deconvolution. Salah Fatima-Ezzahrae [et al.] (Présentiel) • A Bilevel Optimization Framework for Nonlocal Anisotropic Diffusion-Based Image Restoration. Addouch Requia [et al.] (Présentiel) • Mathematical Modeling and Optimization of Solar Thermal Systems. Bouaiche Khalid [et al.] (Présentiel) • Multiscale Numerical Simulation of Elastic Contact on Fractal Interfaces. Abouelhanoune Younes [et al.] (Présentiel)
15H00-18H00 NB : La durée des communications orales est de 10 min	Session 4 : Dynamical systems / Mathematical Modeling and Image Processing Chair: K. ALLALI, S. HARROUDI • Stochastic SEIR Optimal Control for Public Health Strategies. El Baroudi Mohcine [et al.] (Distance) • A Robust Hybrid Scheme Integrating Fractional Nonlocal Diffusion and Bilateral Convolution for Noisy Image Recovery. Kassimi Soufiane [et al.] (Distance) • A Mixed hemivariational Approach for Modeling Frictional Contact Problems in Electro-elasticity. Elyamouni Ouïame [et al.] (Distance) • Numerical Simulation of Biphasic Immiscible Flow in Porous Media: A Comparative FEM-FVM Study. Jahid Oumayma [et al.] (Distance) • Numerical Study and Comparative Modeling of the Hygrothermal Behavior of Two Bio-Based Materials According to Künzle Model. Taibi Mohammed [et al.] (Distance) • Study of the Safety Set in an Epidemic Model. Difaa Youssef [et al.] (Distance) • Analysis of chaotic dynamics initial and boundary value problem for the viscous van Wijngaarden-Eringen model. Nafia El-Mahdi [et al.] (Distance) • Influence of Skew Angle on the Dynamic Response of High-Speed Railway Bridges. Afras Abderrachid [et al.] (Distance) • Optimal control of chronic hepatitis C and its treatment on the development of tuberculosis. El Mourabit Chaimae [et al.] (Distance)

15H00-18H00 NB : La durée des communications orales est de 10 min	Session 5: Mathematical Methods in Physics and new Technologies Chair : M. EL KHLIFI, H. LOILIJAT • A Learned Branch-and-Bound Framework for the Packing While Traveling Problem . Oulaanzi Yassine [et al.] (Distance) • Duhamel-Based Time Integration Using Extended Modal Analysis for Non-Proportional Damping Structure . El Marzguioui Samir [et al.] (Distance) • Dynamics of Parabolic Problems under Nonlinear Boundary Conditions . El Aoud Hanane [et al.] (Distance) • Dynamics of Weak Solutions for a Fractional Laplacian Parabolic Equation . El Massaoudi Mohamed [et al.] (Distance) • Efficient Numerical Schemes for Time-Fractional Integro-Differential Equations with Weak Singularities . Baroudi Sami [et al.] (Distance) • Mathematical Study of a Thermo-Viscoelastic Contact Problem Involving a Hemivariational Inequality. Lkaihal Belaid [et al.] (Distance) • Modélisation et simulation numérique de la dispersion de polluants provenant de sources ponctuelles continues . Ait Lhoussain Hamid [et al.] (Distance) • Multiple solutions for a discrete capillary problem . Barghouthe Mohammed [et al.] (Distance)
15H00-18H00 NB : La durée des communications orales est de 10 min	Session 6 : Mathematical Methods in Physics and new Technologies Chair : A. ELBOUZIDI, Y. JOUNDY • The mechanical strength of rammed earth reinforced with straw . Bilad Ayoub [et al.] (Présentiel) • XFEM Simulation of Crack Propagation under Coupled Thermo-Mechanical Fields in Friction Stir Welded Aluminium Joints . Salmi Houda [et al.] (Présentiel) • A mass-conserving numerical model to study the effect of surface texture and cavitation on periodic squeeze films. Ouahla Abdelhamid [et al.] (Présentiel) • Mathematical Modeling and Numerical Simulation of Cold Plasmas for New Technologies. Grari Meryem [et al.] (Présentiel) • Analysis of Flow Separation on a Ramp and Active Control Using Synthetic Jets . Serrar Abderrahime [et al.] (Présentiel) • Dual Algorithm Optimization with Adaptive Penalty Parameter Selection for Elastoplastic Contact Problems . Bouazid Youssef [et al.] (Présentiel) • Existence of Solutions for a Coupled Thermoelastic–Semiconductor Model . Aouane Fadoua [et al.] (Présentiel) • Global well-posedness of 3D homogeneous and inhomogeneous MHD system with small unidirectional derivative . Aarach Nacer [et al.] (Présentiel)
15H00-18H00 NB : La durée des communications orales est de 10 min	Session 7: Mathematical Methods in Physics and new Technologies Chair : A. MOUSSAID, A. TAIK • Modeling Micropolar Fluid Flow Using a Generalized Viscosity Framework with Multivalued and Nonmonotone Slip Conditions. Chaoui Jawad [et al.] (Présentiel) • Non-Newtonian squeeze film lubrication in magnetohydrodynamic journal bearings: A numerical study . Kardoudi Mohammed [et al.] (Présentiel) • Numerical modeling of rough hydrodynamic journal bearings lubricated with a ferrofluid . Elmehdi Abdou [et al.] (Présentiel) • A data-driven approach for the prediction of complex dynamical systems .

	Achraf El Omari [et al.] (Présentiel) - Numerical analysis of buckling and postbuckling of functionally graded material beams. Fouzi Redouane [et al.] (Distance) - An investigation of coupled velocity–pressure POD reduced-order model approaches for the incompressible Navier–Stokes equations. Mohamed El Hadeq [et al.] (Distance) - Stability and numerical result of a thermoelastic Timoshenko suspension bridge with second sound. My Driss Aouragh [et al.] (Distance)
15H00-18H00 NB : La durée des communications orales est de 10 min	Session 8 : Algebra & Functional Analysis Chair : A. ABASSI, S. LAZAIZ - On the Set of Artinian Subrings. Labaihi Mohammed [et al.] (Présentiel) - Some Properties of the F-limit Topology. Oudika Ayoub [et al.] (Présentiel) - Spectral Inclusion Relations for Exponentially Bounded C-Semigroups. Toukmati Ahmed [et al.] (Présentiel) - On Commuting Like Elements in Prime Rings. Benzaid Jihad [et al.] (Distance) - Generalized solution of fractional transport equation in Colombeau algebra using fixed point. Sadek Soukaina [et al.] (Distance) - Existence and Uniqueness Results for Intuitionistic Fuzzy Differential Equations with Integral Boundary Conditions. Aslaoui Tarik [et al.] (Distance) - On the Existence, Uniqueness, and Stability of Solutions to a Nonlinear Sequential ψ–Caputo Fractional Problem. El Ghazouani Aziz [et al.] (Distance) - Elliptic Problems of Divergence Type on Compact Riemannian Manifolds. Lijane Said [et al.] (Distance) - Existence of infinite weak solutions for a nonlocal eigenvalue problem in fractional Orlicz–Sobolev spaces with indefinite weight. Gholali Fatima-Zahra [et al.] (Distance)
15H00-18H00 NB : La durée des communications orales est de 10 min	Session 9 : Algebra & Functional Analysis Chair : O. GOUASNOUANE, D. KARIM - Fractional Musielak spaces: Analysis of non-local singular elliptic system. Lagnaoui Abdelbasset [et al.] (Distance) - Weak Solution, Existence, Uniqueness, and Optimal Control for the Fractional Navier–Stokes Equations. El Alaoui Mohammed [et al.] (Distance) - Linear Representation of Asymmetric Pentagonal Fuzzy Numbers. Ait Mohand Mohamed [et al.] (Distance) - Optimal control problem of a class of fractional bilinear systems. Hanza Bhilise [et al.] (Distance) - Properties Around The First Eigenvalue Of A Partial Discrete Dirichlet Boundary Value Problem and Applications. Abderrahim Mohammed [et al.] (Distance) - Quasi-Einstein locally conformally Kähler manifolds. Makroune Youssef [et al.] (Distance) - Semigroup Approach to Semilinear Fractional Evolution Systems with Variable-Order Φ – Caputo Derivatives and Kernel Operators. Zerbib Samira [et al.] (Distance) - Solving Fuzzy Fractional Differential Equations via Laplace Transform in the Sense of ψ–Caputo gH–Differentiability. Ouald-Mounti Mohamed [et al.] (Distance)

	• Study of a $p(x)$-biharmonic problem with a singular perturbation. Chamlal Ibrahim [et al.] (Distance) • Nonlinear Parabolic Problems with L^1 Data in Generalized Orlicz Spaces . Talha Abdeslam [et al.] (Distance)
15H00-18H00 NB : La durée des communications orales est de 10 min	Session 10 : Algebra & Functional Analysis Chair: A. KAMOUSS, D. NOURELABIDINE • Existence of Mild Solutions for Conformable Fractional Evolution Equations with Nondense Domains. Moualli Thami [et al.] (Distance) • Existence of mild solutions for ψ-Caputo fractional integro-differential evolution problems. Benhadda Walid [et al.] (Distance) • Existence of solutions to systems of first-order differential inclusions. Lasgaa Mohammed [et al.] (Distance) • Existence of Weak Solutions for Double Phase Problems with ϕ-Hilfer Fractional derivatives. Zineddaine Ghizlane [et al.] (Distance) • Existence of Weak Solutions for Logarithmic Double-Phase Problems Involving Convection Terms via Young Measures. Moujani Hasna [et al.] (Distance) • Existence of weak solutions to fourth-order $p(x)$-biharmonic elliptic equations via topological degree. Ait Attou Aicha [et al.] (Distance) • Existence Results for Nonlinear Sequential Hybride Fractional Differential Equation based on Dhage's Fixed Point Theorem. Ouzelmat Saliha [et al.] (Distance) • Existence and continuous dependence results of stochastic pantograph integro-differential equation with Hilfer fractional derivative . Louakar Ayoub [et al.] (Distance) • Ulam-Hyers Stability and Existence Results for vartheta-Hilfer Hybrid Iterative Fractional Differential Equations in a Weighted Space . El Fadouaki Mohamed [et al.] (Distance) • Very Weak Solution Framework for Fractional PDEs with Dirac-Type Singularities . Charafi Maryam [et al.] (Distance)
18H00-18H15	Clôture