

*Program of the first edition
ERSI'2025
1st day – 27 November 2025*

08:30 – 09:00	Registration & Welcome			
09:00 – 09:45	Opening Ceremony			
09:45 – 10:30	Welcome coffee			
10:30 – 11:20	Plenary Session 1: Pr. Said ABOUHANIFA Praxéologie de modélisation relativement au développement de la pensée algébrique dans la transition Arithmétique-Algèbre au secondaire collégial			
11:20 – 12:10	Plenary Session 2 : Pr. M. A. Aziz Alaoui Thinking Complex			
12:15 – 14:00	Lunch			
14:00 – 14:50	Plenary Session 3 : Pr. Cyrille Bertelle Netlogo, un outil pédagogique d'analyse de simulations des systèmes complexes			
14:50	Oral presentations I			
	Session 1: Mathematical Modeling in Science and Engineering	Session 2: EDP, Operator theory, Inequalities and Applications	Session 3: Optimization, Control and Numerical Analysis	Session 4: Didactics and Mathematic Didactic
14:50 – 15:05	Presentation 1 : T. Jaber A Mathematical Model of Drug-Resistant Cancer with Cell Cycle Structure: Stability Analysis and Optimal Control	Presentation 1 : A. Baihi An existence and unicity study of the (Φ, ϕ) -order Caputo fractional integro-differential system involving a Kernel operator	Presentation 1 : M. Baroudi A coinfection Model of Bacterial Meningitis Diseases With Optimal Control	Presentation 1 : M. Moukhli Caractériser la potentialité algébrique avec l'intelligence artificielle : effets des stratégies d'ingénierie des prompts
15:05 – 15:20	Presentation 2 : B. Boukili Computational Investigation of Acrylic-Based D-pi-A Organic Dyes toward Efficient and Stable Dye-Sensitized Solar Cells	Presentation 2 : E. Hassoune Double-Phase Elliptic Equations with Nonlinear Sources Existence and Uniqueness	Presentation 2 : S. El Hajhouj Time-Optimal Control for the 1D Heat Equation with Scaling Parameter	Presentation 2 : Y. Naamaoui Analyse des manuels scolaires de mathématiques à travers l'approche : Activités de modélisation génératives (MEA)
15:20 – 15:35	Presentation 3 : M. SALAMA Theoretical Study of Phase Diagrams, Magnetocaloric Properties, and Hysteresis Behavior of the LaCrO_3 Compound Using the Blume–Capel Model	Presentation 3 : L. Hmidouch Existence of entropy solutions for p-Laplacian-like Dirichlet Problems in Weighted Sobolev Space	Presentation 3 : A. Lourini Adaptive Luenberger Observer Design for Boundary Control Systems	Presentation 3 : A. Elmansouri Approche mathématique de la lutte contre la tricherie dans le système éducatif
15:35 – 15:50	Presentation 4 : E. Farah A Stochastic Model for Resistant and Non-Resistant Influenza Strains	Presentation 4 : M. El Fadouaki Existence result for a system of Psi-Caputo-type hybrid fractional differential inclusions	Presentation 4 : A. Algefary An extended Bernstein collocation method for fractional differential systems	Presentation 4 : H. Omari Learning mathematics using an AI platform for the first year of middle school

15:50 - 16:30	Coffee break			
16:35	Oral presentations II			
	Session 1	Session 2	Session 3	Session 4
16:35 - 16:50	Presentation 1 : A. Kadyri An Adaptive Approach to Maximum Power Point Tracking in Partially Shaded Photovoltaic Systems	Presentation 1 : Abdelghani Az-Edine On the Existence, Uniqueness, and Equivalence of Renormalized and Entropy Solutions of Nonlinear Elliptic Equations with Measure Data in Musielak–Orlicz Spaces	Presentation 1 : M. Mzili Conception d'un régulateur PID via Gazelle Optimiser pour la régulation efficace de la vitesse des micromoteurs	Presentation 1 : B. Benhadi Développer la compétence réflexive des enseignants stagiaires par l'analyse formative des erreurs en simulation mathématique : Expérimentation d'un protocole numérique et analyse de son impact
16:50 - 17:05	Presentation 2 : S. Soulaïmani Analysis of a Fractional Order epidemic Model with Nonlinear Incidence	Presentation 2 : K. Chabla Nonlocal Eigenvalue Problems in Variable Exponent Sobolev Spaces	Presentation 2 : A. Sakkoum Enhancing Blood Glucose Control Through the Fixed Point Theorem	Presentation 2 : N. Ait Si Abbou Les dons 3 et 4 de Friedrich Fröbel: Un matériel ludique pour développer la pensée relationnelle chez les enfants au préscolaire
17:05 - 17:20	Presentation 3 : N. Ben El Khadra Analysis of Academic Performance Using Unsupervised Machine Learning Techniques	Presentation 3 : F.E Bourhim On Fractional Integro-Differential Inclusions Via the Extended Fractional psi-Caputo Derivation	Presentation 3 : W. Abaakil Exponential stabilization of Kuramoto Sivashinsky equation with input saturation	Presentation 3 : J. Igbida Mathematical Approach to Containing Misinformation and Collective Learning in Educational Networks
17:20 - 17:35	Presentation 4 : O. Essefiani Asymptotic optimal test for non linear regression	Presentation 4 : M. Haddoub Rothe's Method for a nonlinear parabolic Problem in Musielak-Orlicz Spaces	Presentation 4 : O. Rhouni General Recursive Polynomial Interpolation Algorithm	Presentation 4 : S. Skouri Gestion didactique de la dichotomie « sens/forme » : une revue systématique de la littérature
17:35 - 17:50	Presentation 5 : H. SAKHI Leveraging MSA Transformers via Context-Aware Normalization of Moroccan Dialect	Presentation 5 : Z. Elhafiane Existence of Mild Solutions and an Averaging Principle Result for Some Neutral Partial Functional Differential Equations with Infinite Delay	Presentation 5 : A. Jaid Fixed point results via measures of noncompactness and α -admissibility	Presentation 5 : H. Lahmidi Exploring Learning Difficulties in The Limit of a Numerical Function : A Case Study in Morocco
17:50 - 18:05	Presentation 6 : S. MOUJID On the Stability of an Unemployment Model Incorporating Non-linear Job Creation	Presentation 6 : M. Benkhalia Power Utility Maximization in a Market with Gaussian Drift and High-Frequency Expert Opinions: Asymptotic Investigations	Presentation 6 : M. A. EL QASRAOUI Numerical Analysis of Fractional Differential Systems with Generalized Proportional Caputo Derivatives	Presentation 6 : D. Bennis Review of Integration of Some Discrete Topics into Secondary Education
18:05 - 18:20	Presentation 7 : Lamsoudi Modélisation mathématique de la diffusion de la lumière par des cristaux de glace hexagonaux à l'aide de l'approximation WKB	Presentation 7: A. Gourty Further A-numerical radius inequalities for semi-Hilbertian space operators	Presentation 7 : Z. Taki The numerical range of elementary operators	Presentation 7 : S. El Bakkali The Contribution of ICT to Mathematics Education: An Approach Based on the Theory of Didactic Situations
18:20 - 18:35	Presentation 8 : A. Kaddiri The DeepONet Method for Solving a Class of Typical PDE Problems in Barron Spaces via the SAWI Transform Framework	Presentation 8 : A. El Hilali Inequalities for weighted means of positive definite matrices by some weighted metrics	Presentation 8 : R. El Azar Uncertainty principle for the Q-Fourier-Dunkl transform	Presentation 8 : R. Azennar Intégration de la dérivée fractionnaire conforme dans l'enseignement des mathématiques
18:35 - 18:50	Presentation 9 : M. Farhane Global Stability Analysis of a Generalized SAIRS Epidemic Model: A Volterra-Lyapunov Approach	Presentation 9: M. El Bilali On a new class of generalized EP matrices	Presentation 9 : M. Bouchangour Weak Sub-Majorization and New Refinements of Real Power Form Inequalities for Convex Functions	Presentation 9 : M. TAIB BOUSSERBAT AI, a research tool in mathematics in Moroccan secondary schools
18:50 - 19:10	Presentation 10 : Y. Difaa Invasive Species in an Ecosystem: Non-local Dynamics	Presentation 10 : M. Rassan Lahwate Some new inequalities for (A-A) and (G-A) m-convex functions with applications	Presentation 10 : Y. TOUAIL Some New Fixed Point Results in T-Partial Metric Spaces	Presentation 10 : M. Lamaizi The Impact of TaRL Approach on Learning Convergence of Numerical Sequences: A Case Study in the Moroccan Educational Context

2nd Day – 28 November 2025

09:00 - 09:50	Plenary Session 4: Pr. Khalid HATTAF Stability and numerical methods for nonautonomous systems described by a class of fractional differential equations with real-world applications			
09:50 - 10:40	Plenary Session 5: Pr. Marc MOYON Fibonacci and the Transmission of Mathematical Knowledge: Historical and Educational Perspectives			
10:40 - 11:20	Coffee break			
11:20	Oral presentations III			
	Session 1 : Mathematical Modeling in Science and Engineering	Session 2: EDP, Complex and Harmoni Analysis	Session 3: Optimization, Control and Numerical Analysis	Session 4: Didactics and Mathematic Didactic
11:20- 11:35	Presentation 1 : A. Amzil Bio-Inspired Algorithms for TSP Optimization: Performance Analysis and Benchmarking	Presentation 1 : S. Chablaoui The quantum Adams-Bashforth-Moulton fractional method for solving quantum fractional differential equations	Presentation 1 : A. Ammar Pareto ε -subdifferential of the difference of two vector convex mappings	Presentation 1 : M. Haddar L'innovation pédagogique à l'université marocaine : regards réflexifs des doctorants de l'Université Chouaib Doukkali
11:35- 11:50	Presentation 2 : F. Rasheed Chemical reaction for Boundary Layer of a Jeffery Fluid in a Porous Medium over a Shrinking/Stretching Sheet	Presentation 2: H. Lamsikine The Singular Function Boundary Integral Method for Elliptic Problems with Vertex Singularities	Presentation 2 : W. Rafik Mathematical Modeling and Optimization Techniques for Biomedical Image Processing: Bridging Theory and Applications	Presentation 2 : A.I Nadifi Exploitation des contes dans l'apprentissage des mathématiques au primaire marocain.
11:50- 12:05	Presentation 3 : M. El Farragui Coiflet Wavelet Homotopy Analysis Method for Solving Non-Newtonian Fluid Flow with Dynamic Boundary Conditions	Presentation 3 : M. Chnigli Variational and Numerical Methods for Contact Problems in Electro-Elasticity	Presentation 3 : I. Sahib Modeling nipah virus dynamics and designing optimal control strategies	Presentation 3 : M. Echcharfy Reframing EFL Education in Morocco: Intercultural Learning as a Catalyst for Transformative, Critical, and Globally Oriented Pedagogy
12:05- 12:20	Presentation 4 : A. Madani Modeling Memory-Dependent CO ₂ Dynamics: A Fractional Calculus Approach with ABC Derivative and Stability Analysis	Presentation 4 : E. Benharaf Molecular Design and Photovoltaic Properties of Quinoxaline Derivatives: A DFT/TD-DFT Approach	Presentation 4 : A. Elkabouss Optimal Control problem of semi-linear Kirchhoff Plate Equation	Presentation 4 : N. Farid Cheating in Education through Artificial Intelligence: An Analytical Approach
12:20- 12:35	Presentation 5 : H. GOUTI Power Utility Maximization with Expert Opinions at Fixed Arrival Times in a Market with Hidden Gaussian Drift	Presentation 5 : A. El Hyat Uncertainty Principles for The Quaternion Linear Canonical Transform	Presentation 5 : Y. Maziane Optimizing Regenerative Suspension Performance: A High-Fidelity Numerical Modeling Approach for Enhanced Power Harvesting	Presentation 5 : Y. Elmaddah La Pensée Algorithmique et ses caractéristiques fondamentales
12:35 - 14:30	Lunch			
14:30 - 15:20	Plenary Session 6: Pr. Nouredine IGBIDA Mathematics and Crowds in Motion			

15:20	Oral presentations IV			
	Session 1	Session 2	Session 3	Session 4
15:20 - 15:35	Presentation 1 : M. Battaoui Optimization Models for the hydrogen supply chain: a systematic review	Presentation 1 : Y. AZZA Donoho–Stark’s Uncertainty Principle for the Quaternion Fourier Transform	Presentation 1 : M. El Moudden A New Steepest Descent Method for Solving Unconstrained and Constrained Multiobjective Optimization Problems	Presentation 1 : Y. Hamdani Lecture critique de l'enseignement-apprentissage des mathématiques dans l'enseignement primaire au Maroc:
15:35 - 15:50	Presentation 2 : R. Bouydou Analysis and improvement of a Viscosity–Splitting Method for unsteady Navier–Stokes equations	Presentation 2 : Y. EL GHALI Fractional Laplacian Problem with Nonlinear Singular Terms	Presentation 2 : H. Cherrad Optimal Control Strategies for Tubular Reactors using Integral Reinforcement Learning	Presentation 2 : A. Fouimtizi Review of Integration of Some Discrete Topics into Secondary Education
15:50 - 16:05	Presentation 3 : A. Louakar Existence and continuous dependence results of stochastic pantograph integro-differential equation with Hilfer fractional derivative	Presentation 3 : S. Zerbib On the nonlinear quadratically perturbed fractional differential systems via complex order derivative	Presentation 3 : S. Ounamane Solving Fractional Optimal Control Problems with the Caputo–Fabrizio Derivative Using Truncated Exponential Functions	Presentation 3 : A. El Guenyari Analyse des attitudes des enseignants de mathématiques face aux erreurs des élèves en calcul intégral : contribution de l'intelligence artificielle.
16:05 - 16:20	Presentation 4 : B. ALHARBI Chemical Reaction for Boundary Layer of a Jeffery Fluid in a Porous Medium over a Shrinking/Stretching Sheet	Presentation 4 : A. YASSIR Existence of Weak Solutions for a $p(x)$ -Biharmonic Problem with Navier Boundary Conditions	Presentation 4 : M. El Azzouzi Adaptive Luenberger Observer Design for Boundary Control Systems Abdellah Lourini	Presentation 4 : D. El-Otmani IA en didactique : Approches innovantes
16:20 - 16:35	Presentation 5 : A. Arif Electronic and Photovoltaic Properties of Novel Organic Sensitizers for Dye-Sensitized Solar Cells Explored through DFT/TD-DFT Modeling	Presentation 5 : C. El Maghraoui Existence and stability of mild solutions for hybrid fractional semi-linear evolution equations	Presentation 5 : S. Essarrouf Numerical Approach for Transient Heat Equations with Random Inputs	Presentation 5 : Nabila Beqqali Mathematical modeling in Moroccan teacher training
16:35 - 16:50	Presentation 6 : A. EL AOUNG Predicting the Scientific Orientation of Moroccan High School Students with Machine Learning Methods	Presentation 6 : M. Menchih Chaos Analysis of the γ -Semigroup Induced by a Conformable Partial Differential Equation	Presentation 6 : Y. Karim Operationalizing Differentiated Instruction through AI: From Automated Diagnosis to Dynamic Grouping for Enhanced Learning	Presentation 6 : A. Redouane Intégration de la dérivée fractionnaire conforme dans l'enseignement des mathématiques
16:50 - 17:05	Presentation 7 : A. Mosaad Designing a Generative AI Tutor for Mathematical Reasoning: A Conceptual and Methodological Framework	Presentation 7 : C. Lezrak Teachers' Representations of Artificial Intelligence among Moroccan Secondary and Higher Education Mathematics Teachers: A Barrier or a Lever for Pedagogical Continuity?	Presentation 7 : F.E. Wasfi LMI-Based Control Design for Reference Model Tracking in MJLS with Partially Unknown Transition Rates	Presentation 7 : L. Rouissa Understanding Students' Difficulties in Mathematical Modeling: A Categorical Analysis Based on Process Stages
17:05 - 17:20	Presentation 8 : M. ABID Bio-Inspired Algorithms for TSP Optimization: Performance Analysis and Benchmarking	Presentation 8 : A. Ouchlikh Soft Skills Integration in Scientific Disciplines : The Role of the Instructor	Presentation 8 : N. Charradi Second order viability problem in Banach spaces	Presentation 8 : S. El Boujarfaoui Validation des Tests psychométriques TTR et NS-F pour le dépistage de la dyscalculie chez les élèves du primaire au Maroc
17:20 - 17:35			Presentation 9 : A. Mounir (θ, δ) -Skew generalized quasi-cyclic codes over the ring $R = \mathbb{Z}_4 + u\mathbb{Z}_4$	Presentation 9 : A. Lakrim Une analyse des erreurs commises dans l'apprentissage de la trigonométrie à la 3 ^{ème} année du collège

<i>17:35 - 17:45</i>				Presentation 10 : A. TOUNSSI The use of Rosetta Stones platform in Moroccan higher education system_ pros and cons
<i>17:45 - 18:00</i>				Presentation 11 : M. El Meraoui Intégration de l'approche STEM dans l'enseignement des sciences physiques : étude empirique et orientations stratégiques pour les recherches futures