**People's Democratic Republic of Algeria**
**Ministry of Higher Education and Scientific Research**
**Setif 1 University Ferhat Abbas**
**Faculty of Sciences**
**Department of Mathematics**

**INTERNATIONAL CONFERENCE**

**ON MATHEMATICS AND ITS APPLICATIONS**

**IN SCIENCE AND TECHNOLOGY**

**ICMAST' 2024**

*Setif, December 15-16, 2024*

**Auditorium : Mouloud Kacem Nait Belkacem- El Bez**

# CONFERENCE PROGRAM

## Sunday, December 15th, 2024 - Morning

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| **8h 00 – 9h 00** | **WELCOME - REGISTRATION** |
| **9h 00 – 9h 30** | **OPENING CEREMONY** |
| **9h 30 – 10h 30** | Chairman: **Pr. Bachir YALAOUI**<br><br>Speaker : **Pr. Abdellah SALHI** - Title '' **Strawberry Plants will get you there: Plant Propagation-based Optimization** '' |
| **10h 30 – 11h 00** | *COFFEE BREAK* |
| **11h 00 – 12h 00** | Chairman : **Pr. Abdellah SALHI**<br><br>Speaker : **Pr. Haslinda IBRAHIM** – Title: '' **Explore, Discover & Develop (ExDID): A Combinatorial Path to Problem Solving and Nature-Inspired Design** '' |
| **12h 00 – 12h 30** | Chairman : **Pr. Abdellah SALHI**<br><br>Speaker : **Ass. Pr. Dr. Yusuf KUVVETLİ** – Title: '' **Design and Development of an Artificial Intelligence Based Online Education System** '' |

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| | *POSTER SESSION* |
| **10h 00 – 12h 00** | <ul><li>Moufida Goutali</li><li>Nor Sahnoune</li><li>Bochra Zeghad</li><li>Nassima Anane</li><li>Hadjer Laraba</li><li>Choubeila Souli</li><li>Raouf Ziadi</li></ul> <ul><li>Rania Benmenni</li><li>Nour el islam Hiber</li><li>Djaouida Guettal</li><li>Asma Maiza</li><li>Barkahoum Chebabhi</li><li>Amel Noui</li><li>Ahmed Ayoub Boukelia</li></ul> <ul><li>Aicha Kraria</li><li>Merzaka Khaldi</li><li>Assma Leulmi</li><li>Soumaya Belabbes</li><li>Fatima Khanchouche</li><li>Baya Takhedmit</li><li>Razika Sait</li></ul> |

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| **12h 30 – 14h 00** | *LUNCH BREAK* |

# Sunday, December 15th, 2024 – Afternoon

| | ORAL SESSION | | |
|---|---|---|---|
| | **SESSION 1:** Differential Equations and its Applications<br>**Chairman :** H. Benseridi | **SESSION 2:** Dynamic Systems and Mathematical Biology<br>**Chairman :** S. Mesbahi | **SESSION 3:** Algebra, Cryptography and Information Security<br>**Chairman :** N. Trabelsi |
| 14h 00 – 14h 20 | **Sara Hadi**<br>Some results on the asymptotic behaviour of Allen-Cahn equation | **Bilel Elbetch**<br>Effect of nonlinear diffusion and spatial heterogeneity on the dynamics of a population and on the coexistence of species | **Zineb Hebbache**<br>On negacyclic codes over mixed alphabet $\mathbb{Z}_p\left(\mathbb{Z}_p+v\mathbb{Z}_p\right)$ |
| 14h 20 – 14h 40 | **Hamza Brahim Boulares**<br>Maximal, Calderon-Zygmund and sublinear operators on variable weak Herz spaces | **Mohamed Cherif Benkara Mostefa**<br>Study of a differential-algebraic system with harvesting prey | **Ahlem Hamani**<br>Some results on minimal non-finite-by-(locally nilpotent) groups |
| 14h 40 – 15h 00 | **Houd Khireddine**<br>On a dynamic frictional contact problem with tresca's friction | **Nesrine Benmehenni**<br>Enhancing watermark security through Hénon-based digit shuffling | **Zoulikha Benhelal**<br>Groups whose proper subgroups of infinite rank are (locally finite)-by-engel |
| 15h 00 – 15h 20 | **Imed Heddar**<br>Stability via Lyapunov pairs for nonlinear differential equations | **Yassine Adjabi**<br>Lyapunov and Hartman type inequalities for a class of mixed nonlinear generalized Caputo fractional differential equations with a forcing term | **Boualem Sadaoui**<br>A general recursion formula for the multiple Hurwitz zeta values at non positive integers |
| 15h 20 – 15h 50 | COFFEE BREAK | | |
| | **SESSION 1:** Differential Equations and its Applications<br>**Chairman :** S. Boutechebak | **SESSION 2:** Numerical Analysis and Simulation<br>**Chairman :** Dj. Benterki | **SESSION 3:** Mathematical Finance and Economics<br>**Chairman :** N. Daili |
| 15h 50 – 16h 10 | **Bilel Madjour**<br>General decay of solutions for a von Karman plate equations with nonlinear fractional damping | **Bachir Merikhi**<br>Inverse barrier method for nonlinear programming | **Amel Belhadj**<br>An extension of rough volatility model in financial markets |
| 16h 10 – 16h 30 | **Amirouche Laadjel**<br>Some perov fixed points results in generalized tow metric spaces | **Nawel Boudjellal**<br>A theoretical and numerical study of a new weighted interior point method based on algebraic equivalent transformation for LCCO | **Amira Rami**<br>Stabilization of fractional order duopoly game between an heterogeneous player and boundedly rational player with adaptive expectation |
| 16h 30 – 16h 50 | **Lamia Chouchane**<br>Variational analysis of an elecro-viscoelastic contact problem with normal compliance and unilateral constraint | **Mostafa Bahi**<br>Study the uniform convergence of multigrid methods for parabolic variational inequality noncoercive | **Aicha Ghanem**<br>Parametric curves in Isaac's pursuit-evasion game |

| | POSTER SESSION | | |
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| **14h 30– 16h 30** | <ul><li>Chamseddine Bouaziz</li><li>Abdelmounaim Hamdi</li><li>Samiha Djemai</li><li>Houssem Eddine Kadem</li><li>Safa Benghebrid</li><li>Mohamed Meziani</li><li>Nedjma Boulelli</li></ul> | <ul><li>Bachir Fridjat</li><li>Karima Laidoune</li><li>Bilal Basti</li><li>Lina Chetioui</li><li>Fatima Hathat</li><li>Roufaida Ketfi</li><li>Meriem Guechi</li></ul> | <ul><li>Imane Zouak</li><li>Riadh Hedli</li><li>Tarek Rouabhi</li><li>Fatiha Barache</li><li>Leila Younsi née Abbaci</li><li>Lamia Djerroud</li><li>Zina Hamoudi</li></ul> |

| Monday, December 16th, 2024 – Morning | | |
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| **08h 30 – 09h 30** | Chairman : **Pr. Aissa AIBECH**<br><br>Speaker : **Pr. Abderrahmene ZIAD** - Title '' **Strong Nash implementation in finite and infinite fair allocation problems** '' | |
| **9h 30 – 10h 30** | Chairman: **Pr. Abderrahmene ZIAD**<br><br>Speaker : **Pr. Said Houari Belkacem** - Title '' **Reaction diffusion systems and applications** '' | |
| **10h 30 – 11h 00** | *COFFEE BREAK* | |
| **11h 00 – 11h 30** | Chairman: **Pr. Abderrahmene ZIAD**<br><br>Speaker : **Dr. Birsen İrem Kuvvetli's** - Title '' **PPA and its application to some Combinatorial Optimisation Problems** '' | |
| | *ORAL SESSION* | | |
| | **SESSION 1:** Differential Equations and its Applications<br>**Chairman :** I. Boukaroura | **SESSION 2:** Data Science and Analytics<br><br>**Chairman :** Y. Bencheikh | **SESSION 3:** Algebra, Cryptography and Information Security<br>**Chairman :** T. Rouabhi |
| **11h 30 – 11h 50** | **Soumia Hamdi**<br>Well-posedness and stability result for a flexible satellite system under unknown distributed disturbances during attitude maneuvering | **Fella Berrimi**<br>Mathematical tools for image processing and artificial intelligence | **Kheir Saadaoui**<br>On intuitionistic and neutrosophic fuzzy sets |
| **11h 50 – 12h 10** | **Dalila Bitat**<br>Some generalizations of integral inequalities of wendroff type | **Ikram Bouras**<br>Path based formulation for the maximum influence problem in signed social networks | **Raouda Chettouh**<br>The intersection of the disk and the rectangle containing the numerical range of a bounded linear operator |
| **12h 10 – 12h 30** | **Ghada Boutara**<br>A modified quasi-boundary value method for a class of inverse problem with involution | **Massilva Bourouina**<br>Nonparametric reliability estimation with three families of asymmetric kernels | **Salah Eddine Rihane**<br>Complete solutions of the exponential Diophantine equation $P_n^x + P_{n+1}^x = P_m^y$ |
| | *POSTER SESSION* | | |
| **10h 00 – 12h 00** | <ul><li>Abbes Ourahmoun</li><li>Samira Zahar</li><li>Abla Boulaouad</li><li>Sihem Smata</li><li>Hamid Achab</li><li>Rim Benzatat</li><li>Khaoula imane Saffidine</li></ul> | <ul><li>Besma Founas</li><li>Sabrina Guidoum</li><li>Narimene Achour</li><li>Abdelaaziz Bouziane</li><li>Meriem Chabekh</li><li>Imane Boudrissa</li><li>Imane Aouina</li></ul> | <ul><li>Slimane Hassaine</li><li>Fouzia Bouzeghaya</li><li>Chaima Benarab</li><li>Yasmina Kadri</li><li>Taklit Hana Lahlah</li><li>Aziza Aib</li></ul> |
| **12h 30 – 14h 00** | *LUNCH BREAK* | |

# Monday, December 16th, 2024 – Afternoon

| | ORAL SESSION | | |
|---|---|---|---|
| | **SESSION 1:** Numerical Analysis and Simulation + Algebra, Cryptography and information Security<br>**Chairman :** N. Chougui | **SESSION 2:** Numerical Analysis and Simulation<br><br>**Chairman :** M. Achache | **SESSION 3:** Fractional Calculus + Mathematical Methods in Engineering + History of science<br>**Chairman :** A. Kadem |
| 14h 00 – 14h 20 | **Amel Dilmi**<br>Groups whose proper subgroups of infinite rank are finite-by-hypercentral or hypercentral-by-finite | **Allaoua Mehri**<br>*A new error estimation of a finite difference Scheme for a transport-advection equation with fractional order derivative* | **Mongia Khlifi**<br>On the Super Catalan numbers and their applications |
| 14h 20 – 14h 40 | **Raouf Bouchelaghem**<br>On the linear independence measures of logarithms of rational numbers. ii | **Youcef Elhamam Hemici**<br>Study of a modified PRP method using a diagonal hessian approximation approach | **Abdelhadi Safsaf**<br>Well posedness of coupled nonlinear wave equations with logarithmic source terms and blow-up |
| 14h 40 – 15h 00 | **Welid Grimes**<br>Polynomial interior-point algorithms for linearly constrained convex optimization | **Mohamed Lamine Ouaoua**<br>Comparative numerical study between differents variants of conjugate gradient methods of the Dai-Liao type | **Kheireddine Boudehane**<br>A markov regenerative stochastic petri net for performance and reliability analysis of a 3-out-of-(2+2+1):G repairable redundant system |
| 15h 00 – 15h 20 | **Mariem Jlassi**<br>Boundary exponential stabilization of a time-delay ode-kdv cascaded system | **Yasmina Bendaas**<br>A numerical study of an infeasible interior-point algorithm for convex quadratic semi-definite optimization | **Brahim Moussaouali**<br>The critical analysis of Euclidean geometry in the arab tradition |
| 15h 20 – 15h 50 | COFFEE BREAK | | |
| 15h 50 – 16h 20 | CLOSING CEREMONY | | |