The First National Conference on Discrete Mathematics and Applications (NCDMA'2025) Novembre 26, 2025, M'sila, Algeria

NCDMA'2025 Program

Honorary Chairs : A. BOUDELLA (President of the University)

B. Nouiri (Dean of the faculty)

General Chair : L. Zedam

Committees:

President of the Scientific Committee : A. BOUDAOUD

President of the Organizing Committee : N. Ghadbane

Aims and Scopes :

The aim of the conference is discussing the latest developments and researches in the field of Discrete Mathematics and some related topics. This National Conference will also help to introduce our young researchers in various areas of Discrete Mathematics and Applications.

The interest areas of the conference include, among others, the following topics:

T1 : Group Theory and Applications,

T2 : Number Theory and Arithmetic,

T3 : Fuzzy sets theory and applications,

T4 : Graph Theory, Coding Theory and Cryptography.

Wednesday 26th November 2025

8h30 – 9h: **Registration**

9h – 9h 30: **Opening Ceremony** **(Library Hall, Faculty of Mathematics and Informatics - North Pole - University of M'sila)**

Time	Plenary Session: (Wednesday 26th November 2025)
9h30 – 10 h20	**Chairman**: Pr Douadi Mihoubi, Univ. M'sila. **Speaker**: Pr Lamnouar Noui, Univ. Batna 2 , Outils algebriques pour les compromis en securite.
10h 20- 10h40	**Break Coffee**
10h 40 – 11h30	**Chairman**: Pr Yacine Arioua, Univ. M'sila. **Speaker**: Pr Allaoua Hemmak, Univ. M'sila, From Linear Algebra to Qubits: The Mathematics Behind Quantum Computation.
11h 30 – 12 h20	**Chairman**: Pr Lamnaouar Noui, Univ. Batna 2. **Speaker**: Pr Lemnaouar ZEDAM, Univ. M'sila, Operations on ternary relations.
12 h20	**Lunch**

Oral parallel Sessions (Wednesday 26th November 2025) - Afternoon		
Time	**Workshop 1**: **Group Theory and Applications, Graph Theory, Coding Theory and Cryptography- Number Theory and Arithmetic** **Chairman**: Pr Douadi MIHOUBI- Nacer GHADBANE	**Workshop 2**: **Fuzzy sets theory and applications- Number Theory and Arithmetic** **Chairman**: Pr Lemnaouar ZEDAM – Lakhdar HEBOUB
14h – 14h 15	**Speaker**: TAANE Abdelhak, New identities for the Pell and Pell-Lucas polynomials using graph matchings.	**Speaker**: Fatima Zohra Bensaci, Generalization of Schwindt's Congruence: Arithmetic Structure of Truncated Harmonic Sums Modulo p.
14h 15 – 14h 30	**Speaker**: Oualid DJOUABI, Generating functions for the product of Gaussian Padovan and Gaussian Pell-Padovan numbers with some third-order polynomials.	**Speaker**: Djamel Himane, On the Exponential Diophantine Equation $(ux^k - 1)(vy^m - 1) = wz^r$.

14h 30 – 14h 45	**Speaker:** Khadidja Moussaoui, Some Diophantine triple.	**Speaker**: Abir YAKOUB, Investigating the solvability conditions for Sylvester equation involving bounded subnormal operators.
14h 45 – 15h 00	**Speaker**: Dyhia Fedala , Recent Advances in Exponential Diophantine Equations.	**Speaker**: Milad Messaoudi, Fuzzy Reliability Analysis of Consecutive-k-Within-m-Out-of-n:F Systems Using Signatures.
15h 00– 15h 15	**Speaker**: Hocine Ait Mohammed, An Algebraic Approach to Symmetric Cryptography via Particular Linear Recurrent Sequences of r(R) and Bijective Braiding Applications.	**Speaker**: Mraour Meriem, Novel existence and uniqueness results for Cauchy fuzzy integro-differential equation.
15h 15 – 15h 30	**Speaker**: Abdelhak Omar, A note on double Roman domination edge-critical graphs.	**Speaker**: Derardja Abdelghani, L-Fuzzy Monotone Multifunctions and Their Fixed Point Theorems.
15h30 – 15h 45	<mark>**Coffee Break**</mark>	<mark>**Coffee Break**</mark>
15h45 – 16h 00	**Speaker:** ANTAR BOUYELLI, The Extended Spectrum of Operators on Inverse Groups.	**Speaker**: Layachi Abdelkebir, Graph-Based and Fuzzy Modeling of Ionospheric TEC Anomalies for Earthquake Precursors Detection.
16h 00 – 16h 15	**Speaker**: Nazahet Fellah , Binary self dual codes from graphs.	**Speaker**: Imane Douadi, On hyperideals and hyper_lters in hyperlattice ordered commutative hypermonoids.
16h15 – 16h 30	**Speaker**: BOUNABAB Adel, Tensorial representations of some classes of multilinear operators.	**Speaker**: Mohamed Saad, On the definition of fuzzy algebraic structures.
16h 30 – 16h 45	**Speaker**: Harzelli Mohamed Rafik, Classification of Congruence Relations on the Semigroup (Z>0; +).	**Speaker**: Neche Noureddine, A Study on Fuzzy Topologies.
16h 45 – 17h 00	**Speaker**: Dehmeche Fateh, Equilibre initial des nombres premiers.	