



People's Democratic Republic of Algeria
 Ministry of higher education and scientific research
 University of Algiers Ben Youssef Ben Khedda
 Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1 ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

22.02.2025 | 8:30-17:50

PROGRAM

8 :30-9 :00

Registration

9 :00-9 :30

Opening ceremony

9 :30-10 :30

Session Chairperson : **Pr. Hamid Haddadou**

Plenary talk 1 : De la variole au COVID-19 : l'apport des mathématiques dans l'analyse des épidémies - **Pr. A. Moussaoui**

10:30-10:45

Coffee break

Poster Session

10:45-11:00

- Variational and Asymptotic Analysis of a Dynamic Viscoelastic Problem with Wear in a 3D-Thin Domain - **Ms. Benzatat Rim**
- Existence Solutions for a Multidimensional Nonlinear Reaction-Diffusion Equations - **Mr. Djemiat Rabah**
- Initial value problems using Euler,Taylor and Volterra integral equations - **Mr. Mohamed Raid Nadir**
- First and second Chebyshev polynomials to Volterra-Fredholm integral equations - **Mr. Mohamed Nasseh NADIR**
- Numerical Solution of Coupled Parabolic PDEs for NO Vibrational States in the Upper Atmosphere - **Mr. Bouziane Abdelaaziz**
- Periodicity Detection in Irregularly Sampled data by Robust Regression and Outlier Detection - **Mr. Mansouri Charef Eddine**

11:00-12:00

Session Chairperson : **Pr. Benyattou Benabderrahmane**

Plenary talk 2 : "Industrial mathematics" in the Wilaya of Bejaia: analysis of 160 problems posed by 60 industrial companies and socio-economic organizations - **Pr. Aissani**

12:00-13:00

Session Chairperson : **Pr. Benyattou Benabderrahmane**

Plenary talk 3 : Les modèles à base d'agents et quelques applications - **Pr. Nadjia El Saadi**

13:00-14:00

Lunch Break



National Colloquium on Mathematics :
 Trends and Actual Applications

...NMT2A...



People's Democratic Republic of Algeria
Ministry of higher education and scientific research
University of Algiers Ben Yousef Ben Khedda
Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1 ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

22.02.2025 | 8:30-17:50

PROGRAM

14:00-16:00	<p>Parallel Sessions</p> <p>Session 1 : Functional analysis and partial differential equations (in-person) Session chairperson : Dr. Belkacem Chaouchi</p> <p>Session 2 : Numerical analysis, optimization and optimal control (online) Session chairperson : Dr. Djedaidi Noura</p> <p>Session 3 : Dynamic systems, differential equations (online) Session chairperson : Pr. Bachouche Kamel</p>
16:00-16:15	<p>Coffee break</p>
16:15-16:30	<p>Poster Session</p> <ul style="list-style-type: none">• On the well-posedness of a spatial fractional nonlinear diffusion equation - Ms. Boudrissa Imane• Asymptotic behaviours of solution to generalized fractional integro-differential diffusion equation - Mr. Benaissi Brahim• Semi-analytic approach for solving the Fractional Differential Equations - Ms. Chita Fouzia• Un résultat de multiplicité pour un problème aux limites via la théorie du point fixe - Ms. Zahar Samira• AutoML Study on the Mortality of COVID-19 Vaccine in the Maghreb Region - Ms. Zemouli Doua• Model of Formalization of Binary Relations by Multi-Functions - Mr. Zehani Oussama• Existence and Uniqueness of Solution for the Thermo-Electro Viscoelastic Fractional Contact problem - Ms. Roufaida Ketfi
16:30-17:50	<p>Parallel Sessions</p> <p>Session 4 : Algebra and number theory (in-person) Session chairperson : Pr. Abdelmoumene Zekiri</p> <p>Session 5 : Statistical and stochastic analysis (online) Session chairperson : Dr. Ikhlef Lyes</p> <p>Session 6 : Discrete mathematics and optimization (online) Session chairperson : Dr. Zerfa Lamia</p> <p>Session 7 : Differential equations (online) Session chairperson : Dr. Ayadi Hocine</p>



National Colloquium on Mathematics :
Trends and Actual Applications

...NMT2A...



People's Democratic Republic of Algeria
 Ministry of higher education and scientific research
 University of Algiers Ben Yousef Ben Khedda
 Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

23.02.2025 | 8:30-13:00

PROGRAM

08:30-10:30	<p>Parallel Sessions</p> <p>Session 8 : Data analysis and AI (in-person) Session chairperson : Pr. Djamil Aissani</p> <p>Session 9 : Statistical and stochastic analysis (online) Session chairperson : Dr. Atik Touazi</p> <p>Session 10 : Numerical analysis, optimization and optimal control (online) Session chairperson : Dr. Amine Zouatini</p>
10:30-10:45	<p>Coffee break</p>
10:45-11:00	<p>Poster Session</p> <ul style="list-style-type: none"> • A Study of the Relationships Between Various Notions of Semi-Convexity - Mr. Merabet Ibrahim • Force de blocage de l'écoulement stationnaire du fluide herschel-bulkley - Mr. Hibaterrahmane Benmessaoud • Numerical Analysis for Image Processing in Antifungal Testing of Cobalt-Doped SiO₂ - Ms. Hadjila Nadia • Nontrivial solution for non-degenerate fractional Kirchhoff-Schrödinger-Poisson system with concave-convex nonlinearities - Mr. Boutebba Hamza • Un problème d'évolution revisité - Ms. Boukrouk Wafia • A note on double Roman domination in graphs - Mr. Omar Abdelhak • Optimizing Linear Discriminant Analysis for Imbalanced Data : Outliers Handling and Oversampling Techniques - Ms. Chettih Nadjjet • Préviation d'un Processus Autorégressif Hilbertien d'ordre 1 - Ms. Bensmain Nawel
11:00-13:00	<p>Parallel Sessions</p> <p>Session 11 : Dynamic systems, differential equations (in-person) Session chairperson : Pr. Benmazai Abdelhamid</p> <p>Session 12 : Algebra and number theory (hybrid) Session chairperson : Pr. Abdelmoumene Zekiri</p> <p>Session 13 : Functional analysis and partial differential equations (online) Session chairperson : Dr. Benia Yassine Ahmed</p>



National Colloquium on Mathematics :
 Trends and Actual Applications

...NMT2A...



People's Democratic Republic of Algeria
Ministry of higher education and scientific research
University of Algiers Ben Yousef Ben Khedda
Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1 ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

22.02.2025 | 8:30-17:50

PROGRAM

SESSION 1

- Stability and Regularity Analysis of Nonlinear Wave Equations with Localised Internal and Ventcel Boundary Conditions - **Ms. Rayan Ikram ADDOUN**
- Problems of diffraction by planar obstacles covered with thin dielectric multilayers - **Mr. Alliti Bachir**
- Nonlocal Neumann boundary conditions for the fractional $p(\cdot, \cdot)$ -Laplacian operator - **Ms. Nawal IRZI**
- Survey of Energy Dissipation in Wave Equations with Kelvin-Voigt Damping on Star-Shaped Networks - **Ms. Naima MEHENAOU**
- Existence result for a non-convex Lagrange optimal control problem - **Ms. Sara Attab**
- Coupled Cooperative Differential System : Example of two patches - **Mr. bilel elbetch**

SESSION 2

- Osmosis image editing - **Ms. Sabira BEN ALIA**
- Quadratic convex lower bound function for univariate nonconvex functions - **Mr. Djamel Zerrouki**
- Robust Control for the Stokes-Darcy system with pointwise tracking - **Mr. Merwan Abdelbari**
- Sur le processus de la rafledégénééré d'ordre deux - **Ms. Amira Aibeche**
- Construction of DNA codes from skew cyclic codes over \mathbb{R} - **Ms. Amina Delhoum**
- Cryptage d'image basé sur des transformations chaotiques - **Mr. Ahmed Sahnoune**

SESSION 3

- A family of polynomial differential systems with three hyperbolic algebraic limit cycles - **Ms. Rima Chouader**
- Système dynamique du premier ordre avec perturbation - **Ms. Nadjiba Abdi**
- On boundary value problems of fractional differential equations involving Stieltjes derivatives - **Mr. Said Baghdad**
- A Vector Approach to the Study of Integro-Differential Systems - **Mr. Abdelhamid Bensalem**
- Mathematical Analysis and Operating Diagram of the Competition Model in a Chemostat - **Mr. Nabil Hamidi**
- Mathematical Insights into Infectious Disease Transmission - **Ms. Maroua Amel Boubekeur**
- New criterion for the global practical exponential stability of nonlinear time-varying systems - **Ms. Abir Kicha**



National Colloquium on Mathematics :
Trends and Actual Applications

... NMT2A ...



People's Democratic Republic of Algeria
Ministry of higher education and scientific research
University of Algiers Ben Yousef Ben Khedda
Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1 ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

22.02.2025 | 8:30-17:50

PROGRAM

SESSION 4

- Almost Repdigits in k -Pell sequences - **Ms. Safia Seffah**
- Formules explicites pour les polynômes et nombres de Genocchi et d'Euler - **Ms. Faiza Azzouni**
- Pell numbers with property $D(4)$ - **Ms. Khadidja Moussaoui**
- Study of Hull Dimensions and LCD Codes over Finite Fields - **Ms. Fatima Zohra Khelloul**

SESSION 5

- Analysis of Exponential-Two parameters Lindley distribution and its modeling - **Ms. Ahlem Ghouar**
- Asymptotic Normality of the Kernel Estimate of the Conditional Distribution Function for functional data - **Ms. Oum elkheir Benaouda**
- Asymptotic normality of the ML_q estimator based on an extreme values distribution - **Ms. Nesrine IDIOU**
- Availability density function estimation based on Gamma and Inverse Gaussian kernels - **Ms. Yasmina Zitout**

SESSION 6

- A new type of Kannan's fixed point theorem - **Ms. Safia Bazine**
- Almost cycle extendability of a class of graphs generalizing claw free graphs - **Ms. Zineb Benmeziane daimallah**
- An new hybrid genetic algorithm for maximizing the coverage area in wireless sensor networks - **Mr. Nabil boumedine**
- Une énumération intelligente des solutions non dominées du problème du sac à dos bi-objectif en $0/1$ - **Ms. Nadia Lachemi**

SESSION 7

- A study on a class of sixth-order fractional differential equations that involve Caputo derivatives - **Mr. Rakah Mahdi**
- Un système couplé d'inclusion différentielle fractionnaire avec des multi-applications pseudo-Lipschitz - **Ms. Somia Tamouza**
- Sliding Mode Control of a chaotic System: Analysis and Dynamic Regulation - **Ms. Manal Mechekef**
- On HARDY-STEKLOV OPERATORS where $0 < p < 1$ - **Mr. Abdelaziz Gherdaoui**
- Neumann boundary value problems in anisotropic Sobolev spaces with variable exponents - **Mr. Hella Abdelaziz**



National Colloquium on Mathematics :
Trends and Actual Applications

... NMT2A ...



People's Democratic Republic of Algeria
Ministry of higher education and scientific research
University of Algiers Ben Yousef Ben Khedda
Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1 ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

23.02.2025 | 8:30-13:00

PROGRAM

SESSION 8

- Enhancing KPCA Performance with Bivariate Copulas: The BCFS-KPCA Approach - **Ms. Karima Femmam**
- Nonparametric functional estimation of the conditional quantile for truncated under censored data - **Ms. Boudada Halima**
- Asymptotic properties of a kernel estimator of regression function under mixing condition - **Ms. Sabrina BENZAMOUCHE**
- Kernel estimation of the trimmed regression for functional and truncated data - **Ms. Sarra Leulmi**
- Stochastic Modeling of Enzymatic Functioning: A Non-reliable Server Queueing System with Retrials and Orbital Search Approach - **Mr. Haroun Bouaouaou**
- Statistical analysis of the M/G/1/N/N queue with retrial and vacation - **Mr. Lyes Ikhlef**
- Local Bayesian approach in the context of estimation of the probability mass function using associated kernel method - **Ms. Lynda Harfouche**

SESSION 9

- Bayesian alternative in the estimation of the conditional density - **Ms. Ladaouri Nour El-hayet**
- Dynamics of Fractional Stochastic Systems with Set-Valued Conditions - **Ms. Fatima Zahra ARIOU**
- MISE of the copula estimators under censoring - **Ms. Samia Toumi**
- Partial Functional Mean Characterization based tests for the Bivariate Skew-Normal Distribution - **Ms. Samia MAZOUZ**
- Quadratic Fit Search Optimizer To The Machine Repair Problem With Two Removable Servers Operating Under The Triadic (0, Q, N, M) Policy And Multiple Vacation - **Mr. Abir Kadi**
- Risk-Sensitive SMP for Fractional BSDE via Malliavin calculus - **Mr. Tayeb BOUAZIZ**

SESSION 10

- A characteristic discontinuous Galerkin method for optimal control problems - **Ms. Souheyla Zelmat**
- An efficient interior-point algorithm for semidefinite optimization - **Mr. Billel Zaoui**
- An improved full-Newton step feasible interior-point algorithm for convex quadratic optimization - **Mr. Welid Grimes**
- Analysis of nonlinear mixed integral equations - **Ms. Hanane Belhireche**
- Numerical Approximation of Optimal Control for Wave Equation with Missing Data - **Ms. Abdelli Mouna**



National Colloquium on Mathematics :
Trends and Actual Applications

...NMT2A...



People's Democratic Republic of Algeria
Ministry of higher education and scientific research
University of Algiers Ben Yousef Ben Khedda
Faculty of Sciences - Department of Mathematics



MATHEMATICS : TRENDS AND ACTUAL APPLICATIONS

NMT2A

1 ST NATIONAL COLLOQUIUM

Organized by the Laboratory of Mathematical Analysis and Applications (LAMA-University of Algiers 1)

23.02.2025 | 8:30-13:00

PROGRAM

SESSION 11

- Existence of positive solutions for a Fractional boundary value problem - **Ms. Lydia Bouchal**
- Systèmes MIMO Utilisant les polynômes orthogonaux - **Mr. Djilali Naar**
- Synchronization of recurrent neural networks involving mixed delays - **Ms. Sakina Othmani**
- An nonlinear elliptic problem involves two types of terms : degenerate coercivity and singular nonlinearity - **Mr. Zouatini Amine**
- Degenerate Elliptic Equations with Variable Exponents and Multiple Types of Terms - **Ms. Teyar Radjia**

SESSION 12

- Secure Encryption Scheme Using General Linear Groups over Grouping - **Mr. Sattia Makhlouf**
- Polynômes d-orthogonaux de type Meixner - **Ms. Benamira Wissem**
- The study of the $D(1)$ -extensibility of the $D(-1)$ -triple $\{1,5,c\}$ and its associated elliptic curve - **Mr. Yacine Briedj**
- On Hyperlattice Ordered Commutative Semigroups and Some of Their Properties - **Ms. Imane Douadi**
- Examples of Lie groups in Artificial intelligence - **Ms. Noura Djellali**
- A New Algebraic Construction of Some LCD Linear Codes Over the Ring - **Ms. Haddouche Ouarda**

SESSION 13

- Singular anisotropic degenerate elliptic problems with L_m data - **Ms. Khaoula Mazouz**
- Global and Non-Global Existence Result in a Class of Viscoelastic Wave Equation With Non-linear Damping and Source Terms - **Ms. Zakia Tebba**
- Compactness of weighted Riemann-Liouville fractional operator in Morrey spaces - **Mr. Khirani Mohammed**
- Dynamical behavior of piezoelectric system with Fourier's law and delay - **Mr. Sami Loucif**
- Fixed point results for generalized contractions in dislocated quasi b -metric space - **Ms. Nadjat Hala**
- Global existence of a dynamic contact problem with normal damped response - **Ms. Imane Ouakil**



National Colloquium on Mathematics :
Trends and Actual Applications

...NMT2A...