



University of Bordj Bou Arréridj

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA  
الجمهورية الجزائرية الديمقراطية الشعبية  
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH  
وزارة التعليم العالي والبحث العلمي  
MOHAMED EL BACHIR EL IBRAHIMI OF BORDJ BOU ARRERIDJ  
جامعة محمد البشير الابراهيمي برج بوعريريج  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE  
كلية الرياضيات والاعلام الآلي



Laboratory of Mathematical Analysis  
and Applications

THE FIRST INTERNATIONAL CONFERENCE ON NONLINEAR  
MATHEMATICAL ANALYSIS AND ITS APPLICATIONS  
IC-NMAA'24 MAY 14-15 2024, BORDJ BOU ARRÉRIDJ UNIVERSITY,  
ALGERIA

## Face-To-Face Program May 14, 2024

Welcome word: 9h00-9h30

### First Plenary Conference

9h30-10h00



**Pr. Salim Messaoudi**

**Conference title:** On a truncated thermoelastic  
Timoshenko system: Existence and stability

### Second Plenary Conference

10h00-10h30



**Pr. Marcelo Cavalcanti**

Universidade Estadual de  
Maringá Brazil



### Coffee Break

10h30-11h00

Google meet link: <https://meet.google.com/efj-hocq-jgy>


## The first day May 14, 2024 (Face-to-Face)

Session 1: Partial differential equations and functional analysis Chairman: Pr. Madani Moussai and Dr. Amel Berhail		
Hour	Speaker	Presentation Title
11:00-11:20	<b>Zouatini Mohamed Amine</b>	Generalized Solutions for Elliptic Problems with Measure as Data in $L_0^{1,p(\cdot)}(\Omega)$
11:20-11:40	<b>Khelifi Hichem</b>	Anisotropic degenerate elliptic problem with singular gradient lower order term
11 :40-12 :00	<b>Zoheir Chebel</b>	Banach contraction principle with two mappings
12:30-13:30	<b>Lunch Break</b> 	
13:30-13:50	<b>Bensaid fares</b>	On superposition operator on Besov-type spaces
13:50-14:10	<b>Ayyoub Fellag Ariouat</b>	A note on a class of linear operators on Hilbert spaces
14:10-14:30	<b>Saida Sandel</b>	Etude de l'existence globale d'un système de réaction diffusion à matrice pleine avec une propriété de contrôle de masse.
14:30-14:50	<b>Berhail amel</b>	PD $^\alpha$ type Iterative Learning Control Law for a Linear FDE
14:50-15:10	<b>Coffee Break</b> 	
15:10-15:30	<b>Krouchi Abdennour</b>	Comparison of two limiters for solving the one-dimensional scalar conservation law with the discontinuous Galerkin method
15:30-15:50	<b>Fadel Houda</b>	Global existence of the solution for a viscoelastic wave equation
15:50-16:10	<b>Ishak Kettaf</b>	Existence of solutions for a nonlinear elliptic equation on a bounded domain of $\mathbb{R}^3$
16:10-16:30	<b>Abderrachid Saadi</b>	A free boundary problem with fractional Laplacian operator
16:30-16:50	<b>Madjour Bilel</b>	General Stability Result for a Viscoelastic Plate Equation with a Logarithmic Nonlinearity Source
16:50-17:10	<b>Kainane Mezzaddek Mourad</b>	The weakly coupled system of Cauchy problem for semilinear models with strong damping terms
17:10-17:30	<b>Ibtissem Benkemache</b>	Certain Type Of Solutions Of Conformable Fractional Plateau-Type Equations
Session 2: Algebra, number theory and geometry Chairman: Dr. Adimi Hadjer+Dr. Chebel Zoheir		
Hour	Speaker	Presentation Title

## The first day May 14, 2024 (Face-to-Face)


11:00-11:20	<b>Adimi Hadjer</b>	On Hom weak Hopf algebra
11:20-11:40	<b>Rachid Boumahdi</b>	Some remarks on additive and multiplicative decompositions of polynomials over unique factorization domains
11:40-12:00	<b>Abdelhak Taane</b>	On the Chebyshev polynomials and some of their new identities
12:30-13:30	<b>Lunch Break</b> 	
13:30-13:50	<b>Imane Douadi</b>	Some Fundamental Concepts For Hyperlattice Ordered Commutative Semigroups
13:50-14:10	<b>Mezeddek Tahar Mohamed</b>	A square root of a triangular Toeplitz bloc matrix.
14:10-14:30	<b>Slimane Bouhadjar</b>	Some open problems involving the difference of two powers of Padovan numbers
14:30-14:50	<b>Hamani Ahlam</b>	Groups whose proper subgroups are finite-by-(locally nilptent)
14:50-15:10	<b>Coffee Break</b> 	
15:10-15:30	<b>Benhelal Zoulikha</b>	Groups whose proper subgroups are (locally finite)-by-Engel
15:30-15:50	<b>Ahmed Benkahla</b>	Lagrange Theorem in the Bihom-group structure.
15:50-16:10	<b>Aikous Adem</b>	Rota-Baxter Hom-groups
<b>Session 3: Differential equations and dynamical systems</b> <b>Chairman: Pr. Amer Memou +Dr.Berrah Abdelmalek</b>		
<b>Hour</b>	<b>Speaker</b>	<b>Presentation Title</b>
11:00-11:20	<b>Tabouche Nora</b>	Initial value problem of a system of generalized Sturm-Liouville and Langevin Hilfer-Katugampola fractional differential equations pola fractional differential equations
11:20-11:40	<b>Mansour Mouchira</b>	Parabolic variational inequalities with Volterra-type operators
11:40-12:00	<b>Benhamouda Keltoum</b>	Explicit-implicit finite scheme approximation equation of the one-dimensional variable-order time-fractional diffusion equation
12:30-13:30	<b>Lunch Break</b> 	
13:30-13:50	<b>Dahmane Bouafia</b>	Multiplicity of positive solutions for a second-order quasilinear equations

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13:50-14:10	<b>Ghelmi Maroua</b>	Crossing limit cycles created by piecewise linear system without equilibria and Hamiltonian saddle
14:10-14:30	<b>Asma Maadadi</b>	Numerical Solution of Fredholm Integro-Differential Equations Using Legendre Collocation Method
14:30-14:50	<b>Saadaoui Mohamed</b>	Some Numerical Approximation methods to Fractional Integrals by means of derivatives
14:50-15:10	<b>Coffee Break</b> 	
15:10-15:30	<b>Souad Bounouiga</b>	Dynamics of Caputo Fractional Order SIR Epidemic Model with Stability Analysis
15:30-15:50	<b>Brik Abdellah</b>	Zero-hopf in a modified hyperchaotic Chen system
15:50-16:10	<b>Selami Halla</b>	The dynamics of three classes of planar Gradient systems
16:10-16:30	<b>Hadj Ali Bahia</b>	Linear Quadratic Regulator (LQR) and Luenberger Observer for Dynamic Solar Tracking System

### Session 4: Physical Mathematics

Chairman : Dr. Grar Nabila


Hour	Speaker	Presentation Title
11:00-11:20	<b>Grar Nabila</b>	On the numerical aspects of the time-dependent Schrödinger equation for the quantum non-conservative systems
11:20-11:40	<b>Berkani Boualem</b>	Analytical Modeling of Total Vacancy Transfer Probabilities for Elements in the Atomic Range $73 \leq Z \leq 92$ : Statistical Analysis and Interpolation Techniques
11:40-12:00	<b>Djaidja Noui</b>	Vieta-Pell collocation method to solve linear Fredholm integro-differential equations
12:30-13:30	<b>Lunch Break</b> 	
13:30-13:50	<b>Nadjet Benchiheub</b>	Klein-Gordon solution with unequal mixture of Scalar and Vector potentials for harmonic interaction model: $V(y) = \lambda_2 y^2 + \lambda_1 y + \lambda_0$
13:50-14:10	<b>Amroune Bouchra</b>	Approximate solution of flow under a sluice gate with large Weber number
14:10-14:30	<b>Zidi Amina</b>	Calculation of $(L_\gamma / L_\alpha)$ X-ray intensity ratios in lanthanides: An empirical study using the least squares mathematical method
14:30-14:50	<b>Amari Kahina</b>	Statistical Analysis and fitting method for analytical estimation of empirical $\sigma_{K\alpha}$ X-ray fluorescence cross

## The first day May 14, 2024 (Face-to-Face)

		sections for elements ranging from $_{30}\text{Zn}$ to $_{40}\text{Zr}$ by photon impact at 59.5 keV.
14:50-15:10	<b>Coffee Break</b> 	
<b>Session 5: Probability statistics +Modeling</b> <b>Chairman : Pr.Yamina khamel Benchikh+ Dr.Zeghdane Rebiha</b>		
Hour	Speaker	Presentation Title
11:00-11:20	<b>Yamina khamel Benchikh</b>	Statistical Control of Manufacturing Processes. Application to the company Sarl el Wifak (Setif)
11:20-11:40	<b>Hemis Rokia</b>	Predictive Density Order Selection of Mixture Autoregressive Models
11:40-12:00	<b>Kada Maissa</b>	Novel results on the stabilization of stochastic systems
12:30-13:30	<b>Lunch Break</b> 	
13:30-13:50	<b>Ihcene Naas</b>	Stability analysis of the ABC Algorithm : A Lyapunov based Approach
13:50-14:10	<b>Boukhari Soumia</b>	Euler schemes for solving stochastic delay differential equations
14:10-14:30	<b>Bedouhene Kahina</b>	Semiparametric von Mises kernel circular density estimator.
14:30-14:50	<b>Boukhalkhal Ikram</b>	Solving stochastic integral equation using Jacobi approximation
15:10-15:30	<b>Remili Abdeldjalil</b>	On the existence of solutions of SDE
<b>Session 5: Operational research and optimization</b> <b>Chairman : Pr.Djamel Benterki+Dr.Addoune Smail</b>		
Hour	Speaker	Presentation Title
11:00-11:20	<b>Ghellab Abdelkader Moustafa</b>	Etude comparative et expérimentale des méthodes temps-fréquence pour l'analyse des signaux non stationnaires
11:20-11:40	<b>Ouidja Daya</b>	On Solving Optimal Control Problem with Bounded Constraints Using Iterative Direct Method
11:40-12:00	<b>Larbi Asli</b>	The Estimation of Distribution Algorithm (EDA) to optimize a function over the set of efficient solutions within a Multi-objective Integer Problem (MOILP).
12:30-13:30	<b>Lunch Break</b> 	
13:30-13:50	<b>Bouzeria Zahra</b>	Exact Approach for Cardinality-constrained Portfolio Selection Problem



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13:50-14:10	<b>Guerra Loubna</b>	A new primal-dual interior point algorithm for convex quadratic semidefinite optimization
14:10-14:30	<b>Khaldi Merzaka</b>	A generalized Newton method for solving a new general absolute value equations
14:30-14:50	<b>Mohamed Chebbah</b>	Fuzzy Stochastic, Global Optimization (multi- Objectives), resolutions, Numerical simulations and Software.
14:50-15:10	<b>Coffee Break</b> 	
15:10-15:30	<b>Imane Benmehdi</b>	Exact solution approaches for a class of bilevel fractional programs
15:30-15:50	<b>Zahira Kebaili</b>	Numerical implementation of a penalty method for nonlinear complementarity problems
15:50-16:10	<b>Bendjedi Akram</b>	Study some mixed integer programming techniques at the bilevel optimization problems