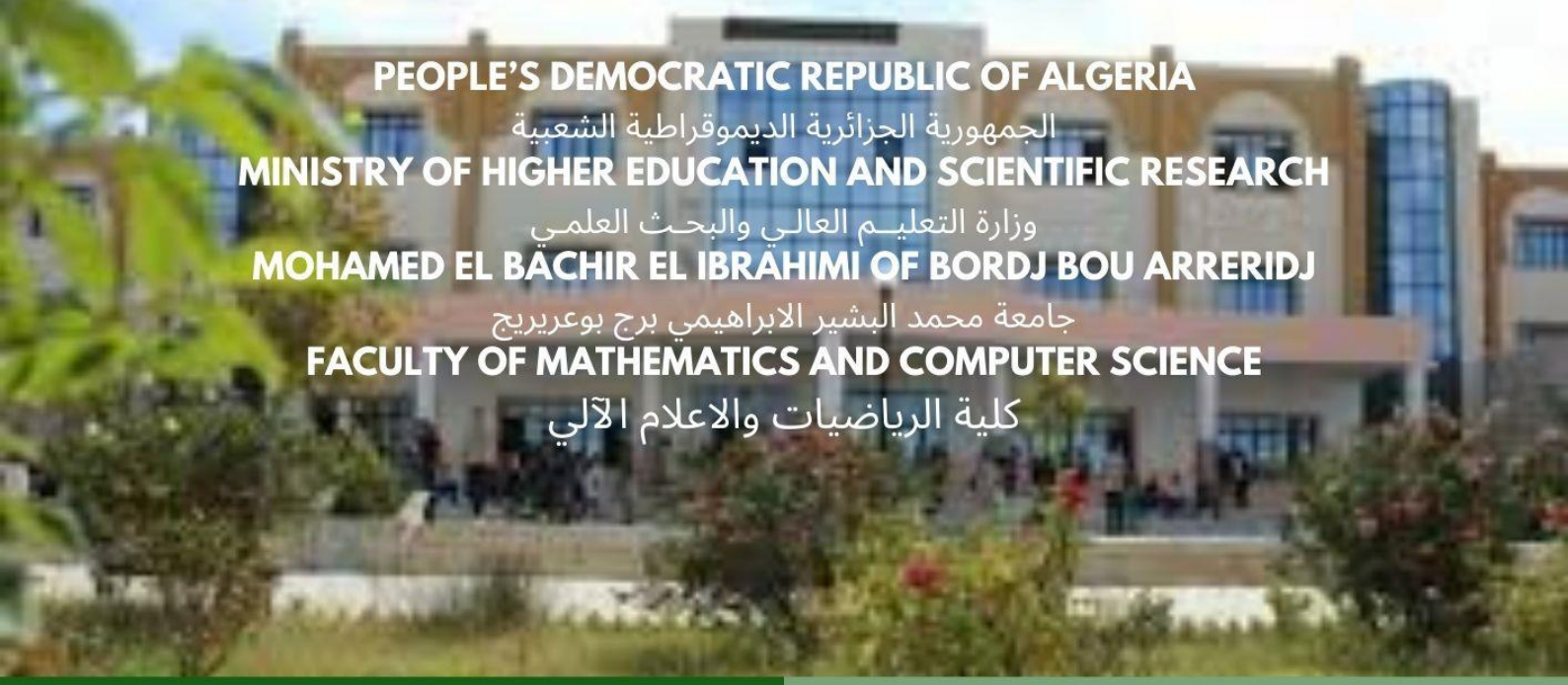

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

الجمهورية الجزائرية الديموقراطية الشعبية

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

وزارة التعليـم العالـي والبحـث العلمـي

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

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

# Online Conference Program

## Second Day 15 May 2024

Laboratory of Mathematical Analysis and Applications

University of Bordj Bou Arréridj

# The Second Day May 15, 2024 (Online Sessions)

## Sessions 1+2+3+4+5+6+7 have the following plenary speakers in common

**Chairman : Pr.Salim Messaoudi+ Dr.Berehail Amel**

**8:00-8:45 First Plenary Conference: Pr.Aissa Guesmia**

**Conference Title: Well-posedness and stability results for thermoelastic Bresse and Timoshenko-type systems with Gurtin-Pipkin's law through the vertical displacements**

**8:45-9:30: Second Plenary Conference: Pr.Kais Ammari**

**Conference Title: Stability of abstract thermoelastic delayed systems**

**Google meet:** https://meet.google.com/gsn-cxuk-pkx

## Session 1: Partial differential equations and functional analysis

**Chairman : Pr.Salim Messaoudi+ Dr.Berehail Amel**

**Google meet:** https://meet.google.com/ekn-pcqa-csi

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | Boudersa Feriel | Gevrey regularity for a coupled system of Kadomtsev-Petviashvili II ( KP- II) equations. |
| 9:45-10:00 | Berrighi Fatma | Controllability of Mild Solutions to Impulsive Functional Evolution Equations |
| 10:00-10:15 | Draifia Ala Eddine | General decay result for nonlinear viscoelastic Kirchhoff equations |
| 10 :15-10 :30 | Chichoune Romaissa | Atomic Characterization of Variable Besov-Lorentz Space Associated to Operators |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 10 :30-10 :45 | Fatima Z. Bengrine | Elliptic Lane-Emden systems |
| 10 :45-11 :00 | Hallouz Abd Elhamid | Stabilization of a Coupled Systeme of Heat and Schrodinger Equations |
| 11 :00-11 :15 | Hena Hammar | Analysis of a quasistatic problem involving electro-elasto-viscoplastic material with friction and wear |
| 11 :15-11 :30 | Karek Mohamed | Existence and asymptotic behavior of solution for a nonlinear wave equation with delay term and variable-exponents |
| 11 :30-11 :45 | Medjahed Djilali | Application of Riccati-Bernoulli Sub-ODE method to time-fractional KP-type equations |
| 11 :45-12 :00 | Mostafa Khirani | On the blowing-up of solutions for a system governed by nonlinear mixed-type fractional differential equations |
| 12 :00-12 :15 | Naouel Kechiche | Exponential Decay for the Timoshenko System with Dynamical Boundary Conditions and Past History |
| 12 :15-13 :30 | **Break** | |
| 13:30-13:45 | Omar Alimerina | Nonexistence of global weak solutions of nonlinear wave equation with friction and viscoelastic damping |
| 13 :45-14 :00 | Rabah Mecheter | Existence Results for Some Nonlinear Parabolic Equations with Degenerate Coercivity and Singular Lower-Order Terms |
| 14 :00-14 :15 | Sabit Souhila | Problem of Caputo fractional differential equations of variable order with boundary value |
| 14 :15-14 :30 | Smati Abdellatif | Comparison between Normal Operators and n-Normal Operators on Hilbert spaces |
| 14 :30-14 :45 | Aicha Benguetaib | Singular p(x)-Laplace Equations with Lower Order Terms and Hardy Potential |
| 14 :45-15 :00 | Mouchir Samiha | Non-Instantaneous Impulsive Stochastic Integro-differential Equations Driven by a Fractional Brownian Motion |

## Session 2: Partial differential equations and functional analysis

**Chairman : Pr.Dellah Mohamed + Dr. Bensaid Fares**

**Google meet:** https://meet.google.com/ghu-gwdj-xha

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | Atef Saci | Unicité et Stabilité dans un problème inverse pour un système couplé ondes-ondes |
| 9:45-10:00 | Cherief Rachid | Extended Jacobi elliptic function expansion method to solve the time fractional PHI - four equation |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| **10:00-10:15** | **Zoubida Bouazza** | Applying Darbo's Fixed Point Criterion to Analyze Stability and Solutions in Hadamard Nonlinear Variable Order Problems: An Ulam-Hyers-Rassias Approach |
| **10 :15-10 :30** | **Boureghida Remissa** | Uniform stabilization of a thermoelastic system with static Wentzell conditions |
| **10 :30-10 :45** | **Asma Ben Moussa** | Well-posedness and exponential stability of thermoelastic shear model |
| **10 :45-11 :00** | **Dounia Bouchelil** | Existence And General Decay of Evolution Problem with Time-Varying Delay |
| **11 :00-11 :15** | **Mahrouz Tayeb** | Smoothness of solutions of differential equations of constant strength in Roumieu spaces |
| **11 :15-11 :30** | **Aissa Boukarou** | White noise driven higher order nonlinear dispersive equation |
| **11 :30-11 :45** | **Reda Bousserhane** | On The Nonexistence of Global Solution for Wave Equations With Nonlinear Memory Term |
| **11 :45-12 :00** | **Nawal Irzi** | The fractional p(., .)-Neumann boundary conditions for the nonlocal p(., .)-Laplacian operator |
| **12 :00-12 :15** | **Nassima Melouane** | Fixed Point Theorems in a Cone of Banach Space for a new type of Contractive Mappings under an Abstract Measure of Non-Compactness and Applications. |
| **12 :15-13 :30** | **Break** | |
| **13:30-13:45** | **Choucha Abdelbaki** | On swelling porous-elastic soils system with thermal effect and delay: Well-posdness and Stability results |
| **13 :45-14 :00** | **Said Rafa** | Well-posedness and energy decay of solutions to the swelling porous elastic soils with fluid saturation and internal control with fractional derivative |
| **14 :00-14 :15** | **Chabane Bedjguelel** | Dynamic analysis of a population model with double Allee effect |
| **14 :15-14 :30** | **Maatallah Djemai** | Study of the effect of torsional excitation on the lateral vibratory response of an unbalanced rotor. |
| **14 :30-14 :45** | **Benaissi Brahim** | The Blow-Up Existence of Solution to Caputo–Katugampola Fractional Partial Differential Equation with Fractional Laplace |
| **14 :45-15 :00** | **Sadok Otmani** | On the study of the existence and asymptotic behavior of solution for viscoelastic wave equations with logarithmic nonlinearity |
| **15:00-15:15** | **Zineb Douara** | Etude d'un problème de Transmission dans un Domaine non Borné, cadre holdérien |
| | | |

# The Second Day May 15, 2024 (Online Sessions)

## Session 3: Partial differential equations and functional analysis

**Chairman : Pr. Aissa Guesmia +Pr. Dehmane Achour**

**Google meet: https://meet.google.com/aei-eduz-ebw**

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | **Abderrazak Mehellou** | Numerical solution of nonlinear Volterra integral equations using wavelets method |
| 9:45-10:00 | **Abed Yfrah** | Error Estimates For Finite Element Approximations Of A 2d-Viscoelastic Wave Equation With Dynamic Boundary Conditions |
| 10:00-10:15 | **Guelfen Hanane** | Solving Fuzzy System of Volterra Integral Equations by using Fuzzy Kamal Transform |
| 10 :15-10 :30 | **Boulkheloua Chaima** | Results Of Existence and Approximate Solutions for Volterra Fredholm Integro-Differential Equations |
| 10 :30-10 :45 | **Brahim Hamdi** | Elliptic problem with nonlocal boundary conditions in Lp spaces |
| 10 :45-11 :00 | **Hadjer Zerouali** | Numerical method for solving nonlinear singular pseudoparabolic equations with nonlocal mixed conditions in Reproducing Kernel Hilbert Space Method |
| 11 :00-11 :15 | **Hafida Guendouz** | An Approximate Solution of Hyperbolic Partial Differential Equation |
| 11 :15-11 :30 | **Moufida Guechi** | A Numerical Technique for Solving Nonlinear Fractional Integro-Differential Equations |
| 11 :30-11 :45 | **Naima Mehenaoui** | Nonlinear Schrödinger equation on a star-shaped network |
| 11 :45-12 :00 | **Saadi Douha** | Solving Nonlocal Initial-Boundary Value Problems for Hyperbolic Integro-Differential Equations by applying a new numerical method |
| 12 :00-12 :15 | **Said Atallaoui** | Some results for new contraction based on CG simulation functions via w-distance with applications |
| 12 :15-13 :30 | **Break** | |
| 13:30-13:45 | **Boudeliou Ammar** | Analysis on some retarded Volterra-Fredholm-type integral inequalities of several variables and applications |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 13 :45-14 :00 | Boutercha Sofiane | On the numerical solution of first order partial differential equation on half-line |
| 14 :00-14 :15 | Sara Youcef Achira | Approximate solution of stochastic differential equation (SDE) by an algebraic system of a numerical method |
| 14 :15-14 :30 | Messaoud Guesba | Etude des solutions d'equations intégrales Hammerstein et Hammerstein-Volterra |
| 14 :30-14 :45 | Radjai Abir | Rational Chebychev collocation method for the numerical solution of Fredholm integral equations on the whole line |
| 14 :45-15 :00 | Mani Abd Elouhab | Numerical method for state-dependent delay integral equations |
| 15:00-15:15 | Seghour Lamia | Vibration control of a viscoelastic flexible marine riser |
| | | |

## Session 4: Differential equations and dynamical systems

**Chairman: Pr. Khaled Zennir+Dr. Hannen Debbiche**

**Google meet:** https://meet.google.com/udo-xnoz-hjq

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | Guedim Souad | Boundary Value Problems of Hadamard Fractional Differential Equations of Variable Order |
| 9:45-10:00 | Bachmar Aziza | Analysis for unilateral contact problem with friction in electro-visco-plasticity |
| 10:00-10:15 | Belqassim Azzouz | Solution of a coupled system of fractional differential equations with nonlocal conditions |
| 10 :15-10 :30 | Boubakr Lamouri | A generalized viral infection model with non-local diffusion |
| 10 :30-10 :45 | Boukrouk Wafiya | On a nonlinear differential problem under certain physical conditions |
| 10 :45-11 :00 | Dekkiche Nora | Study of an elliptic differential equation in three habitats |
| 11 :00-11 :15 | Houari Bouzid | Analysis of Solutions for Nonlinear Fractional Differential Systems Using Caputo's q-Derivative |
| 11 :15-11 :30 | Ould Melha Khellaf | New Results on the Solvability of Abstract Sequential Caputo Fractional Differential Equations and Applications |
| 11 :30-11 :45 | Saadi Mohamed | Y a-t-il un besoin d'introduire les espaces métriques à valeurs complexes dans la théorie du point fixe ? |
| 11 :45-12 :00 | Lina Chetioui | Homotopy Perturbation Method for Solving Nonlinear Fractional Model |
| 12 :00-12 :15 | Sofiane Khoutir | Existence of solutions for a quasilinear boundary value problem driven by the one-dimensional curvature operator |
| 12 :15-13 :30 | **Break** | |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 13:30-13:45 | **Mokhtar Boumaaza** | Existence solutions of ODEs involving two generalized Caputo fractional derivatives with boundary value problems by Laplace transform |
| 13 :45-14 :00 | **Baroudi Boubakeur** | Admissibility LMI Criteria for Descriptor Fractional Order Systems with $0 < \alpha < 2$ |
| 14 :00-14 :15 | **Betteyaib Nawal** | Caputo Tempered Fractional Differential Equations with Mixed Boundary Condition Under the Weak Topology |
| 14 :15-14 :30 | **Latreche Soumia** | Analysis of a dynamic frictional contact problem with adhesion |
| 14 :30-14 :45 | **Zouak Imane** | Discrete Memristive-based Map with Fractional Order and Hidden Dynamics |
| 14 :45-15 :00 | **Fatiha Nedjm** | Existence of Periodic Oscillations and Stability in a Delayed Virotherapy Model |
| 15:00-15:15 | **Chihi Nabila** | Study of a Generalized Proportional Fractional Creep Problem with Multiple Delays |
| 15:15-15:30 | **Souad Bounouiga** | Dynamics of Caputo Fractional Order SIR Epidemic Model with Stability Analysis |

## Session 5: Differential equations and dynamical systems

**Chairman: Pr. Boukoucha Rachid+Pr. Benterki Rebiha**

**Google meet:** https://meet.google.com/ukg-pyrk-exq

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | **Hedli Riadh** | Application and Efficacy of the Generalized Kudryashov Method for Exact Traveling Wave Solutions of Some Non-linear Evolution Equations |
| 9:45-10:00 | **Mohamed Aili** | Optimal energy decay for a viscoelastic equation with distributed delay acting on nonlinear frictional damping |
| 10:00-10:15 | **Yassamine Chellouf** | Numerical solution of fractional hope field neural networks using reproducing kernel Hilbert space method |
| 10 :15-10 :30 | **Belfar Ahlem** | Geometry Solutions of a New Class of Nonlinear Planar Differential Systems with as Solution a Cubic Algebraic Curve |
| 10 :30-10 :45 | **Djamel Eddine Hettadj** | Investigation of nonlinear fractional differential equation with integro-multipoint boundary conditions |
| 10 :45-11 :00 | **Lydia Bouchal** | Existence results for a fourth-order differential boundary value problem at two points |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 11 :00-11 :15 | **Mokhtar Khassani** | Regularity of the solution of a population dynamics model governed by a differential equation with operator coefficients. |
| 11 :15-11 :30 | **Khelifa Daoudi** | Mild of solutions for integro-differential impulsive equations with infinite interval |
| 11 :30-11 :45 | **Bouzeraa Seif El Islam** | Fractional Tent map: Bifurcation and chaos |
| 11 :45-12 :00 | **Bensalem Abdelhamid** | Attractivity of Solutions for First Order Impulsive Integro-Differential Equations |
| 12 :00-12 :15 | **Aida Bellout** | Exploring Chaos in the Discrete Fractional Gauss Map |
| 12 :15-13 :30 | **Break** | |
| 13:30-13:45 | **Louiza Diabi** | On Chaos in discrete fractional Financial system: Bifurcation, entropy, 0–1 test |
| 13 :45-14 :00 | **Zerki Ali** | On Third-Order Nonlinear IBVPs on the Half-Line |
| 14 :00-14 :15 | **Noureddine Djenina** | Lyapunov's Method for Stability Analysis of Nonlinear Fractional Differential Equations with Incommensurate Orders |
| 14 :15-14 :30 | **M'hamdi Mohammed Salah** | On type of periodicity to a class of a competition and cooperation model for two enterprises with distributed time delay |
| 14 :30-14 :45 | **Zaamoune Faiza** | Chua's System Generated by Transformation: An Inquiry into Hopf Bifurcation and Attractor Basin Analysis |
| 14 :45-15 :00 | **Abdelkader Laiadi** | An effective operational matrix method for the solution of sixth and fifth-order boundary value problems |
| 15:00-15:15 | **Abdellah Menasri** | Dynamic Analysis of a Chaotic 3D Quadratic System Using Planar Projection |
| 15:15-15:30 | **Abdellaoui Fatima** | Stability, Square Integrability and Boundedness Properties of Solutions for Neutral Third Order Integro-Differential Equations With Variable Delay |
| 15:30-15:45 | **Amar Benkerrouche** | Boundary Value Problems of Hadamard Fractional Differential Equations of variable ordre |
| | | |

## Session 6: Modeling and Control+ Partial Differential Equations

# The Second Day May 15, 2024 (Online Sessions)

## Chairman: Pr. Mohamed Salah Abdelouahab+Dr. Belkacem Naziheddine

**Google meet:** https://meet.google.com/vjp-pgpd-jio

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | Zair Bouzidi | Modeling economic environment monitoring to enhance economic tasks using deep learning with economical education on various sources |
| 9:45-10:00 | Chetti Meryem | On the Hyper-order of Analytic Solutions of Linear Differential Equations near a Finite Singular Point |
| 10:00-10:15 | Benzaid Rachid | Boundary stabilization for weakly coupled degenerate wave equations under fractional damping |
| 10 :15-10 :30 | Lakikza Hanane | Well-posedness of a nonlinear interface problem of a multiphase multicomponent model |
| 10 :30-10 :45 | Berrimi Fella | Enhancing Image Quality Using Nonlinear Differential Equation-Based Filters |
| 10 :45-11 :00 | Derouiche Oussama | Event-driven model reference tracking control of switched systems in networked environments |
| 11 :00-11 :15 | Belguidoum Ouafa | New adaptative projection method for generalized variational inequalities problem |
| 11 :15-11 :30 | Zineb Bellabes | A novel topological methodology for probing the existence of solutions in nonlinear fractional impulsive wave equations. |
| 11 :30-11 :45 | Mihoubi Hamza | Analytical solution of time-fractional Navier – Stokes equation by use of HPLTM |
| 11 :45-12 :00 | Mohammed El Amine Riahi | On the Study of Optimal Control Governed by the Marguerre-von Kármán Equations |
| 12:00-13:30 | **Break** | |
| 13 :30-13 :45 | Amina Khirani | Solving Nonlinear Volterra Integral Equation using Lucas Polynomials |
| 13 :45-14 :00 | Bounadja Hizia | Well-posedness and general stability result for MGT problem in unbounded domain |
| 14 :00-14 :15 | Antouri Zina | A predictive spatio-temporal model for bovine Babesiosis epidemic transmission |
| 14 :15-14 :30 | Abir Mechaouf | The optimal control of a nonlinear model described by Marguerre von Karman equations |
| 14 :30-14 :45 | Soufiane Benyoussef | Solving variable order time-space fractional partial differential equations using collocation method |

# The Second Day May 15, 2024 (Online Sessions)

## Session 7: Physical Mathematics+ Partial Differential Equations

**Chairman: Pr. Kais Ammari +Dr. Berrah Abdelmalek**

**Google meet:** https://meet.google.com/gtu-tdxv-cta

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9:45 | Briki Mabrouk | Solvability of an impulsive boundary value problem on the half-line via critical point theory |
| 9:45-10:00 | Mokhtari Hanifa | The effect of an insulating stiffener on a nonlinear thermo-elastic plate |
| 10:00-10:15 | Lekdim Bilal | Stabilization of an Euler-Bernoulli beam with distributed disturbance |
| 10:15-10:30 | Asma Sahraoui | Solution of Schrödinger equation for the inverse square root potential plus a modified |
| 10:30-10:45 | Mourad Boudersa | Asymptotic behavior of elastic problem with maximal monotone graph condition and friction law Geometric of Acoustics by Jordan-Moore-Gibson-Thompson Equations |
| 10:45-11:00 | Nabil Laiche | On Fractional Stochastic Differential Equations with Caputo Katugambola ' s Approach in Nuclear Physics |
| 11 :00-11 :15 | Ahmed Guechi | An operational matrix based on shifted Jacobi polynomials for solving fractional integro-differential equations |
| 11 :15-11 :30 | Houria Serguine | Numerical Investigation into a Mathematical Model Representing Free-Surface Potential Flow |
| 11 :30-11 :45 | Mohamed Sadek Mokhtar Kharroubi | Equation de Schrödinger |
| 11:45-12:00 | Fatima Seraiche | Galerkin and Petrov-Galerkin Methods for solving a linear integral equations |
| 12 :00-13 :30 | **Break** | |
| 13 :30-13 :45 | Abdelatif Boutiara | Blowing-up solutions for time-fractional |
| 13 :45-14 :00 | Antar Bouyelli | Some contributions to extended-spectrum and extended eigenspaces of operators |
| 14 :00-14 :15 | Saadia Benatmane | Ferromagnetism in RaBi with Zinc-Blende and Wurtzite Structures: ab-initio Prediction |
| 14 :15-14 :30 | Akram Boukabache | A Hybrid Finite Element-Finite Volume Method for the generalized Stokes Problem |
| 14 :30-14 :45 | Driai Nedjoua | On Approximate Analytical Solutions for Systems of Nonlinear Fractional Partial Differential Equations |
| 14 :45-15 :00 | Hellal Abdelaziz | Singular Elliptic Problems for some Anisotropic Operators with Variable Exponents |

# The Second Day May 15, 2024 (Online Sessions)

## Session 8: Probability statistics

**Chairman: Dr.Rebiha Zeghdane+Dr. Ghebouli Messaoud**

**Google meet:** https://meet.google.com/jnv-sqvo-ptr

| Hour | Author | Presentation Title |
|---|---|---|
| 8 :30-8 :45 | Ahmed Ait Ameur | Exploration of the Exponential Convergence Speed of the Metropolis-Hastings Algorithm |
| 8 :45-9 :00 | Azzeddine Abdelhakim | Probabilistic and statistical process monitoring for multivariate risk analysis |
| 9 :00-9 :15 | Benbrahim Hafida | On Optimal Control for Mean-Field Systems Driven by Local martingales: Necessary Conditions |
| 9 :15-9 :30 | Fatma Zohra Seghier | Bivariate Poisson-XLindley Distribution and its Application in Sport |
| 9:30-9 :45 | Grara Kamila | The one-sided test and the two-sided test for the topp-leone |
| 9:45-10:00 | Halima Boudada | Rate of the almost sure convergence of the conditional quantile estimate based on truncated, functional and mixing data |
| 10:00-10:15 | Hichem Elmossaoui | Comparative Evaluation of Computer Experiment Designs Versus New Computer Experiment Designs with area interactions |
| 10 :15-10 :30 | Khalfoune Samia | Calibration problem with alpha-mixing random data |
| 10 :30-10 :45 | Nichani Rabia | Time series forecasting using Deep Learning Hybrid model (ARIMA-LSTM) |
| 10 :45-11 :00 | Medjider Meriem | Estimation of P(X>Y) for asymmetric kernels |
| 11 :00-11 :15 | Mohamed Bassoudi | Application of the CNLRM Model with Error Correction Mechanism |
| 11 :15-11 :30 | Zineb Dalla | Existence and uniqueness of asymptotically (ω, c)-periodic mild solutions of a semilinear stochastic differential equation |
| 11 :30-11 :45 | Khawla Boudjerda | Statistical inference of the Rayleigh distribution under records values using E-Bayesian method |
| 11 :45-12 :00 | Salah Eddine Semati | Application of Interval Markov Chain In The Page Rank Algorithm |
| 12 :00-13 :30 | **Break** | |
| 13 :30-13 :45 | Roubi Abdellah | Semi-linear PDEs Solutions and Their Application to the Existence of Weak Solutions for Markovian BSDEs |
| 13 :45-14 :00 | Djebar Ahlem | The generalized equity and exact credibility premiums |
| 14 :00-14 :15 | Houari Hadjaj | Cost Optimization of M/M/1 Retrial Queuing System With Exponential Distribution, Exhaustive Service And Multiple Vacation |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 14 :15-14 :30 | Maloum Aghiles | Semiparametric estimation of conditional copula when margins are subject to right censoring |
| 14 :30-14 :45 | Nabil Ait Yala | Perturbation bounds for the stationary distributions of Markov chains with application to queueing system |
| 14 :45-15 :00 | Nesrine Benaklef | MHD estimates for classic FAR (1) models, theory and simulation |
| 15 :00-15 :15 | Safia Abdouche | Stacking to improve the performance of a prediction system |
| 15 :15-15 :30 | Benhachiche Meriem | Earthquake forecasting in the Chile region based on MR and RI methods |

## Session 9: Algebra, number theory and geometry

Chairman : Dr.Adimi Hadjer+ Dr. Omar Barkat+Dr.Hassene Bouremel

8:00-8:45 Plenary Conference: Pr. Abdenacer Makhlouf

**Conference Title**: Lie triple systems: basics and recent developments on cohomology, deformations and related structures

**Google meet:** https://meet.google.com/fyd-spef-omw

| Hour | Author | Presentation Title |
|---|---|---|
| 8 :45-9 :00 | Moussaoui Hakim | Twistings on Superbialgebras |
| 9 :00-9 :15 | Ahlem Alouani | Linearization of nonlinear operators |
| 9 :15-9 :30 | Hadj Benelezaar Imane | Some Properties on Extended Eulerian Numbers |
| 9:30-9 :45 | Khadidja Boubellouta | Symmetric and Generating Functions for k-Mersenne Numbers |
| 9:45-10:00 | Mohammed Lamine Nadji | Arithmetic properties of partitions enumerated by the Andrews-Göllnitz-Gordon theorem |
| 10:00-10:15 | Benyattou Abdelkader | Congruences related to the Bell numbers and Bell polynomials |
| 10 :15-10 :30 | Saad Mohamed | Definition of picture fuzzy subgroups on group |
| 10 :30-10 :45 | Amel Zitouni | On the Infinite Intersection Property of Groups |
| 10 :45-11 :00 | Sassia Makhlouf | A New Digital Signature Using Matrices Over Groupring |
| 11 :00-11 :15 | Wissam Benamira | d-orthogonal polynomials of Laguerre type |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 11 :15-11 :30 | Hadouche Ouarda | Several results on homogeneous weights over the finite ring $\Re_{3,3}$, alongside their practical implications in linear codes over said ring |
| 11 :30-11 :45 | Dounya Hamek | Some identities and generating functions of binary products of certain Gaussians numbers with some (p,q) numbers and bivariate polynomials |
| 11 :45-12 :00 | Amina Bellil | On constacyclic and Quasi-twisted codes over R |
| 12 :00-13 :30 | **Break** | |
| 13 :30-13 :45 | Rezig Boualem | Combinatorial interpretation and some positivities of Hyper-Leonardo numbers |
| 13 :45-14 :00 | Saadi Djazia | Theoretical challenges in picture fuzzy sets: new definitions based on the D* structure |
| 14 :00-14 :15 | Rakdi Mohamed Anouar | Projective Spaces Over a Finite Field |
| 14 :15-14 :30 | Benzeghli Brahim | Construction of a new key using circulant matrices and a chaotic logistic maps |
| 14 :30-14 :45 | Salah Adoui | A nonlinear chaotic map to generate keys in cryptography |
| 14 :45-15 :00 | Mittou Brahim | On Arithmetic Function Related to the Least Common Multiple |
| 15 :00-15 :15 | Omar Barkat | On single-valued neutrosophic mappings |
| 15 :15-15 :30 | Bouremel Hassane | Hom-compatible order and ordering Hom-group |

## Session 10: Operational research and optimization

**Chairman: Dr.Brahmi Bouelam+Dr. Addoune Smail**

**Google meet:** https://meet.google.com/pix-psgd-yjc

| Hour | Author | Presentation Title |
|---|---|---|
| 9:30-9 :45 | Boudjelda Souhaib | Direct support method extension for the bounded portfolio optimization problem |
| 9:45-10:00 | Kettab Samia | Linear programming and new search directions in interior point methods |
| 10:00-10:15 | Khelladi Samia | Study of some modified Fletcher-Reeves methods for nonlinear optimization problem |
| 10 :15-10 :30 | Souli Choubeila | A hybrid CG algorithm for nonlinear unconstrained optimization with application in image restoration |
| 10 :30-10 :45 | Sabrina Ben Hanachi | A descent nonlinear conjugate gradient method for large-scale unconstrained optimization |
| 10 :45-11 :00 | Touil Imane | An efficient parametric hyperbolic kernel function for linear semidefinite programming |

# The Second Day May 15, 2024 (Online Sessions)

| | | |
|---|---|---|
| 11 :00-11 :15 | Zoubir Ramdani | Method of Pironneau-Polak for solving the nonlinear constrained multiobjective optimization problem |
| 11 :15-11 :30 | Belgacem Rachid | Subgradient Optimization Method in Integer Linear Programming with an Application to the TSP Problem |
| 11 :30-11 :45 | Wafa Bouguern | Solving a class of bilevel programming problems with a quadratic lower level |
| 11 :45-12 :00 | Noria Benkhemmou | On a new computational method for calculating the Frobenius number |
| 12 :00-13 :30 | **Break** | |
| 13 :30-13 :45 | Hessas Fatima | Generating functions for enumerating words containing patterns of arbitrary length |
| 13 :45-14 :00 | Raouf Ziadi | A stochastic BFGS algorithm for bound-constrained global optimization |
| 14 :00-14 :15 | Bochra Zeghad | convergence of generalized proximal point algorithms |
| 14 :15-14 :30 | Hemici Youcef Elhamam | Study of the numerical behavior of the EDL method towards other conjugate gradient methods of the type Dai-Liao |
| 14 :30-14 :45 | Abdelhak Omar | New findings on double Roman domination number in graphs |
| 14 :45-15 :30 | Derreche Amel | MOchOA/NSGA-II :A Hybrid Algorithm for solving Multi-objective optimization problems |