Setif 1 University - Ferhat ABBAS

Faculty of Sciences

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

PROGRAM (ONLINE)

PROGRAM OF THE CONFERENCE (Online)

Sunday, December 15th, 2024

Session 1: Differential Equations and its Applications		
Chair: A. Saadallah		
Google Meet Link: https://meet.google.com/qge-wfpo-uep		
Hours	**Speakers**	**Presentation Title**
13h 15 – 13h 30	Mohamed Houasni	On the stability of a nonlinear micro temperatures damped porous-elastic system with nonlinear distributed delay
13h 30 – 13h 45	Abdelaziz Hellal	Double phase problems with variable exponents
13h 45 – 14h 00	Hibaterrahmane Benmessaoud	Dynamic evolution of thermo-viscoelastic materials
14h 00 – 14h 15	Mohammed El Amine Riahi	Optimal control for stationary Marguerre-Von Karman equation
14h 15 – 14h 30	Khelifa Daoudi	Mild of solutions for integro-differential impulsive equations with infinite interval
14h 30 – 14h 45	Ishak Kettaf	Existence and uniqueness of solution for a class of superlinear Kirchhoff-type equations
14h 45 – 15h 00	Abeer Hasek	Optical solitons governed by the stochastic RKL equation with multiplicative white noise using the generalized (G'/G)-expansion approach
15h 00 – 15h 15	Amina Chaili	Investigating decay behaviors in system of coupled biharmonic Schrodinger equations with internal fractional damping
15h 15 – 15h 30	Chaima Boulkheloua	Exponential stability of Lord Shulman thermoelastic system with porous damping and delay term

Session 2: Differential Equations and its Applications Chair: A. Bachmar Google Meet Link: **https://meet.google.com/cqn-jncp-rzp**		
Hours	**Speakers**	**Presentation Title**
13h 15 – 13h 30	**Abir Mechaouf**	New results for the Marguerre–Von Karman equations with long memory
13h 30 – 13h 45	**Fatima Ezahra Bentata**	Existence of solution and numerical simulation to a hyperbolic Kirchhoff type problem modeling the free vibration of an elastic string
13h 45 – 14h 00	**Abdelatif Kainane Mezadek**	Some existence results to weakly coupled system of k semi-linear fractional σ−evolution models
14h 00 – 14h 15	**Fatima Zahra Arioui**	Caputo fractional stochastic differential inclusions with impulses
14h 15 – 14h 30	**Hayet Bouzeraieb**	Numerical approach for solving neutral linear differential equations with variable coefficients
14h 30 – 14h 45	**Douha Saadi**	Numerical solution of nonlocal boundary value problems for partial differential equations
14h 45 – 15h 00	**Bouthina Sabah Hammou**	Solvability of the second order fractional diffusion equation with non-local condtions
15h 00 – 15h 15	**Oussama Khaldi**	Well-posedness and exponential stability of Timoshenko system of second sound with time-varying delay and forcing terms
15h 15 – 15h 30	**Brahim Kilani**	On the stability of swelling soils system with strong damping and neutral delay term

Session 3: Dynamic Systems and Mathematical Biology

Chair: A. Leulmi

Google Meet Link: **https://meet.google.com/tmy-vsvr-dgo**

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Nadjiba Abdi	A study of an evolution problem driven by maximal monotone operators
13h 30 – 13h 45	Yacine Elhadj Moussa	Analysis of Caputo fractional order derivative of covid-19 transmission dynamics
13h 45 – 14h 00	Rima Chouader	A class of Kolmogorov differential system with one hyperbolic algebraic limit cycle
14h 00 – 14h 15	Ahlam Belfar	On the limit cycles of discontinuous piecewise linear differential systems formed by centers or hamiltonian without equilibria separated by irreducible conic
14h 15 – 14h 30	Hamidi Nabil	A mathematical model of the competition between plasmid-bearing and plasmid-free organisms in a chemostat with substrate inhibition
14h 30 – 14h 45	El Ouahma Bendib	Limit cycles for a certain class of generalized Kukles differential systems
14h 45 – 15h 00	Ali Kessouri	Combinatorics and log-concavity of over Mahonian numbers
15h 00 – 15h 15	Nora Dekkiche	A study on diffusion models for population dynamics incorporating individual behavior at boundaries

Session 4: Algebra, Cryptography and Information Security

Chair: Z. Kebaili

Google Meet Link: **https://meet.google.com/tjt-bngf-rux**

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Rachid Chergui	Les matrices "QL" et un nouveau type de cryptographie
13h 30 – 13h 45	Adem Aikous	Rota-Baxter operators on Hom-group algebra
13h 45 – 14h 00	Nasser Ghedbane	A new public key cryptosystem using space representations of finite groups
14h 00 – 14h 15	Amina Daoui	New identities for complex bivariate polynomials with some special numbers by symmetric functions
14h 15 – 14h 30	Akila Djoumakh	Some new identities concerning bi-periodic Fibonacci and Lucas sequences
14h 30 – 14h 45	Nadia Amal Messaoudi	A new discrete chao map developped through the combination of sine function and linear function
14h 45 – 15h 00	Safia Seffah	Repdigits expressed as products of two k-Lucas numbers
15h 00 – 15h 15	Yacine Briedj	The $d(1)$-extensibility of the $d(-1)$-triple $\{1, 5, c\}$ and integer solutions on the associated elliptic curves

Session 5: Numerical Analysis and Simulation

Chair: R. Ziadi

Google Meet Link: **https://meet.google.com/ksd-cpxz-ysi**

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Meryem Benssaad	Analytic and numerical study intégro-differential Frefholm-Schander equation
13h 30 – 13h 45	Hanane Chinoune	Application of the modified homotopy perturbation method for solving fractional differential equation
13h 45 – 14h 00	Yasmine Fourar	Resolution of Bezout Equations in the synthesis of non-stationary biorthogonal wavelets using cardinal Chebyshev B-splines
14h 00 – 14h 15	Walid Remili	A rational spectral Galerkin method for solving Fredholm integral equation on the whole line
14h 15 – 14h 30	Abdelouahab Mani	Comparative analysis of numerical methods for solving integral delay equations
14h 30 – 14h 45	Mohamed Dellal	Modeling microbial competition with allelopathy and substrate inhibition in chemostat
14h 45 – 15h 00	Khaoula Meansri	Improving large-scale optimization: a three-term enhancement of the conjugate gradient method
15h 00 – 15h 15	Samar Chebbah	Restricted additive Schwarz method for variational inequalities

Session 6: Numerical Analysis and Simulation

Chair: H. Grar

Google Meet Link: **https://meet.google.com/utu-ohrz-bfo**

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Isma Debbah	Nonparametric estimation of a regression function using the gamma kernel method
13h 30 – 13h 45	Nacira Allaoua	A language shift simulation based on asynchronous cellular automata
13h 45 – 14h 00	Samia Khelladi	Study of a modified Liu-story method based on different line searches
14h 00 – 14h 15	Fatma Kaci	Independence polynomial approach for solving high-order linear Fredholm-Volterra integro-differential equations
14h 15 – 14h 30	Imene Laribi	Stability result of Timoshenko system with thermoelasticity, diffusion effect and memory term
14h 30 – 14h 45	Ameur Lounes	A numerical solution for the single-server queue with phase type distribution service times
14h 45 – 15h 00	Soumia Aici	Lower bounds for the Euclidean operator radius
15h 00 – 15h 15	Linda Menniche	A penalty method for linear programming

Session 7: Fractional Calculus
Chair: A. Djabi
Google Meet Link: https://meet.google.com/izh-ukiw-pmk

Hours	Speakers	Presentation Title
13h 15 – 13h 30	**Zineb Bellabes**	ψ-Caputo equations through weak topology analysis
13h 30 – 13h 45	**Ahlem Sidi Yekhlef**	Stabilization of a hyperbolic system with fractional damping, memory term and time delay
13h 45 – 14h 00	**Moufida Guechi**	Adaptation of homotopy perturbation method for solving nonlinear fractional integro-differential equations
14h 00 – 14h 15	**Nedjoua Dria**	Homotopy perturbation method for the solution of system of nonlinear fractional order partial differential equations
14h 15 – 14h 30	**Souad Guedim**	New results for the integral equation with Hadamard derivatives of variable order
14h 30 – 14h 45	**Said Rafa**	Well-posedness and stabilization of the wave equation by the boundary dissipation with fractional derivative
14h 45 – 15h 00	**Ahmed Bouchenak**	Fractional initial matrix-value problems solved via conformable Laplace transform
15h 00 – 15h 15	**Hammou Benmehidi**	Existence, uniqueness and stability analysis of coupled hybrid pantograph systems

Monday, December 16th, 2024

Session 1: Differential Equations and its Applications

Chair: A. Saadallah

Google Meet Link: https://meet.google.com/poe-uknq-mos

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Somia Tamouza	An optimization problem for a fractional differential equation
13h 30 – 13h 45	Farida Meghatria	Predictive mathematical analysis to mitigating obesity diseases
13h 45 – 14h 00	Saiah Seyyid Ali	Well-posedness results for weakly coupled systems of some semi-linear fractional σ -evolution models
14h 00 – 14h 15	Tayeb Mahrouz	Smoothness of solutions of differential equations of constant strength in roumieu spaces
14h 15 – 14h 30	Mahdi Rakah	New uniqueness results for fractional differential equations and some travelling waves
14h 30 – 14h 45	Marwa Saci	On the stability of linear porous elastic materials with microtemperatures effect
14h 45 – 15h 00	Aziza Bachmar	A problem electro-viscoelastic materials
15h 00 – 15h 15	Bochra Amroune	Analytical solution of two dimensional free surface flow via the hodograph method
15h 15 – 15h 30	Aimen Daoudi	Well-posedness of fourth-order nonlinear Caputo viscoelastic equations with relaxation and interaction terms

Session 2: Differential Equations and its Applications Chair: R. Ziadi Google Meet Link: **https://meet.google.com/ecz-bykm-bhg**		
Hours	**Speakers**	**Presentation Title**
13h 15 – 13h 30	**Fatiha Ghejdemis**	Application of flower pollination algorithm on differential equations
13h 30 – 13h 45	**Ouidad Boulakour**	The residual power series method for solving nonlinear time-fractional partial differential equations
13h 45 – 14h 00	**Asma Bougherara**	Existence and non-existence results for non linear elliptic system involving gradient terms
14h 00 – 14h 15	**Raouane Mouedenne**	Stability of a Schrodinger equation with internal fractional damping
14h 15 – 14h 30	Fatima Hamani	Class of self similar solution for the time-fractional porous media equation
14h 30 – 14h 45	**Rebeiha Allaoua**	Integrability and limit cycles surrounding a non-elementary singular point of a class of polynomial differential system
14h 45 – 15h 00	**Naziha Belkhir**	Well posedness and decay estimate for a porous thermoelastic system free of second spectrum
15h 00 – 15h 15	**Chahira Guenoune**	Existence and uniqueness results for thermo-elasto viscoplastic contact problem
15h 15 – 15h 30	**Sakina Benkaddour**	The study of stochastic differential equation driven by a non Gaussian process

Session 3: Dynamic Systems and Mathematical Biology + Algebra, Cryptography and Information Security
Chair: Z. Kebaili

Google Meet Link: https://meet.google.com/ydk-apzz-kgo

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Ines Tababouchet	ON the limit cycles of a family of discontinuous piecewise differential systems separated by a straight line, and formed by an arbitrary linear system and a quadratic center
13h 30 – 13h 45	Sarra Gaouir	Semi-discritisation of nonconvex integro-differential inclusions
13h 45 – 14h 00	Souad Bounouiga	Analysis of malaria transmission dynamics using fractional models and numerical simulations
14h 00 – 14h 15	Noureddine Touati Brahim	On the study of parabolic degenerate P-biharmonic problem with memory
14h 15 – 14h 30	Khadidja Moussaoui	Certain $D(\ell)$ diophantine triples
14h 30 – 14h 45	Ahmed Benkahla	The tree isomorphism theorem in bihom groups
14h 45 – 15h 00	Nacima Rosa Ait-Amrane	Algebraic results on certain dual generalized complex numbers
15h 00 – 15h 15	Chahinaze Djadi	Congruences concerning quadrinomial coefficients
15h 15 – 15h 30	Imane Merzougui	Isogenies based cryptography

Session 4: Numerical Analysis and Simulation
Chair: S. Khalladi

Google Meet Link: https://meet.google.com/pxy-sikm-yyn

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Sabrina Benzamouche	Kernel estimator of relative error regression function for twice censored and dependent data
13h 30 – 13h 45	OumKeltoum Benhamouda	Scheme approximation equation of the one-dimensional variable-order time-fractional diffusion equation
13h 45 – 14h 00	Ahlem Bennani	An adaptive penalty algorithm for quadratic fractional programming
14h 00 – 14h 15	Narimen Hafsi	Cryptanalysis of Merkle-Hellman cipher based on hybrid firefly-genetic algorithms
14h 15 – 14h 30	Saloua Aliouche	Asymptotic normality of the heteroscedastic regression function for left truncated data
14h 30 – 14h 45	Fares Bekhouche	The Laplace residual power series method for solving fractional initial value problems
14h 45 – 15h 00	Othman Yakhlef	Fluid structure evolution interaction problem

Session 5: Fractional Calculus

Chair: A. Khalouta

Google Meet Link: https://meet.google.com/umr-rxpp-htn

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Amine Loumi	A new method for solving in parallel linear systems by using a fractional linear decomposition
13h 30 – 13h 45	Reda Soufiane Bousserhane	Finite time blow up of solutions for coupled system of wave equations with nonlinear memory terms
13h 45 – 14h 00	Aboubaker El-Saddik Bouziane	Applications of a fixed point results for solving fractional Caputo-differential problem with integral boundary conditions
14h 00 – 14h 15	Amira Abdenebi	Numerical solution of fractional linear boundary value problems and beam deflection application
14h 15 – 14h 30	Mohammed Khirani	On boundedness and compactness of Hadamard operators in morrey spaces
14h 30 – 14h 45	Wissame Selmani	A new approximating solution for an abstract fractional Elliptic Cauchy problem
14h 45 – 15h 00	Djamel-eddine Hettadj	Existence of solutions for fractional differential inclusion with multipoint boundary conditions

Session 6: Data Science and Analytics + Mathematical Methods in Engineering

Chair: A. Leulmi

Google Meet Link: https://meet.google.com/vwc-xhwq-wgk

Hours	Speakers	Presentation Title
13h 15 – 13h 30	Roumaissa Elbay	Plug in method for selection an optimal bandwidth for distribution functions with double truncated data
13h 30 – 13h 45	Abida Zahnit	A new robust estimation procedure for the tail index of Heavy-Tailed-Pareto-type distributions under random truncation
13h 45 – 14h 00	Mohammed Bachir Bederina	Enumerating fair solutions for multi-agent problems
14h 00 – 14h 15	Razika Grine	Novel two parameter model: statistical properties
14h 15 – 14h 30	Dihia Belaiza	Analysis of an unreliable M/M/1 retrial G-queue
14h 30 – 14h 45	Nabil Boumedine	An improved simulated annealing algorithm for maximizing the coverage area in wireless sensor networks
14h 45 – 15h 00	Samia Djemai	Presolving a convex quadratic minimization problem

Session 7: Mathematical Finance and Economics + History of science		
Chair: A. Djabi **Google Meet Link: https://meet.google.com/ftp-rytx-kdx**		
Hours	**Speakers**	**Presentation Title**
13h 15 – 13h 30	**Sylia Abdoun**	Effects of stractegic customers on an M/M/1 queue under two distinct vacations
13h 30 – 13h 45	**Nour El Houda Djemoui**	Estimation bayesienne des parametres et caracteristiques de fiabilite de la distribution exponentielle exponentiee odd lindley : analyse comparative et simulation
13h 45 – 14h 00	**Salima Doubbakh**	$\mathbb{L}^p$-Holder continuity of the solutions of Q-BSDES $\left(2 \le p < \frac{q}{2}\right)$
14h 00 – 14h 15	**Mourad Azioune**	Chaos control and dynamics analysis of a Bertrand Duopoly team game
14h 15 – 14h 30	**Elias Taki Eddine Mohammed Chikouche**	The one-default model in finance: a mathematical framework for risk assessment
14h 30 – 14h 45	Hadia Messaoudene	History of the number π
14h 45 – 15h 00	**Mansour Belarbi**	From Poincare to Perelman the fabulous story of the geometrization conjecture