



Ministère de l'Enseignement Supérieur et de la Recherche Scientifique

Université Echahid Cheikh Larbi Tebessi - Tébessa

Faculté des sciences exactes et des sciences de la nature et de la vie

Département des Mathématiques et Informatique



DEUXIEME CONFERENCE NATIONALE DES MATHEMATIQUES PURES ET APPLIQUEES EN LIGNE

le 04/07/2023 "CMPA 2023"

ATTESTATION

La présidente de la deuxième conférence nationale des Mathématiques pures et appliquées « CMPA 2023 » atteste que: **Bilal Basti, Université Ziane Achour de Djelfa, a présenté une communication intitulée :**

View analysis of nonlinear acoustic wave equations in terms of viscoelasticity

Co-auteur:

1- Rabah Djemiat



Pr. Messaoudene. H



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Laboratoire des Mathématiques, Informatique et Systèmes



DEUXIÈME CONFÉRENCE NATIONALE DES MATHÉMATIQUES PURES ET APPLIQUÉES EN LIGNE Google Meet

le 04/07/2023 "CMPA 2023" Webinaire par internet à travers Google Meet

Ouverture du séminaire 09.00 h <https://meet.google.com/aqw-omrv-peh>

Démarrage des communications 09.15h (5 minutes de débat entre les communications)

Atelier 1: <https://meet.google.com/cub-pvfm-ikt>

Chairwoman: Dr. Degaichia Hakima

Horaire	Nom et prenom	Université	Intitulé de la communication	Spécialité
09. 15 – 09. 25	Tabchouche Nesrine	Mohand Akli Oulhadj Bouira	Primal-Dual Interior Point Methods for HLCP Based on a New Type of Kernel Functions	Optimisation Et control
09.30 – 09.40	Elhamza Billal	Université Echahid Cheikh Larbi Tebessi, Tebessa	Optimal control of the acoustic eq by using the Hilbert Uniqueness Method	Contrôle optimale
09. 45 – 09. 55	Fatima Khanchouche Abderrahmane ziad	Université Ferhat Abbès, Setif	The Best Equilibrium and Anarchy Price	OPTimisation
10. 00 – 10.10	Ghanem Aicha	Université Ferhat Abbas Sétif.	The brachistochrone parametric curves without initial velocity the solution in the singular case $k = 0$	OPTimisation

10. 15 – 10. 25	Zelmat Souheyla Djillali Bouagada	University of Abdelhamid Ibn Badis- Mostaganem	Properties of Discontinuous Galerkin and backward Euler Methods in PDE Constrained Optimal Control Problems	Optimisation
10. 30 – 10. 40	Guefassa Imane Chaib Yacine	Mohamed Cherif Messaadia Souk Ahras	Another hybrid conjugate gradient method for unconstrained optimization with application in mode function.	Optimisation
10. 45 – 10. 55	Rachid Belgacem Ahmed Bokhari1	Université Hassiba Benbouali, Chlef,	An Approximate Method for Solving Fractional Optimal Control Problems Using the Operational Matrix	Optimisation
11. 00 – 11. 10	Choubeila Souli Assma Leulmi	Université Ferhat Abbès setif1	Resolution of quadratic programming based on new minorant function	Optimisation
11. 15 – 11. 25	Imen Khettabi M ^{amed} Amine Boutiche	Université des Sciences et de la Technologie Houari Boumedienne- Alger	Sustainable Multi-objective in RMS: Sensitivity analyses on the adapted NSGA-II	Optimisation
11. 30 – 11. 40	Mehamdia Abd Elhamid	1Mohamed Cherif Messaadia University, Souk Ahras,	Extension of modified Fletcher Reeves conjugate gradient method to non parametric estimation	Optimisation
11. 45– 11. 55	Dounya Kechiche	Université des Sciences et Technologie Houari Boumedienne, Alger	Polynomial decay of solution for Piezoelectric beam with Gurtin -Pipkin thermal law (PG) and under Lorenz Gauge condition	Control theory
12. 00 – 12. 10	Faïrouz Afroun Mouloud Cherfaoui	Université Mouloud Mammeri de Tizi- Ouzou	Statistical analysis of unreliable M/M/1/N queueing model	RECHERCHE OP
12. 15 – 12. 25	Kahina Imechaoudene F. Lounis	Université des Sciences et Technologie Houari Boumedienne, Alger	Performance analysis and optimization of a retrial queue with tow-way communication	Optimisation
12. 30 – 12. 40	Khaoula Meansri Noureddine Benrabia	Université Mohamed Cherif Messaadia Souk Ahras	A new conjugate gradient direction with the Wolfe line search conditions	Optimisation
12. 45 – 12. 55	Bouaziz Khelifa	Université Elchahid Cheick Larbi Tebessi –Tebessa	New A hybrid conjugate gradient Liu-Storey and Descente Conjugué	Optimisation

Atelier 2 <https://meet.google.com/aqw-omrv-peh>

Chairwoman: Pr. Messaoudene Hadia

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Elgues Anissa Menkad safe	Université Mostefa Ben Boulaïd Batna 2	Some results on the class of n -Ep operators on Hilbert space	Doct	Théorie des opérateurs
09.30 – 09.40	Bougoutaia Amar Amar Belacel	Université Amar Telidji Laghouat	Majorizing Lipschitz Operators	MCA	Théorie des opérateurs
09. 45 – 09. 55	Adja Meryem Boussaid Samira	Université Mostefa Ben Boulaïd de Batna 2	A Stochastic Reaction-Diffusion Problem with a Singular Nonlinearity	Doct	Théorie des opérateurs
10. 00 – 10.10	NESBA. Nour El Houda Boussaid Samira	Université Echahid hamma lakhder –Eloued.	Multigrid methods for non coercive operator of nonlinear variational inequalities.	Doct	Théorie des opérateurs
10. 15 – 10. 25	Rabah Debbar	Univ 8 mai 1945 Guelma	The Wolf essential spectrum of bounded operator on Exotic Banach Spaces	MCA	Théorie des opérateurs
10. 30 – 10. 40	Tiaiba Toufik	Université Mohamed Boudiaf Msila.	Some classes of Lipschitz ideals and injective hull	Doct	Analyse fonct
10. 45 – 10. 55	Smail Sara Chaka Belabbaci	Université Amar Teledji Laghouat	Some Coincidence Results of Essential Pseudospectra on a Banach Space.	Doct	functional analysis.
11. 00 – 11. 10	SMATI Abdellatif	Ecole Normale Supérieure de Bousaada	On the normality of unbounded Nadir's operator	MCB	Théorie des opérateurs
11. 15 – 11. 25	Mostefaoui Zahia	Ecole Normale Supérieure de Cheikh Mohamed El -Bachir El- Ibrahimi-Kouba	Some coincidence point theorems in partially ordered Bicomplex valued metric space	MCA	Théorie des opérateurs
11. 30 – 11. 40	Mesbah Nadia	Université Echahid Cheikh Larbi Tebessi Tebessa	D-quasi-hyponormal operators class	DOCT	Théorie des opérateurs

11. 45– 11. 55	Aissa Nasli Bakir	Université Hassiba Benbouali Chlef,	A note on certain class of operators acting on a Hilbert space	MCA	Théorie des opérateurs
12. 00 – 12. 10	Sellat ouafa Bouzenada Smail	Université Echahid Cheikh Larbi Tebessi, Tebessa,	Les opérateurs sous-auto-adjoints et leur image numérique	DOCT	Théorie des opérateurs
12. 15 – 12. 25	Safa Menkad	Université Batna 2,	Polar decomposition and characterization of some classes of operators	MCA	Théorie des opérateurs
Pause Chairwoman: Dr. Mesbah Nadia					
13. 30 – 13. 40	Hammou Asma Amar Belacel	Ecole Normale Supérieure Kasdi Merbah Laghouat.	On Characterizations of the Space of $\tau_{(p)}$ Summing Multilinear Mappings	Doct	Théorie des opérateurs
13. 45 – 13. 55	Sakina Bezamia	Université Hassiba Ben Bouali, chlef,	Unitarily invariant norm inequalities for matrices	MCB	Théorie des opérateurs
14. 00 – 14. 10.	Zouheyr Zeghad	Université Mohamed Boudiaf Msila	The continuity of some commutators on variable Herz-type Hardy spaces	Doct	Théorie des opérateurs
14. 15 – 14. 25	Sohir Zid Menkad Safa	Université Hadj Lakhdar, Batna 1	Some properties of the operator transform $S_r(T)$	Doct	Théorie des opérateurs
14.30 – 14.40	Rachid Yahi	Université Mohamed Boudiaf Msila	Strongly (p, σ) absolutely Lipschitz operators	MCB	Théorie des opérateurs
14. 45 – 14. 55	Oussama Djeribia	University of Laghouat	Further results on positive strongly p -summing multilinear operators	doct	Théorie des opérateurs
15. 00 – 15.10	Yassine Bedrani	University of 20 August 1955, Skikda,	Matrix means for accretive matrices	MCB	Théorie des opérateurs

Atelier 3 <https://meet.google.com/nzy-wzug-osa>

Chairman : Dr.Boukhalifa El Hafsi

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Benaklef Nesrine Belaide Karima	Abderrahmane Mira Béjaïa	LAN property related efficient notions for FAR(1) model	Doct	Probabilité et statistique
09.30 – 09.40	BENCHIHA Abbassia	Université Djillali liabès, Sidi Bel Abbès	Approximation of functional regression with missing data at random: Dependent case.	Doct	Probabilité et statistique
09. 45 – 09. 55	Kebir Hadjer	Université Djillali Liabés Sidi Bel Abbas	Nonparametric conditional hazard estimation for censored ergodic data based on a recursive kernel	Doct	Probabilité et statistique
10. 00 – 10.10	Ben Brahim Hafida Gherbal Boulakhras	Université Mohamed khider Biskra	On the Solution of McKean-Vlasov Stochastic Differential Equations driven by Local Martingales	DOCT	Probabilité et statistique
10. 15 – 10. 25	Mohammed Meziane Ali Moussaoui	Université Abou Bekr Belkaid Tlemcen	New properties of the epidemic peak	Doct	Probabilité et statistique
10. 30 – 10. 40	DJILLALI Seba KARIMA Belaide	Université Abderrahmane Mira Béjaïa	Infection Fatality Rate Forecasting Using Statistical and machine learning models.	Doct	Probabilité et statistique
10. 45 – 10. 55	Bellatrach Nadjet Bouabsa Wahiba	Université Kasdi Merbah Ouargla	Uniform in Bandwidth of the hazard function involving functional explanatory variable: case of spacial data with k-NN method	doct	Probabilité et statistique
11. 00 – 11. 10	Guenani Somia Bouabsa Wahiba Attouch M ^{ed} Kadi	Université Djillali Liabés Sidi Bel Abbas	Robust equivariant nonparametric regression estimators for ergodic data using a k nearest neighbour approach	Doct	Probabilité et statistique
11. 15 – 11. 25	Kheira Berkane	Université Hassiba Benbouali Chlef	Complete convergence for widely orthant dependent random variables and its applications in autoregressive AR(1) models	MCB	Probabilité et statistique

11. 30 – 11. 40	Khawla Boudjerda Ali Lalouci	Université Mohamed Seddik Ben Yahia, Jijel,	Statistical analysis of the progressively censored data from the Inverse Weibull distribution	MCB	Probabilité et statistique
11. 45– 11. 55	Chaib Yacine	Université Mohamed-Cherif Messaadia - Souk Ahras	Robust estimator for LTRC model and dependent data.	MCA	Probabilité et statistique
12. 00 – 12. 10	Ahlam Guiatni	Université Mohamed Seddik Ben Yahia Jijel.	Some Examples of Fractional Designs From Cyclic Codes	MCB	Probabilité et statistique
12. 15 – 12. 25	Grine Razika	Université Chadli Bendjedid El Taref	Properties of Stochastic Processes	MCB	Probabilité et statistique
Pause <i>Chairwoman: Dr. Mezhoud Rachida</i>					
13. 30 – 13. 40	Aliouche Saloua	Université des Sciences et Technologie Houari Boumedienne, Alger	Nonparametric estimation of the local-scale regression model fol left truncated and dependent data	Doct	Probabilité et statistique
13. 45 – 13. 55	Oumertem Lemya Chaib Yacine	University of Mohamed Cherif Messaadia, Souk Ahras,	A new conjugate gradient method with application in mode function	doct	Probabilité et statistique
14. 00 – 14. 10.	Kadiri Nadia	Ecole Nationale Supérieure des Télécommunications et des Technologies de l'Information et de la Communication (ENSTTIC).	Asymptotic normality of conditional density and conditional mode in the functional single index model	MCB	Probabilité et statistique
14. 15 – 14. 25	Roufaida Souakri Mohamed Bentarzi	Université des Sciences et Technologie Houari Boumedienne, Alger	GPINAR model and forecasting the daytime road accidents series	DOCT	Probabilité et statistique
14.30 – 14.40	Ouicher Fahima	Université des Sciences et Technologie Houari Boumedienne, Alger	Numerical study of the marginal quasi-stationary distribution for the stochastic epidemic model SIR	MCB	Probabilité et statistique
14. 45 – 14. 55	Lazri Nouara	Ecole supérieure de gestion Annaba	The composite Gamma $(2;\lambda)$ -Pareto Distribution	MCB	Probabilité et statistique

15.00 – 15.10	Boukhalfa El-hafsi Nouioua Tarek	Université Elchahid Cheick Larbi Tebessi –Tebessa	Synchronization of discrete dynamical systems via Lyapunov direct method.	mcb	Probabilité et statistique
15.15 – 15.25	Ismahen Bernou	Université Abou Bekr Belkaid	Limit theorems for dependent random variables with infinite means	doct	Probabilité et statistique
15.30 – 15.40	Souheyla Chemikh	Ecole supérieure en génie électrique et énergétique d'Oran	Strong consistency of the nonparametric local linear Trimmed Estimator under an α -mixing condition	MAB	Probabilité et statistique
15.45 – 15.55	Bouzara Reguia lamia Guenda Kenza	University of science and technology Houari Boumediene ,	Codes over Rings and Lattices	Post doc	Graph theorie
16.00 – 16.10	Aioula Soumia Noureddine Ikhlef Eschouf	Université Yahia Fares Médéa	Deletion Changes of some Fixed edges of Generalized Caterpillar Forest Graph.	Graphe theory	Graph theorie

Atelier 4 <https://meet.google.com/zja-yqvn-wqg>

Chairman : Dr. Hannachi Fareh

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09.15 – 09.25	Selmani Wissame Djellit ilhem	20 aout 1955, Skikda	Chaotic dynamics in two dimensional non invertible maps	MCA	Systèmes dynamiques
09.30 – 09.40	Zaamoune Faiza Tidjani Menacer	Université Mohamed khider Biskra	A novel of Hideaway Patterns of Spirals of Chaotic Attractor Generated by Transformation	Doct	Systèmes dynamiques
09.45 – 09.55	Moussa Amine	Université Djilali Liabèche Sidi Bel Abbès	Modèle du chémostat Simple	Doct	Systèmes dynamiques
10.00 – 10.10	Derouiche Farida	Université Larbi Ben M'hidi d'Oum El Bouaghi	A chaos optimization algorithm and Its Application to Nonlinear Problems	Mcb	Systèmes dynamiques
10.15 –	Amira Rami Hannachi Fareh	Université Echahid Cheikh Larbi Tebessi, Tebessa,	On the analysis and synchronization of a new 3-D fractional chaotic system	Doct	Systèmes dynamiques

10. 25			with Hannachi system via full state hybrid projective synchronization		
10. 30 – 10. 40	Nassima Ait Sadi Rezki Chemlal	Université Abderahmanne Mira, Béjaia.	Spectrale properties of D-dimensional cellular automata	DOCT	Systèmes dynamiques
10. 45 – 10. 55	Lakehal Nadjat Fareh Hannachi	Université Elchahid Cheick Larbi Tebessi –Tebessa.	Synchronization of a chaotic system with hidden attractors	Doct	Systèmes dynamiques
11. 00 – 11. 10	Bouzeraa Seyf El Islam Bououden Rabah	Centre Universitaire Abdelhafid Boussouf, Mila,	The dynamics of a new one-dimensional fractional chaotic map	Doct	Systèmes dynamiques
11. 15 – 11. 25	Gasri Ahlem Hasna Yousfi Adel Ouannas Ghenaiet Bahia	Université Elchahid Cheick Larbi Tebessi –Tebessa	Study of the stability Chaotic fractional discrete neural networks based on the Caputo h-difference operator	MCA	Systèmes dynamiques
11. 30 – 11. 40	Hadjab Fatima	University of Laarbi Ben M'hidi Oum El Bouagui,	Dynamics of some two dimensional fractional difference systems	mab	Systèmes dynamiques
11. 45– 11. 55	Meriem Barkat Rebiha Benterki	University Mohamed El Bachir El Ibrahimi of Bordj Bou Arréridj,	Piecewise nonlinear differential systems with no regular line of separation	doc	Systèmes dynamiques
12. 00 – 12. 10	Fatima Amiour M. Sene T. Haddad	University of Mohammed Seddik Ben yahia Jijel,	Well Posdness Of Differential Inclusion Involving Second-order State Dependent Maximal Monotone Operator	Post doc	Systèmes dynamiques
12. 15 – 12. 25	Hasna Yousfi Gasri Ahlem Adel Ouannas Asma Ladjeroud	Université Elchahid Cheick Larbi Tebessi –Tebessa	About the chaotic behavior in a fractional order dynamical system and its application	Doct	Systèmes dynamiques
Pause Chairwoman: Dr.Gasri Ahlem					
13. 30 – 13. 40	REMADNA Amira	Université Badji Mokhtar Annaba,	Characterization and the coexistence of non oscillating modes of second-order linear retarded system with single delay	Doct	Systèmes dynamiques

13. 45 – 13. 55	Bellout Aida Bououden Rabah	Université Centre Abd Elhafid Boussouf Mila	On the dynamic of a new piecewise linear map	Doct	Systèmes dynamiques
14. 00 – 14. 10.	Billel Semmar	Université Badji Mokhtar- Annaba,	Stability and Bifurcation in Incommensurate Conformable-Type Three-Dimensional Lotka-Volterra Model with Omnivore	mab	Systèmes dynamiques
14. 15 – 14. 25	Mesdoui Fatiha	University of Mohammed Seddik Ben yahia Jijel	Synchronization control for a general reaction-diffusion system	MCB	Systèmes dynamiques
14.30 – 14.40	Bendehiba Senoussi , Abdelaziz Bennour and Khaled Beddani	Ecole Normale Supérieure de Mostaganem	Certain classifications on surfaces in isotropic 3- space I^3	MCA	GEOMETRIE

Atelier 5 <https://meet.google.com/bem-kmmz-ezh>

Chairman : Dr.Bahi Mohammed Cherif

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Achour Imane Bellagoun Abdelghani	Université Mohamed khider Biskra	The Continuous Pure Fragmentation Equations in continuous flow system With Diffusion.	Docto	Analyse numérique
09.30 – 09.40	Sedka Ilyes Aissaoui Mohamed Zine	Univ 8 mai 1945 Guelma	Progress in numerical linearization methods for nonlinear integral equations within the framework of Banach spaces domaine	Doct	Analyse numérique
09. 45 – 09. 55	Khélifa Imene Lahcene Chorfi Ibtissem Djerrar	Université Badji-Mokhtar, Annaba	Inverse Problem in Scattering by an Imperfect Conductor in 2D	MCB	Mathématique s Appliquées
10. 00 – 10.10	Chinoun Hanane Tellab Brahim	Université Kasdi Merbah, Ouargla,	...Approximate solutions for the modified version of the Adomian decomposition method.	Doct	Analyse numérique
10. 15 – 10. 25	Lahlah Taklit Hana	Ferhat Abbas Sétif 1	Asymptotic analysis of non isothermal elasticity problem with Coulomb's friction	Doct	Analyse numérique
10. 30 –	Ahlem Nemer	Université Mohamed Khider,	A study of integral equations with logarithmic kernels	mcb	Analyse

10. 40		Biskra,			numérique
10. 45 – 10. 55	Bilel Selikh	Université Mohamed Boudiaf Msila	A brief discussion on elliptic curve over a ring of characteristic different from 2 and 3	Doct	Analyse numérique
11. 00 – 11. 10	Khelladi Samia	Université Ferhat Abbas Setif 1,	Numerical study of the MLSCD and MMDL methods using different line search rules	MCA	Analyse numérique
11. 15 – 11. 25	Ahmed Ayoub Boukelia Mohamed KARA	Université Ferhat Abbas, Setif,	Study of Nonlinear Fluid-Structure Problem	Doct	Analyse numérique
11. 30 – 11. 40	Mansouri salima	Université Echahid Hamma Lakhdar El oued	A new fractional integral associated with the Caputo-Fabrizio fractional derivative	Doct	Analyse numérique
11. 45– 11. 55	Atmani Somia Kheireddine Biroud	Université Aboubekr Belkaid- Tlemcen	On some Non local elliptical systems with gradient source terms.	Doct	Analyse numérique
12. 00 – 12. 10	Hanane Lakikza Frekh Taallah	Université Badji Mokhtar- Annaba,	Numerical analysis of multiphase flow problem in a porous medium	DOCT	Analyse numérique
12. 15 – 12. 25	Asma Gheliem Zohra Guessoum	Université des Sciences et Technologie Houari Boumedienne, Alger	Central limit theorem for a nonparametric M-estimator under association and left truncation	doct	Analyse numérique

Pause

Chairman: Dr. Bouaziz Khalifa

13. 30 – 13. 40	Badaoui Soufiane	Université Abou Bekr Belkaid Tlemcen	La stabilité globale dans un chemostat avec interaction intraspécifique entre deux espèces de micro-organismes	Doct	Math app
13. 45 – 13. 55	Ilhem Mous Abdelhamid Laouar	Université Badji Mokhtar- Annaba	A survey on Cauchy problem for 2D coupled Burgers equation	DOCT	Analyse numérique
14. 00 – 14. 10.	Guenaoua Maroua Kalish Keltoum	Universite Kasdi Merbah Ouargla	Approximation d'un problème elliptique par des éléments finis inversés dans un domaine extérieure de R^3	Doct	Analyse numérique

14. 15 – 14. 25	Cheima Khennaoui Azzeddine Bellour	Centre Universitaire AbdelHafid Boussouf Mila,	Resolving Two-Dimensional Partial Volterra Integro-Dierential Equations Using the Taylor Collocation Method	doct	Analyse numérique
14.30 – 14.40	Tefaha Lejdel Ali Safia Meftah Lamine Nisse	Université Hamma Lakhder El- Oued	Numerical simulations for the fractional order generalized Van Der Pol systems	DOCT	Analyse numérique
14. 45 – 14. 55	Rania Benmenni	Ferhat Abbas Setif 1 University	Linear Quadratic Stackelberg Differential Games	doct	Analyse numérique
15. 00 – 15.10	Housseyn Moknine , A. Berkane	Université de Constantine	The behavior of spatial radius of solution for the system of mKdV equations with some damping	doct	Analyse numérique
15. 15 – 15. 25	Hemici Youcef Elhamam	University Ferhat Abbas Setif 1,	Solve $P^*(\kappa)$ using an interior-point method based on a new equivalent algebraic transformation	doct	Analyse numérique

Atelier 6 <https://meet.google.com/rhh-ewjv-epb>

Chairman : Dr. Nabti Abderrazak

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Latifa Adjoudj	Université des Sciences et Technologie Houari Boumediene Alger	Nonparametric relative regression for Truncated-censored data	MCB	Analyse numérique
09.30 – 09.40	Dalah Mohamed	Université des Frères Mentouri Constantine 1	A compact FMD applied for solving fractional advection equation:Codes Matlab	Pr	Analyse numérique
09. 45 – 09. 55	Bougueroua Soulef Noureddine DAILI	University Farhat ABBAS Setif 1.	Modern methods in image processing and their relationship with ROF model.	doc	Analyse numérique
10. 00 – 10.10	Elkhad Lotfi	Université Abou Bekr Belkaid Tlemcen	Etude de quelque modèles de maladie épidémiologique	Doct	Mathématiques Appliquées
10. 15 – 10. 25	Allaoui Nour Elhouda Mokhtari Fares	Université des Sciences et de la Technologie Houari Boumediene	Anisotropic elliptic system with variable exponents and degenerate coercivity and irregular data	Doc	Analyse numérique

10. 30 – 10. 40	Azzi Cheyma	Université Aboubekr Belkaid- Tlemce	Analyse mathématique d'un modèle de pêche avec stock variable	Doct	Analyse numérique
10. 45 – 10. 55	Khelladi Samia	Université Ferhat Abbas Setif 1,	Numerical study of the MLSCD and MMDL methods using different line search rules	MCA	Analyse numérique
11. 00 – 11. 10	Benatmane Sara Behloul Djilali	Université des Sciences et de la Technologie Houari Boumediene- ALGER	Elliptic curve based noval modern cryptographic algorithm	Doct	Analyse numérique
11. 15 – 11. 25	Naziha Belmahi	Université sciences et Technologie M-B - Oran	Qualitative analysis of fractional-order Goldbeter-Lefever model and some numerical simulations	MCB	Analyse numérique
11. 30 – 11. 40	Soumia Tayebi	Université Ahmed Zabana, Relizane,	Adaptation of the Novel Cubic B-Spline Algorithm for Dealing with Conformable Systems.	MCB	Analyse numérique
11. 45– 11. 55	Amine Loumi	Université Hassiba Benbouali Chlef	Stable algorithm for the wave equation using finite difference method	MCB	Analyse numérique
12. 00 – 12. 10	Nassima Bayarassou F.Hamrani1	Université des Sciences et Technologie Houari Boumedienne, Alger	Examining the behavior of a kernel estimator for relative regression function through simulations for left truncated and right censored data	doct	Analyse numérique
12. 15 – 12. 25	Khmis Marwa Ahlème Bouakkaz	Université 20 Août 1955 Skikda,	...New results for an iterative hematopoiesis model with harvesting	Doct	Analyse numérique
Pause Chairman : Dr. Hafdallah Abdelhak					
13. 30 – 13. 40	Sarra Bechiri	université Badji Mokhtar, Annaba	Estimation de l'incertitude du montant de provisions pour sinistre à payer .Modèle stochastique..	DOCT	Analyse numérique
13. 45 – 13. 55	Kheira Attar	Université Abou Bekr Belkaid Tlemcen	Global stability and Hopf bifurcations of a SEIR epidemiological model with logistic growth and delay	Doct	Analyse numérique

14. 00 – 14. 10.	Boucherikha Ahlem Kacimi Abderrahim	Université des Sciences et Technologie Houari Boumedienne, Alger	Model for tropical climate	Doct	Analyse numérique
14. 15 – 14. 25	Nadjla Abidat Abderrazak Nabti	Université Elchahid Cheick Larbi Tebessi –Tebessa	Hopf-bifurcation of a delayed HIV-TB Co-infection model.	DOCT	Analyse numérique
14.30 – 14.40	Bochra Zeghad	Université Ferhat Abbas Setif 1-	Modified golden ratio algorithms	DOCT	Analyse numérique
14. 45 – 14. 55	Meziani Tinhinane Mohdeb Nadia	Université Abderrahmane Mira Béjaïa	Dynamics of ratio-dependent predator -prey model with non-smooth prey harvesting Dynamics of ratio-dependent predator-prey model with non-smooth prey harvesting	Doct	Analyse numérique
15. 00 – 15. 10	Fatima Zohra Hathout	Université Abou Bekr Belkaid Tlemcen	Effect of immigration on threshold dynamics in an age-structured epidemiological model	DOCT	Analyse numérique

Atelier 7 <https://meet.google.com/fmi-huud-vpo>

Chairman : Pr. Zarai Abderrahman

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Mansouri Ikram Mohammed Moumen ekkouche	Université Hama Lakhder El Oued	Solving System of Fractional differential Equation Involving the Caputo-Fabrizio Derivative	Doct	Fractionnaire
09.30 – 09.40	Gorine Hafsa Abass Said	Université Dr. Moulay Tahar Saida	Caputo-Fabrizio fractional differential equations in fréchet spaces	Post Doct	Fractionnaire
09. 45 – 09. 55	Benomar Khalida Benaissa Abbes	Université Djilaly Liabes Sidi Bel Abbes	The Euler Bernoulli beam equation with dynamic boundary control of fractional derivative type	Post Doct	Fractionnaire
10. 00 – 10.10	Elhabib Hadjadj Safia Meftah Abdallah Bensayah	Université Echahid Hama Lakhder El-Oued	Existence results for differential inclusions problems of order non entier	Doct	EDO

10. 15 – 10. 25	Lachachi Nardjes	Université Djilali Liabes Sidi Bel Abbas	Uniqueness results of mild solutions for partial evolution equations with finite state-dependent delay involving Caputo's fractional order derivative.	Doct	Fractionnaire
10. 30 – 10. 40	Elhamza Billal	Université Echahid Cheikh Larbi Tebessi, Tebessa	Optimal control of the acoustic equations by using the Hilbert Uniqueness Method	Doct	EDO
10. 45 – 10. 55	Hallouz Abdelhamid	Université Ibn Khaldoun Tiaret	Wave Equation With a Boundery Fractional Damping	Doct	EDO
11. 00 – 11. 10	Bourobta Ahmed Oussaeif Taki-Eddine	Université Larbi Ben Mhidi oeb	Examining possibility of finding solutions for singular and degenerate fractional nonlinear parabolic Dirichlet problems	Doct	Fractionnaire
11. 15 – 11. 25	Bekri Zouaou	Centre Universitaire Nour El Bachir. El Bayadh	Existence and uniqueness analysis for the generalized Caputo-type fractional-order boundary value problem	MCA	Fractionnaire
11. 30 – 11. 40	Helal Mohamed	Université Mustapha Stambouli de Mascara.	Global uniqueness results for neutral fractional hyperbolic differential equations with finite state-dependent delay.	MCA	Fractionnaire
11. 45– 11. 55	Bouacida Ichrak Kerboua Mourad	Université 8 Mai 1945 Guelma	Complete Controllability Of Nonlinear $(k; \psi)$ -Hilfer Fractional Differential Equations In Hilbert Space	Doct	Fractionnaire
12. 00 – 12. 10	Elhabib Hadjadj Safia Meftah Abdallah Bensayah	Université Hama Lakhder El Oued	Existence results for differential inclusions problems of order non entier	Doct	Fractionnaire
12. 15 – 12. 25	Khellaf Ould Melha	Université Hassiba Benbouali Chlef	Abstract Fractional Differential equation with Caputo-Fabrizio Derivative.	MCA	Fractionnaire
Pause Chairwoman: Dr. Mesloub Fatiha					
13. 30 – 13. 40	Batahri Asma Amira Attar Ahmed	Université Abou Bekr Belkaid Tlemcen	Study of fractional elliptic problem.	Doct	Fractionnaire
13. 45 – 13. 55	Choukri Derbazi	Université Frères Mentouri Constantine	Some New Uniqueness Results For Coupled Systems of ψ -Caputo Fractional Differential Equations on Spaces Endowed with Vector-Valued Norms.	mcb	Fractionnaire

14.00 – 14.10.	Gouasmia Abdelhamid Oumima Ounnas Amel Bekhouche	Université Larbi Ben MHidi OEB	Qualitative properties of solutions for some fractional (p, q) - Laplace problems	MCB	Fractionnaire
14.15 – 14.25	Djiab Somia	Université Mohamed Boudiaf Msila	Stability of an equivalent integral equation for a new fractional p - Laplacian problem with boundary conditions	MCB	Fractionnaire
14.30 – 14.40	Maroua Nouar	Université Abbas Leghrour de Khenchela	On the inverse problem of identifying two unknown parameters in time-fractional diffusion equation	DOCT	Fractionnaire
14.45 – 14.55	Adel Lachouri Nesrine Gouri	Université des Sciences et de la Technologie Houari Boumediene- ALGER	Existence and Ulam stability analysis for a class of fractional differential equations with mixed nonlocal conditions	MCB	Fractionnaire
15.00 – 15.10	Hadjer Merad	Université Elchahid Cheick Larbi Tebessi –Tebessa	The Dynamics of Bosons with Spin 0 Within Fractional-dimensional Space	Post doc	Fractionnaire
15.15 – 15.25	Baghdad Said	Université Ibn khaldoun of Tiaret,	Stieltjes fractional differential equations with nonlocal integral boundary conditions	MCA	Fractionnaire
15.30 – 15.40	Rabah Djemiat Bilal Basti	Université Mohamed Boudiaf Msila	An initial boundary value problem for parabolic equations involving fractional nonlocal-in-space/time derivatives	Doct	Fractionnaire

Atelier 8 <https://meet.google.com/cef-nwzx-iam>

Chairman : Dr. Boumaaza Nouri

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09.15 – 09.25	Aounallah Radhouane	Université Djilaly Liabes Sidi Bel Abbes	Blow up and global existence in a nonlinear viscoelastic wave equation	MCB	EDP
09.30 – 09.40	Mazouz Said Saada Hamouda	Université Abdelhamid Ibn Badis Mostaganem	"Properties of solutions of certain complex differential equations in a punctured disc".	Doct	EDP

09. 45 – 09. 55	Bellamouchi Chahinez	Université Hama Lakhder El Oued	Positive solution for nonlocal elliptic problem	Doct	EDP
10. 00 – 10. 10	Abdelmalek Karima Nabila Barrouk	Université Echahid Chikh Larbi TEBESSI -TEBESSA	Study the global existence in time of solutions for some class of reaction-diffusion system.	Doct	EDP
10. 15 – 10. 25	Mezghiche Lynda Rabah Khemis	20 Aout 1955 Skikda	Positive Periodic Solutions of a First Order Neutral Delay Differential Equation	Doct	EDP
10. 30 – 10. 40	Barrouk Nabila Karima Abdelmalek Mounir Redjough	Mohamed Cherif Messaadia Souk Ahras	Existence and asymptotic behavior of positive continuous solutions for some nonlinear diagonal parabolic systems	MCB	EDP
10. 45 – 10. 55	Draifia Ala Eddine	Université Echahid Chikh Larbi TEBESSI -TEBESSA	Solvability of a Mixed Nonlocal Problem for a Nonlinear Singular Viscoelastic Equation	MCB	EDP
11. 00 – 11. 10	Boughaba Houda Zeraihi Tahar	Université Mohamed Seddik Ben Yahia, Jijel	Existence and properties of meromorphic solutions of q-difference equation of Painlevé type	DOCT	EDP
11. 15 – 11. 25	Imane Abibssi Selma Baghli- Bendimerad	Université Djillali Liabes Sidi Bel-Abbes	Existence of mild solutions for second order partial functional perturbed pseudo integrodifferential with finite state dependent delay	Doct	EDP
11. 30 – 11. 40	Bounaama Abir Messaoud Maouni	Université 20 Août 1955 Skikda,	Existence and Blow up results for a quasi-linear equations involving the weighted p-laplacion operator	Doc	EDP
11. 45– 11. 55	Mebarki Maroua	Université de Tamanrasset	Global existence of solutions of parabolic evolution equations	MCB	EDP
12. 00 – 12. 10	Benmelouka Mohammed Amine Fatima Zohra Mezeghrani	Université Ahmed Ben Bella d'Oran 1	Maximal regularity of the strict solution of abstract differential equations in Holder spaces	Doct	EDP
12. 15 – 12. 25	Hichem Khelifi	Univérsité d'Alger	Bounded Solution for Nonlinear Degenerate Parabolic Equations with Variable Exponents	MCA	EDP

Pause

Chairman: Dr. Berrah Khaled

13. 30 – 13. 40	Mohammed Asseddik Slimani	Centre universitaire de Naama	The existence of solutions for systems of random differential equations with nonlocal conditions	MCB	EDP
13. 45 – 13. 55	Nourredine Houari Faouzi Haddouchi	Université Ahmed Ben Bella- Oran-	Twin monotone and convex positive solutions for fth order integro-multipoint boundary value problems	Doct	EDP
14. 00 – 14. 10.	Bouternikh Salih Zerzaihi Tahar	Université Mohamed Seddik Ben Yahia, Jijel,	Existence of growth order of meromorphic solutions in q-difference equations	MCB	EDP
14. 15 – 14. 25	Wissem Chougar Abdelhak Hafdallah	Université Elchahid Cheick Larbi Tebessi –Tebessa	Averaged optimal control for distributed systems depending on a parameter	DOCT	EDP
14.30 – 14.40	Dounya Kechiche	Université des Sciences et Technologie Houari Boumedienne, Alger	Polynomial decay of solution for Piezoelectric beam with Gurtin – Pipkin thermal law (PG) and under Lorenz Gauge condition	doct	EDP
14. 45 – 14. 55	Salim Zidi Djamel Mansouri Salem Abdelmalek	Université Elchahid Cheick Larbi Tebessi –Tebessa	Existence of positive non-constant steady-state solutions for the generalized Lengyel-Epstein system	doct	EDP
15. 00 – 15.10	Dahmani Abdelkader Benharrat Belaïdi	Université Abdelhamid Ibn Badis Mostaganem	Some properties on logarithmic order of meromorphic Solutions of homogeneous and non-homogeneous linear difference equations with meromorphic coefficients	Doc	EDP
15. 15 – 15. 25	Messaouda Ben Attia	Université Kasdi Merbah Ouargla,	The evolution free boundary problem in a bounded domain of R^2 : Some properties of solutions.	doct	EDP

Atelier 9
<https://meet.google.com/gem-zier-erc>
Chairman : Pr. Akrouit Kamel

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Tebba Zakia	ecole normale superieure Kouba - Algeria-	A New Class of Quasilinear Wave Equation with Nonlinearity Variable Exponents: Blow-Up Result	MCB	EDP
09.30 – 09.40	Hafayed Dahbia Chala Adel	Université Mohamed khider Biskra	Risk-Sensitive problem for Backward Stochastic Differential Equations	Doct	EDP
09. 45 – 09. 55	Elhamza Billal	Université Echahid Cheikh Larbi Tebessi, Tebessa	Optimal control of the acoustic eq by using the Hilbert Uniqueness Method	Doct	EDO
10. 00 – 10.10	Bilal Basti Rabah Djemiat	Université Ziane Achour de Djelfa	View analysis of nonlinear acoustic wave equations in terms of viscoelasticity	Doct	EDP
10. 15 – 10. 25	Djemai Samiha Salim Mesbahi	Université Ferhat Abbas, Sétif 1	Degenerate Reaction-Diffusion Model Applied in Biomathematics	Doct	EDP
10. 30 – 10. 40	Loucif Sami Rafik Guefaifia	Université Echahid Cheikh Larbi Tebessi Tebessa	Long time behavior of some thermoelastic system with delay Domaine de recherche	Doct	EDP
10. 45 – 10. 55	Messaoudi Hassan	Université Mohamed-Cherif Messaadia - Souk Ahras	Asymptotic behavior for the nonlinear Moore–Gibson–Thompson problem.	Doc	EDP
11. 00 – 11. 10	Moumen Latifa Salah-Eddine Rebiai	Université Mostefa Ben Boulaïd de Batna 2	Exponential energy decay of the transmission wave/Schrödinger systems	Doct	EDP
11. 15 – 11. 25	Bentata Fatima Ezahra Mokhtari Abdelhak Boumaaza Nouri	Université Echahid Chikh Larbi TEBESSI -TEBESSA	Discrete Morse Flow for hyperbolic problem modeling the free vibration of elastic string	DOCT	EDP
11. 30 – 11. 40	Yazid Fares Fatima Siham Djeradi	Université de Amar Telidji.Laghout	A Petrovsky equation with variable-exponent nonlinearities.	MCB	EDP

11. 45– 11. 55	Chahira Guenoune Aziza Bachmar	Université Ferhat Abbes setif1	Electro-elastic- viscoplastic materials	DOCT	EDP
12. 00 – 12. 10	Farah Dounia Letoufa Yacine	Université Hama Lakhder El Oued	A Study of the Anisotropic Static Elasticity System in Thin Domain	Doct	EDP
12. 15 – 12. 25	Ali Slimani	University of 20 August 1955, Skikda,	Homotopy perturbation method for one-dimensional keller-segel equations	POST DOC	EDP
Pause Chairwoman: Dr. Zediri Sonia					
13. 30 – 13. 40	Ahmed Bokhari Rachid Belgacem	Université Hassiba Benbouali Chlef	Some properties and applications of the new integral transform – Chinchole transform	MCA	EDP
13. 45 – 13. 55	Abdelkader Hakim Benhana	Ecole des Hautes Études Commerciales , Kouba,	The stationary quantum Zakharov system	MCB	EDP
14. 00 – 14. 10.	Ibrahim Merabet Omar Boussaid	Université Hassiba Benbouali Chlef	Symmetric Polyconvex Quadratic Forms in Higher Dimensions	DOCT	EDP
14. 15 – 14. 25	Boussaid Omar	Université Hassiba Benbouali Chlef	New criteria for symmetric quasi-convexity of quadratic forms in two dimension	MCA	EDP
14.30 – 14.40	Derouiche Djamila Ramoul Hichem	Université Abbas Leghrour de Khenchela	A functional equation arising in dynamic programming via a generalized f-contractions of Hardy-Rogers	MCB	EDP
14. 45 – 14. 55	Nouha Boudjerida Doria Affane Mustapha Fateh Yarou	Université Mohamed Sadik Ben Yahia, jijel,	On a First-order Sweeping Process with Prox-regular Sets	DOCT	EDP
15. 00 – 15.10	Feddaoui Amina Makhlouf Amar	Université Badji Mokhtar- Annaba	Limit cycles for a third-order differential Equations	DOCT	EDP
15. 15 – 15. 25	Radhowane Chaib Fayçel Merghadi	Université Elchahid Cheick Larbi Tebessi –Tebessa	Fixed point theorems for contraction mappings of Hardy-Rogers type in b-metric spaces	Doct	point fixe

Atelier 10 <https://meet.google.com/jbs-hkpa-okj>

Chairwoman : Dr. Bazine Safia

Horaire	Nom et prenom	Université	Intitulé de la communication	Grade	Spécialité
09. 15 – 09. 25	Beghersa Nor-Elhouda Benabdallah Mehdi	Université des sciences et de la Technologie Mohamed Boudiaf - Oran	"A note on the stability of some stationary and perturbed implicit systems in Hilbert spaces".	doct	EDP
09.30 – 09.40	Djellali Fayssal Ouarda Saifia	Université Badji Mokhtar, Annaba	On a thermoelastic laminated Timoshenko beam: well posedness and stability	Post Doct	EDP
09. 45 – 09. 55	Baibeche Sabah Lamine Bouzettouta	Université du 20 août 1955, Skikda/	Stability result of transmission problem for wave equations in the presence of time-varying delay	Doct	EDP
10. 00 – 10.10	Boulkheloua Chaima Khochemane Houssein Eddine	Université 20 Août 1955 Skikda,	Stability results of a one dimensional model for thermo-elastic Full Von Kármán beam with second sound and internal discrete delay time	Doct	EDP
10. 15 – 10. 25	Lila Ihaddadene	University of Science and Technology Houari Boumediene,	Asymptotic stability of Navier's equations Mindlin Timoshenko	mcb	EDP
10. 30 – 10. 40	Daira Ibtissem	Université Mohamed-Cherif Messaadia - Souk Ahras	Global Asymptotic stability of a kind of nonlinear neutral dynamic aquations with variable delays	Doct	EDP
10. 45 – 10. 55	Ben Moussa Asma Abdelfeteh Fareh		Well posedness and exponential stability of a thermoelastic Shear beam model.	Doct	EDP
11. 00 – 11. 10	Abir Kicha	University of Mohammed Seddik Ben yahia Jijel,	On the h-stability analysis of nonlinear differential equations	mcb	EDP
11. 15 – 11. 25	Saadi Djazia Amroune Abdelaziz	Université Med Boudiaf Msila	Picture fuzzy set and D*-fuzzy set.	Doct	Algèbre

11. 30 – 11. 40	Bensella Hayat Djilali Behloul	Université des Sciences et Technologie Houari Boumediene Alger	Diophantine equation related to common termes of linear recurrente sequences	Doct	Algèbre
11. 45– 11. 55	Labiod Imane Mourad Chelgham	Université Mohamed Seddik Ben Yahia Jijel.	Generating Functions of eneralized Tribonacci numbers and eneralized Fibonacci and Lucas numbers	Doct	Algèbre
12. 00 – 12. 10	Zahra Ameur Tarek Garici	Université des Sciences et de la Technologie Houari Boumedienne- Alger.	Autour de l'équation diophantienne $(a^n - 1) (b^n - 1) = x^2$	Doct	Algèbre
12. 15 – 12. 25	Rokiya Sahali Ali Boussayoud	Université Mohamed Seddik Ben Yahia, Jijel	Some new generating functions of products of numbers and polynomials with symmetric function in several variables.	doct	Algèbre
12. 30 – 12. 40	N. Rosa Ait-Amrane	Université Yahia Fares Medea,	A new Perspective on Hyper Dual Horadam Numbers	MCB	Algebre

View analysis of nonlinear acoustic wave equations in terms of viscoelasticity

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Abstract: This paper examines the existence and uniqueness of solutions under the traveling wave forms for a free boundary Cauchy problem of space-fractional Jordan-Moore-Gibson-Thompson equations of nonlinear acoustics, which describe sound propagation in thermo-viscous elastic terms. It does so by applying the properties of Banach's fixed point theorem.

Keywords: Traveling wave, nonlinear acoustics, fractional order, existence, uniqueness.

1 Introduction and statement of results

Several mathematical models are used to describe nonlinear acoustics phenomena. For example, In this work, we shall give a fractional model of nonlinear acoustics that is named the space-fractional Jordan-Moore-Gibson-Thompson (JMG-T) equation. This equation results from modeling high-frequency ultra sound waves, and is written as follows:

$$\begin{cases} \tau \psi_{ttt} + \mu \psi_{tt} - \kappa^2 \partial_x^\alpha \psi - \eta \partial_x^\alpha \psi_t = \varphi(x, t, \psi, \psi_t, \psi_{tt}, \psi_{xx}, (\psi_t)_{xx}), & (x, t) \in \Omega, \\ \psi(x, 0) = \psi_0(x), \psi_t(x, 0) = \psi_1(x), \psi_{tt}(x, 0) = \psi_2(x), & \psi_0, \psi_1, \psi_2 \in \mathbb{C}, \\ \psi_x(\kappa t, t) = 0, \psi_{xx}(\kappa t, t) = 0, & \kappa > 0, \end{cases} \quad (1.1)$$

where $\tau, \mu, \kappa, \eta \in \mathbb{R}_+^*$ and $\varphi : \Omega \times \mathbb{C} \times \mathbb{C} \times \mathbb{C} \times \mathbb{C} \times \mathbb{C} \rightarrow \mathbb{C}$ is a nonlinear function.

The major goal of this work is to determine the existence and uniqueness of the fractional-order's partial differential equation (1.1), under the traveling wave form

$$\psi(x, t) = \exp\left(-\frac{\kappa^2}{\eta}t\right) u(x - \kappa t), \text{ with } \kappa, \eta \in \mathbb{R}_+^*. \quad (1.2)$$

The basic profile u is not known in advance and is to be identified.

For the forthcoming analysis, we impose the following assumptions:

(A1) φ is a continuous function that is invariant by the change of scale (1.2). It gives us

$$\varphi(x, t, \psi, \psi_t, \psi_{tt}, \psi_{xx}, (\psi_t)_{xx}) = \exp\left(-\frac{\kappa^2}{\eta}t\right) (\eta \kappa f(\xi, u(\xi), u'(\xi), u''(\xi)) - \kappa^3 \tau u'''(\xi)), \quad (1.3)$$

where $\xi = x - \kappa t$ and $f : [0, \ell] \times \mathbb{C} \times \mathbb{C} \times \mathbb{C} \rightarrow \mathbb{C}$ is a continuous function.

(A2) There exist three positive constants $\beta, \gamma, \lambda > 0$ so that the function f given by (1.3) satisfies

$$|f(\xi, u, v, w) - f(\xi, \bar{u}, \bar{v}, \bar{w})| \leq \beta |u - \bar{u}| + \gamma |v - \bar{v}| + \lambda |w - \bar{w}|, \text{ for } \beta, \gamma, \lambda > 0,$$

for any $u, v, w, \bar{u}, \bar{v}, \bar{w} \in \mathbb{C}$.

Now, we give the principal theorems of this work.

Theorem 1.1. *Assume that the assumptions (A1), (A2) hold. We give*

$$\tau \kappa^5 + \beta \eta^4 - \mu \eta \kappa^3 \neq 0 \text{ and } \omega \in (0, 1)$$

If we put

$$\ell < \left(\frac{\eta^4 \Gamma(\alpha + 2) (1 - \omega)}{|\tau \kappa^5 + \beta \eta^4 - \mu \eta \kappa^3|} \right)^{\frac{1}{\alpha+1}}, \quad (1.4)$$

then the Cauchy problem (1.1) admits a unique solution in the traveling wave form (1.2) on Ω .

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