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LABORATORY OF ALGEBRA
AND ITS APPLICATIONS



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ICMA



Casablanca 2020

3rd International Conference on Mathematics and Its Applications

Hassan II University Casablanca
Faculty of Sciences Ain Chock Casablanca
Department of Mathematics and Computer Science

3rd International Conference on Mathematics and Its Applications, Casablanca

Communications Abstracts

Fsac Casablanca
February 28-29 2020

Preface

We are pleased to introduce the (ICMACASA 2020) acts, the summarize of abstracts of research that will be presented during the “3rd International Conference on Mathematics and Its Applications, Casablanca” On 28-29 February 2020. It is organized by the Faculty of Science Ain Chock of Casablanca.

The main goal of this conference is to gather the national and international scientific community of the domain to allow the Moroccan the Moroccan researchers to exchange and to develop their knowledge of search in the field of Mathematics and its applications. This will allow the participants to enrich their ideas and their Knowledge regarding search in this domain. The xxx communications that will be presented can be categorized into variety areas in mathematics which include (but not limited to):

- Algebra And Graph Theory
- Algebra and Discrete Mathematics
- Cryptography and Codes
- Algebra and Computer Security
- Polynomes And NumberTheory
- Number Theory
- Algebra And Homotpy
- Algebra And Algebraic Topology
- Harmonic Analysis
- Algebra And Harmonic Analysis
- Applied Mathematics
- Mathematical Modeling

We would like to thank all participants for their contributions to conference program. In particular, we thank the Faculty of Science Ain Chock of Casablanca and the Department of Mathematics and Computer Science of his head for their generous assistance. We also would like to acknowledge the financial and technical support from:

- University Hassan II Casablanca.
- Faculty of Science Ain Chock, Casablanca.
- Department of Mathematics and Computer Science.
- Laboratory of Topology, algebra, geometry and discrete mathematics.

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3rd International Conference on Mathematics and Its Applications 28-29 February 2020

Conference Programme

Friday February 28

Programme Overview			
Friday February 28			
8h00 - 8h45	Registration of participants		
8h45 - 9h30	Opening Ceremony		
Coffee Break			
9h30 - 10h15	A.Kaidi Almeria University Espagne	Modules Hopfiens ou Cohopfiens Heriditaires	Chairman A.Rochdi
11h00 - 11h45	P. ILLE Aix Merseille University France	Graphes premiers : un tour d'horizon	Chairman S.Abdelalim
12h00 - 12h45	D.C.Mayer University of Charles Francois, Graz, Austria Germany	Pattern recognition via Artin transfers, applied to p-class feld towers	
13h00-14h00	Lunch		



Friday February 28

Session 1: Algebra And Graph Theory

15h00 - 15h15	R..A.K.ASSAAD	A NOTE ON w-SPLIT MODULES	Chairman A.Chaichaa
15h20 - 15h35	M. ZAIDI	About the realizability of 3-uniform hypergraphs	
15h40 - 15h55	S. LAKHLIFI	On the spectral reconstruction problem for digraphs	
16h00 - 16h15	A.RIFFI	Graded almost pseudo-valuation domains	
16h20 - 16h35	N. ESSAMAOU	Residual coordinate over one-dimensional rings	

16h35- 17h15 Coffee Break

17h15 - 17h30	B.CHERGUI	Prime 3-uniform hypergraphs	Chairman A.Boussairi
17h30 - 17h45	L. Es-Salhi	On Armendariz-like properties	
17h45 - 18h00	Y.Zahir	On SA-rings	
18h00-18h15	I.SOUKTANI	On (-2)-spectrally monomorphic tournaments related to their adjacency matrices	
18h15-18h30	I.Talbaoui	Decomposability index of a Graph	

Session 2: Algebra and Discrete Mathematics

15h00 - 15h15	B.BENZEGHLI	Construction de l'∞champs géométrique des complexes parfaits	Chairman M.Kabil
15h20 - 15h35	A.ANEBRI	On AA-rings	
15h40 - 15h55	M. Zouagui	On Monoid Algebras	
16h20 - 16h35	A.Akrym	Remarks On the Strong and Uniform Kreiss Resolvent Condition	

16h35- 17h15 Coffee Break

17h15 - 17h30	N.Degaichi	The Roots of Polynomial Sequence and Their Limiting Behaviour	Chairman D.Karim
17h30 - 17h45	H. MOUADI	The F - lim of a collection of zero dimensional rings	
17h45 - 18h00	A.Eladraoui	A geometrical interpretation of the freeness of Heyting Algebras	
18h00-18h15	M. EL GARN	Characterization of automorphisms of $M = \sum_{i=1}^{+\infty} A_i$ having the extension property -where A is an integral domain and $M/\text{Tor } A(M) \cong A^n$	
18h15-18h30	K.Kaiba	THE TOTAL GRAPH OF AMALGAMATION	

Friday February 28



Session 3: Cryptography and Codes

15h00 - 15h15	M. SAHMOUDI	On the Classification of Elliptic curves over particular rings	Chairman C.Nacir
15h20 15h35	H. BENSELLA	Cryptographie basée sur les courbes éléptiques	
15h40 - 15h55	M. SOUHAIL	Proof Zero Knowledge Based On Elliptic Curves	
16h00 16h15	L. ZAHHAFI	A Secure Electronic Voting Protocol for Multiple Elections based on a Variant of the El Gamal Digital Signature	
16h20 16h35	A.HAFDI	the discovery of the sequence of pseudo remains to generate prime numbers facilitates the cracking of RSA-encryption	

16h35- 17h15 Coffee Break

17h15 - 17h30	S. ADOUI	Circulant matrices and logistic maps to share keys	Chairman F.El Wassouli
17h30 17h45	F. ASSAD	A two-stages pipelining implementation of the SHA-3 hash function for single and multi-message hashing	
17H45 - 18h00	Y. BENSALIH	Quasi-cyclic codes	
18h00 - 18h15	O.BENCHIHEB	On recurrent sets of operators	

Session 4: Algebra and Computer Security

15h00 - 15h15	A.Chillali	ECC Fully homomorphic encryption scheme	Chairman M.Lhous
15h20 15h35	W.CHATAR	The phase topology and bifurcation tori of the Generalized Yang-Mills potential	
15h40 - 15h55	M.EL HASSANI	Solving the closest vector problem with the reduced centered law method	
16h00 16h15	A.ADDADI	Decoding LDPC Codes by Information Geometry and Alternating Projections	
16h20- 16h35	S.EL MADRARI	Polya fields of some real biquadratic number fields K	

16h35- 16h45 Coffee Break

17h15 - 17h30	M.EL HAMAM	Properties of twisted on the Ring $F_q[e]; e^2 = e$	Chairman A.Chillali
17h30 17h45	B.BOUDINE	Les Codes Quantiques (Survol)	
18h00 - 18h15	J.LAAOUINE	A note on isodual constacyclic codes of length ps over the chain ring $F_p^m[u]/u^2$	
18h15-18h30	Z. BOUAZZAOU	Half-integral weight modular forms and real quadratic p-rational fields	



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15h30 - 15h45	EL ACHAB	On The Diophantine Equation $x^2 + 7^k = y^n$	
15h45 - 16h00	Z. BOUGHADI	Sub p -rational fields of the cyclotomic fields	
16h00 - 16h15	M. Chems-Eddin	On the 2-class group of some number fields with large degree	
16h15 - 16h35	A.Alhuraiji	Root-elements and root-subgroups of the Chevalley group $E_6(K)$, for fields K of characteristic two	
16h35- 17h15 Coffee Break			
17h15 - 17h30	K.AZI	Topologies de Grothendieck et applications a l'arithmétique	Chairman M.A.ELOmary
17h30 - 17h45	B.BOUSALMI	Permutation polynomials of degree 4 over F_q of characteristic ≥ 5	
18h15- 18h30	M. TAMIMI	Sur la divisibilité par les puissances de 2 du nombre de classes de certains corps quartiques cycliques réels	

Session 6: Algebra and Number Theory

15h00 - 15h15	M.A.HAJJAMI	Hilbert genus fields of imaginary cyclic quartic field	Chairman M.Magri
15h40 - 15h55	S. ESSAHEL	On the 2-class group of some imaginary multiquadratic number fields	
16h00 - 16h15	M. TALJAOU	Bases integrales de queleques familles de corps de nombre quartiques	
16h20- 16h35	M.HAYNOU	ON THE FUNDAMENTAL SYSTEM OF UNITS FOR PURE QUARTIC NUMBER FIELDS $K = \mathbb{Q}(\sqrt[4]{P})$	
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17h15 - 17h30	A.MOUATASSIM	Four dimensional absolute valued algebras containing a nonzero central element	Chairman M.El Maghri
17h30 - 17h45	N. SNANOU	Characterization of certain subgroups of $GL_n(F_p)$	
17H45 -18h00	H. FLIOUET	Sur les factorisations des extensions purement in séparables d'exposant non bornées	
17H45 -18h00	N.Karim	Quasi-periodicity of operators	



Session 7: Algebra And Homotpy

15h00 - 15h15	A.ZAIM	The relative Hilali conjecture	Chairman H.Abchir
15h20 15h35	S. CHOUINGOU	Note on a relative Hilali conjecture I	
15h40 - 15h55	M. AJEDDAR	Uniform algebraic Trigonometric spline Quasi-interpolants and the integral equations	
16h00 16h15	N.ELHARMOUCHI	Approximation of common fixed point of monotone semigroups in modular spaces	
16h20 - 16h35	J. JEDDI	Fixed point theorem for topological set endowed with a graph, and application to modular and function modular spaces	
16h35- 17h15 Coffee Break			
17h15 - 17h30	A.KAMOOUSS	A New Iteration Scheme For Approximating Fixed Points	Chairman I.Marrich
17h30 17h45	K. BELFAKIH	Superstability of Kannappan's and Van vleck's functional equations.	
17h45 -18h00	K. ABOUNAAJA	Branched covering and Riemann surfaces	
18h00 - 18h15	M. BELLAIHOU	Spherical interpolatory geometric subdivision schemes	
18h15- 18h30	A.CHAKKAR	Groupe des isométries des métriques lorentziennes invariantes à gauche sur les groupes de Lie	

Session 8: Algebra And Algebraic Topology

15h00 - 15h15	S. LAMSIFER	P-Coloring of Knots and Links	Chairman M.Ouarit
15h20 15h35	I. AITBRIK	k-Symplectic Affine Lie Algebras	
15h40 - 15h55	S. HAMRI	Classification of links up to link-homotpy using Milnor invariants	
16h00 16h15	M.A. HILALI	ON THE TORAL RANK CONJECTURE AND SOME CONSEQUENCES	
16h20 - 16h35	S. LAZAIZ	A constructive proof of Khamsi-Kirk-Pouzet fixed point theorem	
16h35- 17h15 Coffee Break			



Friday February 28

Session 9: Harmonic Analysis

15h00 - 15h15	R. Daher	Quaternions, Octonions, Algèbre et Analyse Harmonique	Chairman A.Akhlij
15h20 - 15h35	I.BERKAK	On Boehemians Theory	
15h40 - 15h55	M. El Hamma	On Titchmarsh's theorem	
16h00 - 16h15	O. TYR	On K functional function in Dunkl Quantum calculus	
16h20 - 16h35	A.Hor	On certain inequality for Hausdorff operator	

16h35- 17h15

Coffee Break

17h15 - 17h30	N. SIDHOUMI	Sur Les variétés Lorentziennes Admettant Un Champ de Droites Parallèle Dégénéré	Chairman R.Daher
17h30 - 17h45	F. Saadi	Generalized Hausdorff operator	
17h45 - 18h00	C.Khalil	On somme estimâtes for certain integrals transforms	
18h00 - 18h15	O. LABIHI	Extension of the Theorem of Brun-Titchmarsh	
18h15 - 18h30	A.AKHLIDJ	An analog of V. A. Abilov's theorem in generalized Bessel harmonic analysis	

Session 10: Algebra And Harmonic Analysis

15h00 - 15h15	E.BENDIB	ON CLASSES OF HARMONIC FUNCTIONS OF CARLEMAN TYPE	Chairman A.Fekak
15h20 - 15h35	H. SIAR	Les applications surjectives préservant le sous espace spectral local pour la somme, le produit, le produit triple et le produit generalize	
15h40 - 15h55	N. TAHMI	Sur les séries de Dirichlet multiples	
16h00 - 16h15	K. TAHRI	Representation theorem of set, valued Regular martingale and application	
16h20 - 16h35	A.AKKAOU	Some important results concerning quadratic type functional equations on semigroups	

16h35- 17h15

Coffee Break

Session 11: Analysis and optimal control

17h15 - 17h30	H.BOUKANJIME	stochastic hepatitis B epidemic model driven by Levy noise	Chairman H. Lakhbab
17h30 - 17h45	D.BENTALEB	Analysis and optimal control of a multistrain SEIR epidemic model with saturated incidence rate and treatment	
17h45 - 18h00	A.SABRI	Degenerate parabolic problems with variable exponent and L1- data	
18h00 - 18h15	I.SAMA	Etude paramétrique fréquentielle pour l'analyse vibratoire d'une plaque rectangulaire mince isotrope sous différentes conditions aux limites	
18h15- 18h30	S.BEN RHILA	The output sensitivity problem for a discrete-time linear	



disturbed systems

Session 12: Applied Mathematics

15h00 - 15h15	Z.GHOULI	Energy harvesting in an excited van der Pol device using a delayed piezoelectric coupling mechanism	Chairman S. El Mouden
15h20 - 15h35	I.HAY	Improvements of some iterative algorithms for a common solution of split equilibrium problems, variational inequality and fixed points problems.	
15h40 - 15h55	M.MARZOUQUE	Non-continuous double barrier reected BSDEs with jumps and stochastic Lipschitz coefficient	
16h00 - 16h15	C.MASNAOUI	Etude théorique et approximation numérique d'un problème à frontière libre de type Bernoulli intérieur	
16h20 - 16h35	K.HATIM	Discrete Laplace operator and its essential self-adjointness on a weighted 3-simplicial complex	

16h35- 17h15 Coffee Break

17h15 - 17h30	A.KARI	Fixed point Theorems for Generalized μ_i contraction and F_i contraction on S_i metric spaces	Chairman H.Chamlal
17h30 - 17h45	C.BOULAHIA	Vers une approche d'algèbre linéaire pour des requêtes analytiques et efficaces des graphes RDF	
17h45 - 18h00	N.BABA	A mathematical model of Moroccan Aristeus Antennatus fishery	
18h00 - 18h15	M.ABEIDALLAH	Estimation non-paramétrique de la fonction de risque : ca des données fonctionnelle spatiales	Chairman S. El Mouden

Session 13: Mathematical Modeling

15h00 - 15h15	K.ZAKI	Nonlinear parabolic equations with singular coefficient and L1 data	Chairman M.Lhous
15h20 - 15h35	S.ELFADILY	Analysis of an Economic Growth Model with Variable Carrying Capacity	
15h40 - 15h55	M.EL HIA	Problème de controle optimal pour un modèle de réaction-diffusion du type SIR	
16h00 - 16h15	M.BOUASABAH	Casablanca Stock Exchange: Stochastic Modeling and Prediction Interval for Future MASI index Values	
16h20 - 16h35	H.Bouazzaoui	Bongard Problems: Image Clustering By Means Of Persistent Homology and Group Equivariant Non Expansive Operators	

16h35- 17h15 Coffee Break

17h15 - 17h30	A.Marah	On nonlinear elliptic equations with singular lower order term	Chairman A.Radid
17h30 - 17h45	A.EL WAZNA	Existence results for fractional p -Laplacian problems.	
17h45 - 18h00	A.KOUIDERE	A Mathematical Modeling for the Dynamics of a Population of Diabetics and its complications with Effect of living environment using Optimal Control Strategy	
18h00 - 18h15	A.ELBHIH	Optimal control problem of a tuberculosis model in multi region with spatial dynamics	
18h15- 18h30	H.BOUTAYEB	A SIRD Model for Controlling the Spread of information	



Session: Posters

17h15 18h30	Jury: A.Baalal , S. Moumen , M. Lhous	
	M.JENNANE .	Optimality conditions for approximate Pareto solutions of a nonsmooth vector optimization problem with an infinite number of constraints
	M.KARAMA	Energy harvesting optimization in piezoelectric-based active nonlinear vibration absorber using time delay position feedback
	E.ANISSA	On the classe of n-power normal,n-power quasi-normal operators on Hilbert space.
	Y. EL KOUCH	Fixed point theorems for some contractions mappings in JS metric space
	K. OUFDIL	Reected Backwards Stochastic Differentials Equations and their Application in stochastic control
	A.EIKoufi	Dynamic of a stochastic SIR model with vaccination and nonlinear incidence rate



3rd International Conference on Mathematics and Its Applications 28-29 February 2020

Conference Programme

Saturday February 29 2020

Saturday February 29			
9h00 - 9h45	A.Nitaj Caen University. France	Cyber Security and Cryptography	Chairman A.Kaidi
9h45 - 10h30	T Komatsu Zhejiang Sci-Tech University China	Some properties of poly-Cauchy numbers with level 2	
10h30 - 11h15	N. Mahdou Sidi Mohamed Ben Abdellah University Fez	On amalgamated algebras along an ideal: A Survey	
11h15- 11h45	Coffee Break		



Saturday February 29 2020

Session 1: Algebra and Graph Theory

11h45 - 12h00	B.Boulayat	SOME FACTORIZATION PROPERTIES OF THE COMPOSITE RING $A + B[f]$	Chairman A.Boussairi
12h00 - 12h15	S.Abdelalim	Histoire Mathématiques Arabes	
12h15 - 12h30	Z. OUMAZOUZ	SUR LE GRAPHE DE PALEY	
12h30 - 12h45	A.Soullami	Extensions of Graded Rings	
13h00-13h15	A.Akrym	Remarks On the Strong and Uniform Kreiss Resolvent Condition	

Session 2: Algebra and Number Theory

11h45 - 12h00	A.GRINI	The binary operations calculus in a twisted Hessian curve over the ring $F_q[X]/(X^2)$	Chairman T.Komatsu
12h00 - 12h15	M. EL KATI	Polynomes définissant des unités dans les corps de fonctions	
12h15 - 12h30	M. BEN ELMEKKI	Note sur le spectre d'une fraction rationnelle	
12h30 - 12h45	S. GHIAOU	Sur la fonction $dk(n)$	
12h45 - 13h00	Y. ERRAI	α -admissible mappings and related fixed point theorems	
13h00-13h15	D.KARIM	On the set of Artinian subrings of a commutative ring	

Session 3: Algebra And Algebraic Topology

11h45 - 12h00	M. EDRAOUI	Relatively Cyclic P-Contraactions in Locally K-Convex Space	Chairman A.Baalal
12h00 - 12h15	M. BERGHOUT	Capacities in fractional Sobolev spaces with variable exponents	
12h15 - 12h30	M.A.FARID	Fixed Point Theorems of Block Operator Matrices On Banach Algebras.	
12h30 - 12h45	A.Boua	Semiderivations and generalized semiderivations in near-rings	
12h45 - 13h00	S. MOUHSSINE	Homoderivations and Jordan right ideals in 3-prime near-rings	

Session 4: Algebra And Harmonic Analysis

11h45 - 12h00	H.LABRIGUI	Some Results of $*\text{-}K\text{-}g$ frames in Hilbert C^* -module	Chairman R.Daher
12h00 - 12h15	M.ROSSAFI	Continuous Frame With C^* -Valued Bounds	
12h15 - 12h30	H. LAKRIMI	On linear Dynamical Systems of elementary Operators	
12h30 - 12h45	A.TOURI &	Controlled continuous g -frames in Hilbert C^* module	
12h45 - 13h00	O.AJEBBAR	GENERALIZATION OF D'ALEMBERT'S OTHER FUNCTIONAL EQUATION ON SEMIGROUPS	



Session 5: Mathematical Modeling

11h45 - 12h00	S.BIDAH	Sur la modélisation des sondages : Stabilité et sensibilité globale par les méthodes de coefficients de corrélation de rang partiel et d'échantillonnage d'hypercube latin.	Chairman M.Lhous
12h00 - 12h15	A.KASSIDI	Existence of Entropy Solutions the Anisotropic Elliptic Nonlinear Problem with Measure data in Weighted Sobolev Space	
12h15 - 12h30	Y.OUAFIK	Numerical Simulations of a Quasistatic Frictional Contact Problem with Normal Compliance in Thermo-Electro Viscoelasticity	
12h30 - 12h45	O.ZAKARY	Parameters estimation, sensitivity analysis and model uncertainty for an Inuenza epidemic model.	
12h45 - 13h00	A.EL MFADEI	On the stability of intuitionistic fuzzy fractional differential equations	
13h00 - 13h15	M.OUARIT	Exponential stabilization of distributed bilinear parabolic time delay systems	