The Laboratory of Mathematics, Statistics and Applications (LMSA) Organizes

International Days of Mathematics, Statistics and Applications
Journées Internationales de Mathématiques, Statistique et Applications
JIMSA'2025

May 27-29, 2025. Faculty of Sciences, Mohammed V University in Rabat (Morocco)

Tuesday, May 27

14:00-15:00	**Welcome Participants – Registration**
15:00-16:00 **Belmahi Amphitheater**	*Opening Ceremony*
16:00-16:30	**Coffee Break and Official Photo**
16h30-17h15 **Chair: A. Zoglat**	*Opening Conference* *D. Ouazar* Modeling paradigms: Conceptual, data-driven, and hybrid approaches – the future

Wednesday, May 28

- *Session* **Operator Theory, Function Spaces and Related Topics**

08:00-08:30	**Reception of participants**	
08:30-10:45	**Chair: M. Elhamdadi**	**Al Baytar Amphitheater**
08:30-09:15	**M. Mbekhta**	Polar factor: Approximation and preserver problems
09:15-10:00	**V. G. Bardakov**	Yang-Baxter equation and Rota-Baxter operators on groups, racks, and algebras
10:00-10:45	**K. Ezzinbi**	Linear dynamical systems and oscillatory dynamics for some evolution equations using Favard's theory in uniformly convex Banach spaces
10:45-11:15	**Coffee Break**	
11:15-12:45	**Chair: Z. Abdelali**	**Al Baytar Amphitheater**
11:15-11:45	**I. EL-Fassi**	Almost generalized multi-quadratic functions in Lipschitz spaces
11:45-12:15	**M. A. Ighachane**	Multiple-term improvements of Jensen's inequality for (p, h)-convex and (p, h)-log convex functions
12:15-12:45	**B. Seddoug**	On simple normal structure and best proximity points in reflexive Banach space
12:45-14:30	**Lunch Break**	

Wednesday, May 28

- *Session* **Operator Theory, Function Spaces and Related Topics**

14:30-16:45	Chair: V. Müller	Al Baytar Amphitheater
14:30-15:15	L. Molnar	Isomorphisms of positive cones in operator algebras under different types of geometric means
15:15-16:00	E. Zerouali	Propagation phenomena for subnormal matricial weighted shifts
16:00-16:45	R. El Harti	Crossed product Banach algebras associated with dynamical systems
16:45-17:15	Coffee Break	

17:15-19:15	Chair: K. Idrissi	Al Baytar Amphitheater	Chair: M. A. Ighachane	Daguin Room
17:15-17:30	C. Benzarouala	A fixed point theorem in gauge spaces and applications to Ulam-stability of delay differential equations	K. Azhoum	Notes on finite operator
17:30-17:45	A. Ouannasser	On anisotropic double phase problems	M. Barloub	The hessian equation in quaternionic space
17:45-18:00	H. Dkhissi	Integral transform associated with a meromorphic Bargmann space	O. Abad	Insights on the closed generalized Drazin-R invertible operators and their applications to delay differential equations
18:00-18:15	S. Boudrai	The slice hypermeromorphic Dirichlet space	Z. Taki	About the numerical range of the basic elementary operator in semi-Hilbertian spaces
18:15-18:30	Y. El Khatiri	Order isomorphisms on unbounded Self-adjoint Operators	A. El Gasmi	Degenerate Monge-Ampère equation on complex varieties in bounded domains of C^n
18:30-19:45	A. Ech-charyfy	Infinite-dimensional flat extensions in operator moment problems	A. Maarouf	Bargmann integral transform on the two-sided Bargmann-Fock space
18:45-19:00	R. Sersif	Multiple solutions to the fractional (p,q)-Laplacian equations involving the critical exponents	M. Masmodi	Multiple positive solutions for fractional elliptic problems with multi-critical Hardy-Littlewood-Sobolev exponents
19:00-19:15	A. Retbi	L-Dunford-Pettis property in Banach spaces		

17:15-19:15	Chair: M. Rossafi	Seminar Room, Department of Mathematics	Chair: Y. Chatibi	Meeting Room, Department of Mathematics
17:15-17:30	L. Bouali	On Quaternionic Poly-Bargmann Spaces	R. Bouydou	Well-posedness and convergence of a semi-discrete scheme for the conserving Allen-Cahn equation coupled to the unsteady Navier-Stokes equation
17:30-17:45	M. Morjane	FPA-property	H. Eddaoudi	Regularity of G(.)-superharmonic functions
17:45-18:00	S. Touaiher	On K-g-Fusion Frames within Hilbert C*-Modules	M. Boutrigue	Numerical range and numerical radius inequalities
18:00-18:15	A. El Hyat	Benedicks-Amrein-Berthier'S Uncertainty Principle for Quaternion Fourier Transform	A. El Asri	The Lomonosov type theorems and the invariant subspace problem for non-archimedean Banach spaces
18:15-18:30	H. El Mouadine	On the range of some elementary operators	R. Elhoua	Bargmann space associated to the two-sided slice regular functions on H^2
18:30-18:45	A. Bouhouch	Analysis Calabi-Yau Geometry and Black Holes Physics	K. Gouach	On the A-contractions operators
18:45-19:00	S. Madani	Putnam-Fuglede theorems and orthogonality of an elementary operator in Cp classes	I. Naainia	On the joint numerical radius of generalized spherical aluthge transforms of operators
19:00-19:15	J. Boutarfass	Ulam stability problem of certain functional equations	L. Yassine	Maps commuting with the lambda-Aluthge transform for the Lie Star Jordan product

Wednesday, May 28

- *Session* **Probability, Statistics and Modeling**

08:00-08:30	**Reception of participants**				
08:30-10:45	**Chair: A. Zoglat**	**Al Birouni Amphitheater**			
08:30-09:15	**Y. Ouknine**	Optimal Stopping under Model Uncertainty in a General Setting			
09:15-10:00	**B. Abou El Majd**	Du laboratoire à la réalité : valorisation de la recherche et innovation – L'exemple de MyMDO			
10:00-10:45	**N. Alaa**	On a Fractional Reaction–Diffusion System Applied to Image Restoration and Enhancement			
10:45-11:15	**Coffee Break**				
11:15-12:45	**Chair: I. Bensaoud**	**Al Birouni Amphitheater**	**Chair: W. El Hannoun**	**Ibn Hayan Amphitheater**	
11:15-11:30	**R. Adenane**	On the xy models in mathematical epidemiology and their synergies with chemical reaction network	**H. Chaouch**	Parameter estimation for reflected fractional Ornstein-Uhlenbeck processes with random effects	
11:30-11:45	**F-Z. Ahssous**	Linear Quantile Mixed Models: From Theory to Implementation	**W. El Afari**	Advancing Brain Tumor Segmentation with Deep Learning: Insights from the BraTS Africa Dataset	
11:45-12:00	**A. Arhandou**	Optimisation des schémas de subdivision pour la modélisation géométrique de courbes et surfaces à l'aide de l'apprentissage profond	**A. El Bernoussi**	Comparing Quantile Regression Approaches: Simulation-Based Insights for Enhancing Fire Risk Prediction with Extreme Modeling	
12:00-12:15	**S. Baqqass**	From ARIMA to Machine Learning: A Comparative Study on Daily High-Speed Rail Demand Forecasting	**I. Ennaqui**	Real-Time Planning of Customized Bus Routes Using Multi-Agent Deep Reinforcement Learning	
12:15-12:30	**I. Benamara**	A Mathematical Modeling Approach to the Co-Dynamics of Covid-19 and Tuberculosis	**I. Essalih**	Systematic literature review of stability and hyperstability of some functional equations	
12:30-12:45	**I. Chabba**	Forecasting Morocco's Electricity Imports: A Comparative Analysis between SARIMA and SVR	**K. El Qate**	Regularized Tensor Factorization for Hyperspectral Image Completion	
12:45-14:30	**Lunch Break**				

Wednesday, May 28

- *Session* **Probability, Statistics and Modeling**

14:30-16:45	Chair: Z. El Hadri	Al Birouni Amphitheater
14:30-15:15	A. El Ghini	Statistical Inference for the Generalized Autocorrelation Function of Non-Stationary Time Series under Weak White Noise: Theory and Applications
15:15-16:00	S.-E. El Adlouni	Régions climatiques de Köppen et informations a priori sur les extrêmes hydrologiques
16:00-16:45	M. Hanafi	A network approach to Joint Dimension Reduction of a set of data tables

16:45-17:15	Coffee Break			

17:15-19:15	Chair: M. Ziani	Al Birouni Amphitheater	Chair: A. El Ghini	Ibn Hayan Amphitheater
17:15-17:30	H. Habri	Modeling and Analysis of two-strain epidemic model with time delays and nonlinear incidence rate in complex networks	S. Laarif	A New Estimation Approach for Structural Equation Models
17:30-17:45	M. Idalfahim	Optimization of Agricultural Production in the MENA Region Under Resource Constraints and Water Stress	S. Ouhssaine	A Novel Method for Estimating Structural Equation Models
17:45-18:00	A. Imzourh	Modeling Integer-Valued Time Series: Theory and Applications of INAR, INMA, and INARMA Processes	M. Mimouni	Physics-Informed Neural Networks for Parameter Estimation of SARS-CoV-2 Antigen-Antibody Interaction Dynamics
18:00-18:15	S. Kahil	A Hybrid Approach Combining K-Means Clustering and Machine Learning for Photovoltaic Power Prediction	S. Mouchtabih	Uniqueness of solutions to quadratic BSDEs with locally Lipschitz generator
18:15-18:30	M. Khalil	Proposal for an Intelligent Architecture for Resilient Smart Cities		
18:30-18:45	I. Khaloufi	Maximal Output Admissible Set for Linear Distributed Systems with an Application to Disturbance Rejection	H. Laknaoui	Proactive Threat Detection: Unsupervised Clustering Approaches for Anomaly Detection in Cybersecurity
18:45-19:00	Y. Difaa	Safety Distribution Analysis within Structured Epidemic Frameworks	S. Kassimi	Enhancing image denoising: A novel non-local anisotropic diffusion framework based on Caputo derivatives and Gaussian convolution for the Perona-Malik model
19:00-19:15	A. Louakar	Existence and optimal control of Hilfer fractional stochastic pantograph differential equations	Z. Ghouli	Energy Harvesting in a Time-Delayed Mathieu–Duffing MEMS Device
19 :15-19 :30	B. Labloul	The reliability of the estimation of the GEV return level: A comparative study based on Spot Crude Oil Price: West Texas Intermediate		

Thursday, May 29

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08:00-08:30	**Reception of pariticipants**			
08:30-10:45	**Chair: M. Fihri**	**Al Birouni Amphitheater**		
08:30-09:15	**H. Benchekroun**	Market power: A powerful motive for mergers in extractive industries		
09:15-10:00	**A. Amar**	Weather Derivatives and Statistical Spatial Analysis: Factor and Markov Regime Switching Copulas		
10:00-10:45	**Y. Joulal**	Au-delà du hasard : modéliser le prix des options à l'ère des statistiques intelligentes		
10:45-11:15	**Coffee Break**			
11:15-12:45	**Chair: N. Ammor**	**Al Birouni Amphitheater**	**Chair: Z. Ghardallou**	**Ibn Hayan Amphitheater**
11:15-11:30	**H. Regragui**	Blind Deconvolution Using Game Theory and CNNs on Grayscale Image Datasets	**M. Slime**	Modeling Claim Costs and Premiums in Moroccan Auto Insurance with GLMs
11:30-11:45	**A. Sahli**	Overcoming convergence problems in PLS path modelling	**R. Taki**	Stationary distribution of a stochastic epidemic model with logistic growth
11:45-12:00	**M. Semlali**	The impact of white noise and Lévy jumps on the dynamics of an SIR epidemic model		
12:00-12:15	**F-Z. Semmane**	Blind deconvolution using bilateral total variation and nash equilibrium	**S. Tariq**	Statistical Aspects of Black Holes
12:15-12:30	**H. Zahraoui**	Regularized Generalized Canonical Correlation Analysis for multiblock data analysis	**A. Settar**	Log-volatility models in presence of zero returns : log-GARCH or SV ?
12:30-12:45	**A. Sghir**	Medical Image Segmentation with Dynamic Weighted Chan-Vese: Weight Prediction Using Gradient and CNN	**K. Zeroual**	Optimal control of cardiovascular diseases among HIV infected
12:45-14:30	**Lunch Break**			

Thursday, May 29

- *Session* **Operator Theory, Function Spaces and Related Topics**

08:00-08:30	Reception of participants	
08:30-10:45	**Chair: M. Mbekhta**	**Al Baytar Amphitheater**
08:30-09:15	**V. Müller**	The essential numerical range in lp
09:15-10:00	**M. Barraa**	Joint numerical range of several quaternionic right linear bounded operators
10:00-10:45	**N. Boudi**	On the quantum phase operator
10:45-11:15	Coffee Break	
11:15-12:45	**Chair: E. Benabdi**	**Al Baytar Amphitheater**
11:15-11:45	**H. Ezzahraoui**	On the regularity of some bounded operators with closed ranges
11:45-12:15	**K. Idrissi**	The matrix-valued complex moment problem
12:15-12:45	**S. Alaoui Chrifi**	Square roots of m-complex symmetric operators and permanence of spectral properties
12:45-14:30	Lunch Break	
14:30-16:45	**Chair: A. Zoglat**	**Al Baytar Amphitheater**
14:30-15:15	**L. Oubbi**	Generalized Nachbin weighted spaces, an overview
15:15-16:00	**A. Ghanmi**	An integral representation of the quaternionic Harmonic Bergman space
16:00-16:45	**M. Elhamdadi**	Idempotents in quandle rings
16:45-17:15	Coffee Break	
17:15-18:00	**Chair: E. Zerouali**	**Al Baytar Amphitheater**
17:15-18:00	**R. E. Curto**	The Local Operator Moment Problem on R
18:00-18:30	Closing	