



# CAIMCASE2021



المدرسة الوطنية للعلوم التطبيقية - آكادير  
 ÉCOLE NATIONALE DES SCIENCES APPLIQUÉES - AGADIR

## Program Schedule

### Plenary Conferences

Day 1: Friday, December 10<sup>th</sup>, 2021

8:30 am to 9:00 am	
<b>Registration: Mahdi Elmandjra Amphitheater</b>	
<b>Opening Session &amp; Plenaries</b>	
9:00 am to 9:30 am	<b>Opening Session : Mahdi Elmandjra Amphitheater</b> Speakers : <ul style="list-style-type: none"> <li>• Prof. Abdelaziz Bendou, President of Ibn Zohr University</li> <li>• Prof. Mohamed Wakrim, Director of ENSA-Agadir</li> <li>• Prof. Hassane Bouzahir, Head of Laboratory LISTI at ENSA-Agadir</li> </ul>
9:30 am to 10:15 am	<b>Plenary Conference 1 :</b> Theme : Natural Language Processing and Social Sciences Speaker : <b>Dr. Meriem Benhaddi</b> Chairs: <b>Dr. Hamid Aksasse and Prof. Hassane Bouzahir</b>
10:15 am to 11:00 am	<b>Plenary Conference 2 :</b> Theme : Big Data, AI and Robotics for Predictive Applications Speaker : <b>Dr. Hiba Asri</b> Chairs: <b>Dr. Hamid Aksasse and Prof. Hassane Bouzahir</b>
11:00 am to 11:30 am <b>Welcome drinks</b>	
11:30 am to 12:15 pm	<b>Plenary Conference 3 :</b> Theme : Periodic Solutions for Infinite Dimensional Dynamical Systems: Past and Present Speaker : <b>Prof. Khalil Ezzinbi</b> Chairs: <b>Dr. Hamid Aksasse and Prof. Hassane Bouzahir</b>
12:15 pm to 1:00 pm	<b>Plenary Conference 4 :</b> Theme: Stochastic Modelling and Statistics for Epidemic Models. Speaker : <b>Dr. Mohamed El Fatini</b> Chairs: <b>Dr. Soukaina Hadiri and Prof. Hassane Bouzahir</b>
<b>Lunch and Jumu'ah Prayer Time</b> 1:00 pm to 3:00 pm	

Oral Communications Sessions	
<b>Session 1.1/4: Computer Science, Mahdi Elmandjra Amphitheater Dr. El Mehdi Cherrat, Dr. Hiba Asri and Dr. Azzedine Dliou</b>	
3:00 pm to 3:20 pm	<b>-Système d'Identification en Cascade par Fusion MultiBiométriques et Apprentissage Profondi.</b> E. Cherrat
3:20 pm to 3:40 pm	<b>-Green Smart Transportation Solutions for Combating Covid-19.</b> N. Chbaik, A. Khiat, A. Bahnasse and H. Ouajji
3:40 pm to 4:00 pm	<b>-Video-based Comparative Study of Activation Function for Action Recognition using 3D Convolution Neural Network.</b> A. Boukdir, M. Benaddy and O. El Meslouhi
4:00 pm to 4:20 pm	<b>-L'impact du Machine Learning sur l'Expérience Client – Exemple de Netflix.</b> M. Loukili, R. El Youbi and F. Messaoudi
4:20 pm to 4:40 pm	<b>-Artificial Intelligence in Digital Marketing.</b> R. El Youbi, M. Loukili and F. Messaoudi
<b>Session 1.2/4: Renewable Energies, Control and Systems, Room K02 Dr. Wissam Jenkal and Dr. Mustapha Laaboubi</b>	
3:00 pm to 3:20 pm	<b>-A Novel hybrid Meta-heuristic/Analytical Approach based on Artificial Intelligence for Photovoltaic Cells Parameter Estimation.</b> D. Benhmamou et al.
3:20 pm to 3:40 pm	<b>-Simulation Study of a Hybrid Photovoltaic Solar Thermal System with Simulink/Matlab.</b> M. Bouzelmad et al.
3:40 pm to 4:00 pm	<b>-Reliability and Performance Upgrading of the Wind Energy Conversion System: Wind Turbine.</b> K. Dahmane, B. Bouachrine, M. Oubella , M. Ajaamoum and E. M. Boulaoutaq
4:00 pm to 4:20 pm	<b>-Control of DC-DC Buck Converter using Sliding Mode Control and Super Twisting Sliding Mode Control: Comparative Study.</b> A. Tighirt and F. El Guezar
4:20 pm to 4:40 pm	<b>-Stochastic Stability Analysis and Power Control for a Standalone Photovoltaic Generator.</b> M. Aatabe, F. El Guezar, A. N. Vargas and H. Bouzahir
4:40 pm to 5:00 pm	<b>-Commande Flou de Type Takagi-Sugeno pour le Suivi du Point de Puissance Maximale d'un Générateur Photovoltaïque.</b> R. Boumdouz et al.

<b>Oral Communications Sessions</b>	
<b>Session 1.3/4: Stochastics and Statistics, Room K01</b> <b>Chairs: Dr. Lahcen Boulamba and Dr. Imade Fakhouri</b>	
3:00 pm to 3:20 pm	<b>-General Partitioning Algorithm for Computing Markov Chain Steady State Probability.</b> A. Zakrad
3:20 pm to 3:40 pm	<b>-On the Conditional Model in the High Dimensional Data Analysis.</b> M. Alahiane
3:40 pm to 4:00 pm	<b>-On Shrinkage Estimation of Spherical Symmetry with Residual for the General Linear Model under Balanced Loss Functions.</b> L. Hobbad
4:00 pm to 4:20 pm	<b>-Analyse Mathématique Stochastique d'un Modèle de l'Interaction Ville-campagne.</b> L. Boulaasair
4:20 pm to 4:40 pm	<b>-General Decay Stability of Nonlinear Delayed Hybrid Stochastic Systems with Switched Noises.</b> A. Zouine
<b>Session 1.4/4: (Applied) Mathematics, Amphitheater Ibn Al Banna</b> <b>Chairs: Dr. Hicham El Boujaoui and Dr. Abderrazzak Boufala</b>	
3:00 pm to 3:20 pm	<b>-Stabilization of Beam Equation with a Delay Term.</b> S. Boumasmoud and K. Ezzinbi
3:20 pm to 3:40 pm	<b>-Bilinear Boundary Optimal Control of a Kirchoff Plate Equation.</b> A. Bouhamed, H. Bouzahir and A. Elkabouss
3:40 pm to 4:00 pm	<b>-Radial Basis Functions for Solving Fractional Diffusion-wave Equation.</b> A. Laghzal and H. El Boujaoui
4:00 pm to 4:20 pm	<b>-Introduction to Matrix SIR Arino Models.</b> R. Adenane, F. Avram and D. I. Ketcheson
4:20 pm to 4:40 pm	<b>-Almost Automorphic Solutions for Some Nonautonomous Linear Partial Functional Differential Equations.</b> A. Afoukal, K. Ezzinbi and K. Hilal
4:40 pm to 5:00 pm	<b>-Compact Almost Automorphic Weak Solutions of Some PHI-Strongly Monotone Partial Differential Inclusions with Stepanov Almost Automorphic Forcing Terms.</b> M. Ziat, K. Ezzinbi and K. Hilal
5:00 pm to 5:20 pm	<b>-Existence and Regularity of Solutions for Nondensely Defined Partial Neutral Functional Integrodifferential Equations with Infinite Delay</b> J. El matloub, K. Ezzinbi and S. Ghnimi
5:20 pm to 5:40 pm	<b>-Commutativity of Prime Banach Algebras and Differential Identities.</b> M. Moumen and L. Taoufiq
5:40 pm to 6:00 pm	<b>-A Note on Some Kind of Multipliers in Rings.</b> S. Belkadi and L. Taoufiq

## Plenary Conferences Day 2: Saturday, December 11<sup>th</sup>, 2021

Plenary Sessions	
9:00 am to 9:45 am	<b>Plenary Conference 5 :</b> Theme : The Local Time of the Brownian Motion as a Bridge from the Itô's Formula to the Tanaka's Formula and Application in Finance Speaker : <b>Dr. Aissa Sghir</b> Chairs: <b>Prof. Hassane Bouzahir and Dr. Soukaina Hadiri</b>
9:45 am to 10:30 am <b>Online</b>	<b>Plenary Conference 6:</b> Theme : Practical High-Throughput and Noise-Robust SARS-CoV-2 Testing ( <a href="#">Online</a> ) Speaker : <b>Dr. Bubacarr Bah</b> Chairs: <b>Prof. Hassane Bouzahir and Dr. Hamid Aksasse</b>
10:30 am to 11:00 am <b>Tea Break</b>	
Oral Communications Sessions Day 2: Saturday, December 11 <sup>th</sup> , 2021	
Session 2.1/4: Finance, Mahdi Elmandjra Amphitheater, Saturday, Dec. 11 <sup>th</sup> 2021 Chairs: Dr. Said Taarabti and Dr. Soukaina Hadiri	
11:00 am to 11:20 am	<b>-An Artificial Neural Network Approach to Financial Market Volatility Forecasting.</b> A. Tahiri, B. Benaïd, H. Bouzahir, N. A. M. Khan
11:20 am to 11:40 am	<b>-Impact of Cryptocurrency on the Moroccan Market.</b> B. Touijrat
11:40 pm to 12:00 pm	<b>-Design of an Application to Optimize the Process of Participatory Financing of Housing Sector in Morocco Using Blockchain Technology.</b> R. Diyab and A. Chakir
12:00 pm to 12:20 pm	<b>-Application de l'Intelligence Artificielle pour l'Inclusion Financière</b> A. Laminou and A. Chakir
Session 2.2/4: Information Technologies & Embedded Systems, Room K01 Dr. Wissam Jenkal and Dr. Mustapha Laaboubi	
11:00 am to 11:20 am	<b>-An Overview of AI Algorithms and Hardware Designs for ECG Signal Analysis.</b> B. Bendahlane, W. Jenkal, M. Laaboubi and R. Latif
11:20 am to 11:40 am	<b>-Prediction and Mapping of Meteorological Parameters Based on Nonlinear Spatial Interpolation Modeling for Agriculture Application.</b> A. Yagour et al.
11:40 am to 12:00 pm	<b>-Optimization Metrics for OpenCL Kernels.</b> S. Agharass et al.
12:00 pm to 12:20 pm	<b>-Ambient Ozone Concentrations Modeling in the City of Agadir (Morocco) Using Random Forests.</b> A. Adnane et al.

<b>Oral Communications Sessions</b>	
<b>Session 2.3/4 : Stochastics and Statistics, Room K02 Saturday, December 11<sup>th</sup> 2021</b> <b>Chairs: Dr. Rachid Belfadli and Dr. Lahcen Boulanba</b>	
11:00 am to 11:20 am	<b>-On the Large Deviations Principle for some SPDEs.</b> L. Boulanba
11:20 am to 11:40 am	<b>-Statistical Analysis of the Non-ergodic Fractional Ornstein-Uhlenbeck Process with Periodic Mean.</b> R. Belfadli
11:40 am to 12:00 am	<b>-Multidimensional BSDEs with Mixed Reflections and Balance Sheet Optimal Switching Problem.</b> I. Fakhouri
12:00 pm to 12:20 pm	<b>-Infinite Horizon Multi-Dimensional BSDE with Oblique Reflection and Switching Problem.</b> N. Ourkiya
12:20 pm to 12:40 pm	<b>- Backward Stochastic Differential Equations and their Applications in Stochastic Zero-sum Differential Games.</b> K. Oufdil
12:40 pm to 01:00 pm	<b>-A stochastic Hepatitis B Epidemic Model Driven by Lévy Noise.</b> B. Boukanjime and M. El Fatini
<b>Session 2.4/4: Optimization and Graphs, Amphitheater Ibn Al Banna</b> <b>Chairs: Dr. Anouar Lahmdani and Dr. Mohamed Tifroute</b>	
11:00 am to 11:20 am	<b>-Conditional Subgradient Method for Solving Nonsmooth Multi-objective Optimization Problem.</b> A. Lahmdani et al.
11:20 am to 11:40 am	<b>-Problème de Tournées de Véhicules Hybrides Parallèles avec Satisfaction de Clients et Réduction des Emissions.</b> M. Bechar and R. Abounacer
11:40 am to 12:00 pm	<b>-On Labeling the Iterated Mycielski of Graphs with a Condition at Distance Two.</b> K. Dliou, H. El Boujaoui and M. Kchikech
12:00 pm to 12:20 pm	<b>-Almost Automorphic Solutions for Some Evolution Equations through an Optimization Problem.</b> K. Ezzinbi and M. El attouy
12:20 pm to 12:40 pm	<b>-Solving Nonsmooth Bi-Objective Environmental and Economic Dispatch Problem using Smoothing Techniques.</b> M. Tifroute et al.
12:40 pm to 01:00 pm	<b>-Non-overlapping Domain Decomposition Method for the Solution of Topology Optimization Problem. (Online)</b> O. Raibi, E. Essoufi and A. Makrizi

## Plenary Online Conferences      Day 3: Sunday, December 12<sup>th</sup>, 2021

Plenary Online Sessions	
9:00 am to 9:45 am	<b>Plenary Online Conference 1:</b> Theme: Re-analyzing the SARS-CoV-2 Series Using an Extended Integer-valued Time Series Models: Situational Assessment of the COVID-19 in Mauritius. Speaker : <b>Dr. Mamode Khan Naushad Ali</b> Chairs: <b>Prof. Hassane Bouzahir et al.</b>
9:45 am to 10:30 am	<b>Plenary Online Conference 2:</b> Theme: Existence Results for Some Stochastic Functional Integrodifferential Systems Driven by Rosenblatt Process. Speaker : <b>Prof. Mamadou Abdoul Diop</b> Chairs: <b>Prof. Hassane Bouzahir et al.</b>
10:30 am to 11:15 am	<b>Plenary Online Conference 3:</b> Theme: Introduction to Markov Jump Linear Systems with Applications in Engineering. Speaker : <b>Prof. Alessandro N. Vargas</b> Chairs: <b>Prof. Hassane Bouzahir et al.</b>
11:15 am to 11:30 am <b>Tea Break</b>	

## Oral Communications      Day 3: Sunday, December 12<sup>th</sup>, 2021

Oral Online Sessions	
<b>3.1. First Online Session 11:30 am to 1:00 pm</b> Chairs : <b>Prof. Hassane Bouzahir et al.</b>	
11:30 am to 11:40 am	<b>-Stochastic Heat Equation with Piecewise Constants Coefficients.</b> A. Zougar
11:40 am to 12:00 pm	<b>-A Delay Mathematical Model for Cholera Transmission.</b> S. Al Shanfari
12:00 pm to 12:20 pm	<b>-The Impact of Predator-prey Speeds on their Dynamics.</b> Q. J. A. Khan et al.
12:20 pm to 12:40 pm	<b>-The Hidden Role of the Pre-Symptomatic Individuals in the Transmission Dynamics of COVID19.</b> M. K. S. Yahyai
12:40 pm to 1:00 pm	<b>-Mathematical Analysis of a Zika Model with Reservoirs and Human Movement</b> K. Imuqrashi
<b>Lunch and Prayer Time</b> 1:00 pm to 2:30 pm	

**3.2. Second Online Session 2:30 pm to 6:10 pm  
Chairs : Prof. Hassane Bouzahir et al.**

2:30 pm to 2:50 pm	- <b>Approximate Controllability for Some Fractional Delay Integrodifferential Evolution Inclusions with Noncompact Resolvent Operator.</b> K. Ezzinbi and M. Elghandouri
2:50 pm to 3:10 pm	- <b>Mathematical Analysis of the Delay Differential Equation Model for the Farm Level Cocoa yield.</b> B. Oluwatosin et al.
3:10 pm to 3:30 pm	- <b>Cognitive Biases in Decision Making - Influences of Artificial Intelligence on Asset Management.</b> R. Arbaoui et al.
3:30 pm to 3:50 pm	- <b>Stability of Landau-Lifshitz-Bloch Equation.</b> M. Moumni
3:50 pm to 4:10 pm	- <b>Critical Current Density and Flux Pinning Force in High Temperature Superconductor.</b> A. Abou El Hassan et al.
4:10 pm to 4:30 pm	- <b>Second-Moment Stability of Markovian Jump Systems with Varying Delays.</b> A. El Hamdi
4:30 pm to 4:50 pm	<b>Break</b>
4:50 pm to 5:10 pm	- <b>Generating Survival Times to Simulate Hazard-based Regression Models with the Presence of Covariates.</b> A. H. Muse, O. Ngesa and S. Mwalili
5:10 pm to 5:30 pm	- <b>High Capacity Reversible Data Embedding Technique using Image Interpolation.</b> A. Labsir et al.
5:30 pm to 5:50 pm	- <b>Application of Machine Learning to Sentiment Analysis.</b> O. Bellar et al.
5:50 pm to 6:10 pm	- <b>Semantic Segmentation of Coastal Upwelling in Ocean Infrared Satellite Images with Deep Fully Convolutional Neural Networks.</b> M. Snoussi, A. Tamim. S. El Fella and M. El Ansari