15 Internacional Workshop on Operation Research IWOR 2023

martes, 30 de mayo de 2023 - viernes, 2 de junio de 2023

Facultad de Matemática y Computación

Programa científico

Monday Pre-IWOR's activities

9:00-11:00 Open Session of the Convention
(Cine Yara, L and 23 street, Vedado)

14:00-16:00 Tutorial-. Introduction to R-Shiny. Dr. Clément Laroche (SAMM, Université Paris 1).
Introducer: Yanet García Room 1

15:00-17:00 Pre-event workshop: Impact of research projects in the practice: Experiences & perspectives. Room 2

17:00- 17:30 Special Contribution: Fantasy, Fiction and Mathematics
Harry Potter and the secrets of Applied Mathematics: pop culture
in Operations Research classrooms Room 1

17:30-20:00 Social Activity: Knowing the building Felipe Poey
Gathering activity
Building Felipe Poey

Tuesday

9:00-10:00: **Opening Address of 15th IWOR. Room 1**
Plenary Lecture: ***Measures of Risk Aversion and stochastic optimization in the management of natural resources*. Prof. Dr. Antonio Alonso Ayuso. President of ALIO, University Rey Juan Carlos, Spain.**
Introducer: S. Allende

10:00-10:20: Coffee Break

10:20-10:50 **Main Lecture:** Optimality conditions in optimization under uncertainty (Prof. Dr. Christina Tammer, University of Halle-Wittenberg). Introducer: Gemayqzel Bouza
10:50-11:20 **Main Lecture:** Polynomial single-Leader-Multi-Follower games (Prof. Dr. Didier Aussel, Université Perpignan, France). Introducer: Gemayqzel Bouza

11:20-13:00: **Session Optimization & Game Theory. Room 1**

11:20-11:40 Elisenda Molina Centrality versus spreaders: hybrid strategies for
competitive influence diffusion in social networks

11:40-12:00- Conrado M.Manuel A position value for multigraphs

12:00-12:20 Gemayqzel Bouza A mathematical model for designing geo-parks

12:20-12:40 Milan Hladík Stability in multiobjective linear programming with uncertain costs and weights

11:20- 12:40: **Session Mathematical Model in the Economy. Room 2**
Chair: Bengt Wickstrom

11:20-11:40 Pablo Olivares Pricing Techniques in Environmental Finance

11:40-12:00 Alexander Álvarez O-equivalent measures and arbitrage

12:00-12:20 Jaromir Antoch On estimation of quantiles and expectiles and their applications in risk management

12:20-12:40 Bengt- Arne Wickstrom Optimal and politically opportune language policies
for the vitality of minority languages

12:40-14:30 Break
14:30- 15:00 **Main Lecture:** Alternative Topic-Modeling Methods: A Comparison (Prof. Dr. J. Ch. Lamirel, University of Strasbourg). Introducer: Alberto Fernández

15:00-16:50: **Session Machine Learning Room 2**
Chair: J. Ch. Lamirel

15:00-15:20 Manuel Vilas AutoML for Recommender Systems: ranking phase.

15:20-15:40 Ernesto Luis Heterogeneous AutoML Benchmark

15:40-15:50 Coffee Break

15:50-16:10 Lucie Dvořáčková Early detection of potentially influential research articles using text-mining techniques

16:10-16:30 David Guaty Neuronal network for model selection of linear ODEs

16:30-16:50 Víctor M. Cardentey Machine Learning on Graphs for Automatic Data Visualization

15: 00- 16:50- **Session: Epidemiological Models Room 3**
Chair: Aymée Marrero

15:00-15:20 Yanet García Consistency of epidemiological indicator of a disease

15:20-15:40 José A. Mesejo Diffusion of epidemics based on meta-populations with Lagrangian motion

15:40-15:50 Coffee Break

15:50-16:10 Carlos R. Sebrango Sub-epidemic modeling framework for short-term forecasting epidemic waves:application to the covid-19 pandemic in Cuba

16:10-16:30 Jorge Estrada Hybrid model SIT-SIR for the analysis of the effectiveness of the sterilization technique in the control of diseases transmitted by mosquitoes

16:30-16:50 Mario Villalobos Curve Fitting for pandemic data using Generalized Logistic Regression

16:50-17:50: **Session Electronic Poster on Epidemiological Model and related topics Room 3**
Chair: Mario Villalobos

Rolando Uranga Treatment of missing data in vaccines against covid: is it good to use complete cases?

Wilfredo Morales The endemic permanence of COVID-19 in Cuba through a mathematical model

Julián Sarría Bifurcation and pattern formation in a cross-diffusivity epidemic model

Celia T. González Occurrence of Bifurcations in epidemiological models: significance in the prediction of disease transmission

Vivian del Rosario Sistachs Bayesian modeling of parameters of the Sars-Cov-2 epidemic en Cuba

Verónica Medina Qualitative analysis of epidemiological models describing the dynamics of Covid-19 in Cuba.

Airelys Collazo Eagle: Visual interface for solving epidemiological models

14:30 – 17:40: **Tutorial: Short Introduction to change- point detection. Prof. Dr Alain Celisse SAMM. Université Paris 1. Pantheón Sorbonne, Francia. Room 1**
Introducer : Carlos Bouza

Wednesday

9:00-10:00: **Plenary Lecture: Analysis of time-dependent queues with generally distributed retrial**
Times. Prof. Dr. Raik Stolletz, University of Mannheim, Germany. Room 1
Introducer: Alina Ruiz

10:00-10:20: Coffee Break

10:20-10:50 **Main Lecture:** Applying OR technic to improve public services in rural area. (Prof. Dr. Joachim Daduna, Hochschule für Werschaft und Recht Berlin, Germany). Introducer: Alina Ruiz

10:50-12:30 **Session Management Sciences. Electronic Posters Room 1**
Chair: Antonio Batista

Guillermo Brito Aeronautical cybersecurity maturity management´s software using requirements prioritization with fuzzy preferences

Yasser Alfonso M@TUR: Application of Mathematics in Tourism

Joanna Campbell Mobile applications for the collection and reporting of field data on properties in Managua, Nicaragua

Aracelys García Improved GPS positioning on Android

Rodrigo y fernan Sistema para la integración de herramientas para la solución ágil de Problemas de Enrutamiento de Vehículos

Azael Rajadel A mathematical model and an heuristic algorithm for balanced cargo loading

Yeneit Delgado An algorithm to solve Equilibrium Problems with Equilibrium Constraints

Ma. Cristina Mena A review of strategies to reduce waiting times in
Banking institutions.

Yohan Diaz Algorithm for the numerical solution of the heat equation using finite differences

10:20-12:30: **Session Applications in Medicine. Room 2**
Chair: Marta L.Baguer

10:20-10:40 Miguel A. Martinez Temporary evolution of autonomous leukemic clones that compete with hematopoietic cells for niches in the bone marrow.

10:40-11:00 Antolín González Diagnosis and relapse in a model of competition between leukemia clones and healthy cells. Variations in the simulation of the chemotherapy application.

11:00-11:20 Nicole C. Cassimiro
Linear programming and fuzzy optimization in radiotherapy decision making

11:20-11:40 Yunier E. Tejeda Restricted cur matrix decomposition in cancer DNA microarray data classification problems

11:40:12:00 Rocío Ortiz Classification of skin cancer lesions in dermatoscopic images: a proposal

12:00-12:20 Carmen Viada Meta-analysis to evaluate the pharmacokinetic parameters of nimotuzumab

12:20-12:30 Discussion

12:30-14:30 Break

14: 30 – 17:20: **Session Numerical Analysis Room 2**
Chair: Ángela León

14:30-14:50 Loidel Barrera Influence of the parametrization of the physical domain on the numerical solution of Helmholtz equation computed with isogeometric approach

14:50-15:10 Jorge Estrada ConicCurv: a new curvature estimation algorithm for planar polygons

15:10-15:30 Reynaldo Barrera Nonlinear diffusion by regions. KMLS a new version, comparison with other gradient threshold estimations for the diffusion coefficient

15:30-15:40 Coffe Break

15:40-16:00 Damián Valdés Numerical strategy for the solution of the nonlinear system of a Discrete Shapelet Transform II for pattern detection

16:00-16:20 Victoria Hernández Isogeometric approach for the numerical solution of Helmholtz equation in inhomogeneous media

16:20-16:40 Raúl Guinovart Díaz Conductivity properties in 2D fibrous composite with interfacial

resistance

14:30- 17:20: **Session Management Science Room 3**
Chair: J: Daduna

14:30-14:50 Antonio Batista Business Analytics: a novel approach for the application of Operations Research in Cuban firms.

14:50-15:10 Lukas Verveka Understanding the affiliate marketing: a dynamic time series model on e-commerce transactions

15:10-15:30 Ondrej Sokol How store location affects the structure of the customer base?

15:30-15:40 Coffee Break

15:40-16:00 Petra Tomanová Modeling arrival times in queueing systems

16:00-16:20 Vladimir Holy Score-driven models and their use in operations research

16:20:16:40 Lukáš Frýd Measurement unit issues and two-stage DEA

16:40-17:00 Juan Tejada Is it worth it? analysing the merging process of university departments at the Complutense University of Madrid through DEA

17:00-17:20 Dušan Hrabec Heuristic algorithm for time-dependent vehicle routing problem: a waste collection application

17:20-17:40 Mónica Pozo A mixed value for directed multi-communication situations

14:30 – 17:40: Tutorial: Topic modelling methods and applications (Part 1). Prof. Dr. Jean Ch. Lamirel, University of Strasbourg, France). **Room 1**.
Introducer : Alberto Fernández

Thursday

9:00-10:00: **Plenary Lecture: Leveraging the Global Brain Consortium to Harness Open Neuroscience for Research and Public Health. Prof. Dr. Pedro Valdés Sosa, University of Electronic s and Technology of China, Cuban Neuroscience Center, China. Room 1**
Introducer: Lidice Galán

10:00-10:20: Coffee Break

10:20-10:50: **Main Lecture:** Harmonized multinational qEEG norms (HarMNqEEG) (Prof. Dr. Min Li, Clinical Hospital of Chengdu Brain Science Institute, University of Electronic Science and Technology of China, Chengdu, China. **Room 1**. Introducer: Lídice Galán

Session Neurociencias 1. Room 1
Chair: **Victoria Hernández**

10:50-11:10 Ronaldo Garcia Multivariate Intrinsic Local Polynomial Regression on Isometric Riemannian Manifolds: Applications to Positive Definite data.

11:10-11:30 Ania Mesa Nonlinear and nonparametric analysis of causal relationships between different cortical regions

11:30-11:50 Eduardo Martínez Active-set modified Newton-Raphson algorithm for studying the electrophysiological sources of aging-related processes using multiple penalized least-squares models

11:50-12:10 Mayrim Vega
Prediction of age-related changes in gait speed from Electrophysiological Source Imaging estimating by Multiple penalized least squares models.

12:10-12:30 Eduardo Garea-Llano
- Diagnosis of Alzheimer disease evolutionary stage from cross-sectional cognitive data using Deep Neural network

12:40-14:30 Break
14: 30 - **Session Neurosciences 2. Room 2**
Chair: Eduardo Martínez

14:30-14:50 Deirel Paz BigBrain compatible pipeline to facilitate Multilayer Electrophysiological Source Imaging

14:50-15:10 Yanetsy E. Rodríguez Estimating Overlapped Event-Related Response with EM algorithm

15:10-15:30 Osmel José Escalona Mir Comparative study of two denoising techniques for saccades processing

15:30-15:40 Coffee Break

15:40-17:40 Poster session

Cristóbal Yera Gálvez Mapping of neural activity in neurodegenerative diseases through a next-generation neural field model

Marlis Ontivero-Ortega Default Mode Network emerges from the individual Human Connectome using a model of information flow in the brain.

Ariosky Areces-González Measuring the true localization and leakage distortions of inverse solutions for low-density EEG

Yeslaine Hernández Modeling neural activity of Caenorhabditis elegans through neural message passing.

Anisleidy González Mitjans Integrating semi-analytically and efficiently extended Jansen and Rit Neural Mass Models with distributed conduction delays

Ying Wang The EEG Xi (aperiodic) spectral component, but not the Alpha rhythm, is linear and Gaussian

14:30-16:20: **Session Environment Problems & Human Welfare. Room 3**
Chair: Ridelio Miranda

14:30-14:50 Clement Larouche Pesticides concentration monitoring from various heterogeneous sources of information.

14:50-15:10 Fabio Augusto Fortunato Estimation of manning coefficients with nonlinear least squares

15:10-15:30 Pedro Roura Methodology of maximun wind and probabilities of hurricane impact in Cuba,Casablanca weather station,
1909-2022

15:30-15:40 Coffee Break

15:40-16:00 Javier Trejos Clustering Rainfall by Simulated Annealing for Histogram Symbolic Data

16:00-16:20 Miguel Santana Socio-demographical pattern from an spatial perspective in Cienfuegos province

16:20-16:40 Esteban F. Genes Understanding the suicide dynamics in Medellín: a
descriptive approach using data analytics

16:40-17:00 Ridelio Miranda Mathematical modeling of the solid waste collection problem in the city

of Cienfuegos

14:30 – 1**7:40: Tutorial: Topic modelling methods and applications (Part 2). Prof. Dr. Jean Ch. Lamirel, University of Strasbourg, France). Room 1**
Introducer: Alejandro Mesejo)

Friday

9:00-10:00: ***Plenary Lectu*Bayesian Analysis of networks for the analysis of the last French presidential election. Prof. Dr. Pierre Latouche, Lab. LMBP, Universite Clermont Auvergne, France.**
Introducer: Carlos Bouza

10:00-10:20: Coffee Break

10:20-10:50: **Main Lecture:** Sparse and group sparse clustering for mixed data. Prof. Dr. Marie Cottrell (Lab. SAMM, University Paris 1, Pantheón Sorbonne, France)
Introducer: Marie Cottrell

10:50-12:20: **Session Mathematical Statistics. Room 1**
Chair: Marie Cottrell

10:50-11:10 Carlos Bouza Estimation of Differences-in-Differences in the presence of nonresponse in a random sample

11:10-11:30 Pablo O. Juárez A quantitative randomized response technique with three scrambling reports. Simulation with data of illicit crops in Guerrero, Mexico and first sexual intercourse

11:30-11:40 Piscolabis

11:40-12:00 Yanet García Bayesian structural time series in the inference of causal impact: A bibliometric analysis

12:00-12:20 Eduardo Pizza Construction of balanced and incomplete block designs

12:20-13:20: Close Plenary Lecture: Sparse change-point detection in high dimension and regularization.
Prof. Dr. Alain Celisse, Lab. SAMM. University Paris 1, Pantheón Sorbonne, France. Room 1
Introducer: S. Allende

13:20-15:30 Break

15:30 Close Session of the Convention Saber UH