Program: VI WCDANM | 2019

Thursday (June 27 th)

13:30| Registration

14:00| Open Ceremony

14:15| Plenary Session

Room 6.01	Chair: Fernando Carapau
Delfim Torres (CIDMA, University of Aveiro, Portugal)	Numerical Methods for Fractional Optimal Control Problems

15:00| Plenary Session

Room 6.01	Chair: Luísa Pereira
Ivette Gomes (University of Lisboa, Portugal)	Approximations for Extremes and Bounds for the Reliability of Large Systems

15:45| Coffee Break and Poster Session

16:00 - 17:00| Parallel Sessions

Room 6.01	**R1** **Chair: Feliz Minhós**
Carlos Ramos	Complex movement: symbolic dynamics for interacting agents
Sandra Vaz	Control Strategies for an epidemiologic model with vaccination
Carlos Fernandes	Performance analysis of different kernels on SVM classification using different feature selection methods on Parkinsonian gait
Feliz Minhós	Sufficient conditions for heteroclinic solutions of Phi-Laplacian generalized Differential equations

Room 6.02	**R2** **Chair: Manuel Branco**
Paulo Rebelo	An optimal control problem of a non autonomous model for an outbreak of a Zombie infection
José Carlos Aleixo	State-space representation of MIMO 3-periodic behaviors
Manuel Branco	Dense numerical semigroups

Room 6.03	**S12 - Statistical Modeling and Applications** **Chair: Swati DebRoy**
Luís Grilo	The impact of psychosocial stressors on college students' well-being. A case study with application of PLS-SEM
Maria Clara Grácio	Latin Text Authorship using Dynamical Measurements of Complex Networks
Swati DebRoy	Mathematical Modeling Applied to Childhood Obesity

17:30| Welcome Reception at the City Hall and walk through the historic center to see Urban Art.

Friday (June 28 th)

08:30| Registration
09:00 - 10:00 | Parallel Sessions

Room 6.01	**S3.1 - Optimal control theory and applications** **Chair: Cristiana Silva**
Somayeh Nemati Foumeshi	Numerical solution of variable-order fractional optimal control-affine problems using Bernoulli polynomials
Ana Pedro Lemos Paião	Curtail the spread of cholera outbreaks through optimal control theory
Faïçal Ndaïrou	Ebola modeling and optimal control with vaccination constraints
Luís Machado	Generating trajectories in fluid environments

Room 6.02	**R3** **Chair: João T. Mexia**
Dário Ferreira	Mixed models with random effects with known dispersion parameters
Sandra S. Ferreira	Tests for Multiple Additive Models
Célio Marques	Statistical analysis of reading results with Letrinhas software. A case study in primary schools in Portugal
João T. Mexia	Confidence Ellipsoids for Additive Models

Room 6.03	**S7 - Dynamics and games** **Chair: Alberto Pinto**
João Paulo Almeida	Firm Competition on a Hotelling Network
José Martins	A numerical characterization of the reinfection threshold
Renato Soeiro	Pure price duopoly equilibria for discrete preferences
Alberto Pinto	Learning strategies in the Ignorant - Believer - Unbeliever rumor spreading model

10:00| Plenary Session:

Room 6.01	**Chair: Luís Grilo**
Padmanabhan Seshaiyer (George Mason University, USA)	Computational modeling, analysis and numerical methods for biological, bio-inspired and engineering systems

10:45| Coffee Break and Poster Session

11:00| Round table about special issues in scientific journals (Room 6.01): **Milan Stehlik** (Associate Editor)

11:30 - 12:45| Parallel Sessions

Room 6.01	**S1 - Integral and Differential Equations & Applications** **Chair: M. Manuela Rodrigues**
Nelson Vieira	Time-fractional diffusion-wave equation
Milton Ferreira	Time-fractional Borel-Pompeiu formula and hypercomplex fractional operator calculus
Anabela Silva	Convolution theorems for oscillatory integral transforms on the positive half-line
Rita Guerra	New convolutions and their applicability to integral equations of Wiener-Hopf plus Hankel type
M. Manuela Rodrigues	Fundamental solutions of a time-fractional equation

Room 6.02	**S9 - Dental Research Applications of Statistical Methods** **Chair: José A. Lobo Pereira**
Rui Sousa	Characterization of a Plaque-Disclosing Test
Inês Oliveira	Estimation of the Minimum Interval Between Orthopantomography to Detect Early Variations of Bone Level Through Logistic Regression Classifiers
Luzia Mendes	MANOVA Applied to a Randomized, Crossover, Double-Blind Study
José A. Lobo Pereira	Does Hyaluronan Application as Adjunct of Non-Surgical Periodontal Therapy Contribute to Periodontal Pocket Reduction? A Meta-Analysis

Room 6.03	S5 - Mathematics, Education, Technology, Business and Society **Chair: Cristina Dias**
Maria I. Borges	Statistical Modelling of Portuguese Granites Response to Acid Attak: the case of RA and SPI Granites
Carla Santos	Problem posing tasks in the learning of probabilities
Maria Varadinov	Adaptation of Higher Education to the Digital generation / AHEAD
João Romacho	Income, consumption and saving of Portuguese households in numbers – An update
Cristina Dias	The use of information and communication technologies in the teaching-learning process in higher education: a case study

12:45| Lunch

14:00 – 18:00| Social Program - Visit to the Belmonte Museums. Tasting Kosher products.

20:30| Conference Dinner - Hotel Puralã

Saturday (June 29 th)

09:00| Registration

09:30 - 10:30| Parallel Sessions

Room 6.01	S3.2 - Optimal control theory and applications **Chair: Cristiana Silva**
M. Teresa T. Monteiro	Can malware propagation be softened via optimal control theory and mathematical epidemiology?
Nuno R. O. Bastos	Optimality conditions for variational problems containing a derivative with a non-singular kernel
Luís Tiago Paiva	Shortest Paths for the Optimal Reorganization of a Nonholonomic Multi-Vehicle Formation
Amélia C.D. Caldeira	Replanning with fine meshes in irrigation systems

Room 6.02	S10.1 - Quantitative Methods for Decision Making **Chair: Eliana Costa e Silva**
Arminda Manuela Gonçalves	State Space Modeling in Online Water Quality Monitoring
Filipe Ferraz	Minimize the production of scrap in the extrusion process
Sofia Almeida	Optimization of Aluminium Profiles Production Planning: a preliminary study
Filomena Teodoro	Evaluating Zika literacy of emboarded staff from Portuguese Navy

Room 6.03	S6 - Linear Inference and Applications **Chair: Manuela Oliveira**
Sergey Frenkel	On a priory estimation of random sequences predictability
Cristina Dias	Rank one symmetric stochastic matrices
Carla Santos	Joint analysis of COBS
Luís António Pinto	A Spatio-temporal model for burn severity data

10:30| Plenary Session

Room 6.01	**Chair: Luís Grilo**
Leonid Hanin (Idaho State University, USA)	Mathematical Discovery of Natural Laws in Biomedical Sciences: A New Methodology with Application to the Effects of Primary Tumor and Its Resection on Metastases

11:15| Coffee Break and Poster Session

11:30 - 12:45| Parallel Sessions

Room 6.01	S2 - Theory and Applications of Stochastic Differential Equations **Chair: Nuno Brites**
Carlos Braumann	Harvesting models in random environments with and without Allee effects. I. General models and their properties
Nuno Brites	Harvesting models in random environments with and without Allee effects. II. Logistic type models and profit optimization
Paula Milheiro de Oliveira	Parameter estimation of a piecewise linear stochastic differential system: the case of a bilinear oscillator subject to random loads
Manuel L. Esquível	On a SDE coupled system for commodity pricing
José Carlos Dias	A note on the loss of the martingale property under the CEV process

Room 6.02	S11 - Mathematical and Statistical Modeling **Chair: Milan Stehlík**
Oumaima Mesbahi	Study of an Enhanced Total Least Squares Algorithm for Nonlinear Models
Ana Nata	An alternative algorithm for the inverse numerical range problem
Maria Soares	Some new aspects on the geometry of Krein spaces numerical ranges
Milan Stehlik	On modeling of asymmetric dependencies with ecological and medical applications

Room 6.03	S4 - Numerical Methods and Applications in Medicine **Chair: Telma Santos/Jorge Tiago**
Cristiana Silva	Optimal control applied to a HIV delayed model
Fernando Carapau	Three-dimensional velocity field for blood flow using the power-law viscosity function
Marília da Conceição Pires	An alternative viscoelastic model for blood flow simulation
Oualid Kafi	On the mathematical modeling of leukostasis
Iolanda Velho	Near-wall region analysis in intracranial aneurysms

12:45| Lunch

14:00 - 15:00| Parallel Sessions

Room 6.01	S8 - Orthogonal polynomials and applications **Chair: Maria das Neves Rebocho/Edmundo Huertas Cejudo**
Fonseca André	Divided-difference operators from the geometric point of view
Carlos Hermoso	Relative asymptotics of Laguerre polynomials modified with an infinite number of discrete mass points
Alberto Lastra	q-analog of Laplace transform. Towards q-difference orthogonal polynomials
Edmundo Huertas Cejudo	Analytic properties of discrete Sobolev--type ortogonal polynomials in non uniform (SNUL) and q-lattices

Room 6.02	R4 **Chair: Gastão Bettencourt**
Sérgio Nunes Mendes	Semigroup homomorphism generated by quasimorphisms
Alberto C. Mulenga	The role of supply, demand and external shocks in an open economy: The case of Mozambique
Gastão Bettencourt	Metric functionals: a new class of examples

Room 6.03	S10.2 - Quantitative Methods for Decision Making **Chair: Aldina Isabel Correia**
Ana Isabel Borges	On Different Time-Scales in Firm Financial Distress Probability Modelling
Eliana Costa e Silva	Optimization of the Grapes Reception
Aldina Isabel Correia	Entrepreneurship Conditions for Knowledge and Technology Transfer

15:00| Coffee Break and Poster Session

15:15| Closing Ceremony

Poster Session – Hall (available during the days of the VI WCDANM)

Cristina Dias, Carla Santos, Isabel Borges and João T. Mexia	Operators of vec type
Maria I. Borges, Cristina Dias, Maria J. Varadinov and João Romacho	The Brian Tracy Method Applied to Students of Higher Education
Domingos Silva and Manuela Oliveira	Addressing risk to physical fitness with factor analysis
A. Manuela Gonçalves, Susana Lima and Marco Costa	A comparative study of exponential smoothing models for retail sales forecasting
Fernando Carapau and Paulo Correia	Numerical simulations of a third-grade fluid flow on a tube through a contraction
Patrícia Antunes, Sandra S. Ferreira, Dário Ferreira and João T. Mexia	Results Related to Higher-Order Moments and Cumulants
Isaac Akoto, Dário Ferreira, Gracinda Guerreiro, Sandra S. Ferreira and João T. Mexia	Discrimination Rules: An application to Discrete variables
Dina Salvador, Sandra Monteiro and Sandra Nunes	Big Data and Ordinal Logistic Regression
Luísa Novais and Susana Faria	Fitting mixtures of linear mixed models with the EM, CEM and SEM algorithms: a simulation study
Oussama Rida, Ahmed Nafidi and Boujemâa Achchab	Stochastic diffusion process Based on generalized Goel-Okumoto curve
Alfredo Carvalho and João Ramalho	Voronoi volumes by stochastic sampling: applications on lipid membrane studies
Nadab Jorge, Filipe Marques, Carlos A. Coelho and Célia Nunes	Sum of a random number of independent and identically distributed random variables: an application to aggregate claims
Susana Faria and Domingos Paulo	Dealing with overdispersed count data
Susana Faria and Manuel J. Castigo	Portuguese student's performance in mathematics
Anacleto Mário, Célia Nunes, Dário Ferreira, Sandra S. Ferreira and João T. Mexia	Mixed effects models where the sample sizes are Binomial distributed
Amílcar Oliveira and Teresa Oliveira	Statistical Challenges in Big Data and Data Science