StatMod2023

Statistical Modeling with Applications

September 29-30 2023, Bucharest

PROGRAM

ATTENTION:

The times in this program are Romanian time zone, that is the EET time https://time.is/EET !

Venue: Hybrid, Online (On Zoom) and at Casa Academiei Române, Calea 13 Septembrie nr 13, Bucureşti, România, at ISMMA and INCE

Rooms:

P2.363, Room 1 (INCE, groundfloor, Intrarea Calea Rahovei 47-53, sala de marmura, aripa Vest)

P2.363, Room 2 (INCE, groundfloor, Intrarea Calea Rahovei 47-53, sala de marmura, aripa Vest)

Onicescu Council room (ISMMA, 4th floor)

ZOOM connection information

P2.363, Room 1
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https://us06web.zoom.us/j/87355046967?pwd=Xv0orsak8MHEzd8r7qZtoEPbdau57D.1

Meeting ID: 873 5504 6967
Passcode: 342913

Onicescu
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https://ase.zoom.us/j/84065300918?pwd=MmJtYng5MGR0STIyQzBPVXBJbko4QT09

Meeting ID: 840 6530 0918
Passcode: 608529

Friday September 29, 2023

09:00-09:30 **Opening Remarks and Welcome**
Room: **P2.363, Room 1**

SESSION 1

Chairman: Vasile PREDA (ISMMA & Center for Demographic Research, INCE & Univ. of Bucharest, Romania) and Vlad Stefan BARBU (LMRS, Univ. of Rouen–Normandy, France & INCE, Center for Demographic Research, Romania)
Room: **P2.363, Room 1**

09:30-10:00
Alex KARAGRIGORIOU (Univ. of the Aegean, Greece)
A general modified family of divergence measures for estimating and testing purposes
joint work with Christos MESELIDIS

10:00-10:30
Yousri SLAOUI (LMA, Univ. of Poitiers, France)
Mixture of longitudinal factor analyzers and their application to chronic pain
joint work with Amine OUNAJIM (PRISMATICS Lab, Poitiers Univ. Hospital & LMA, Univ. of Poitiers, France), Pierre-Yves LOUIS (Institut Agro Dijon & IMB, Univ. Bourgogne Franche-Comté, France), Maxime BILLOT (PRISMATICS Lab, Poitiers Univ. Hospital, France), Denis FRASCA (Department of Anaesthesiology and Critical Care, Poitiers Univ. Hospital & INSERM, Univ. of Nantes and Tours, France), Philippe RIGOARD (PRISMATICS Lab & Department of Spine, Neuromodulation and Handicap, Poitiers Univ. Hospital, France)

10:30-11:00
Romain AZAÏS (INRIA Lyon, France)
Estimation in spinal Galton-Watson tree
joint work with Benoît HENRY (IMT Lille Douai, France)

11:00-11:30 COFFEE BREAK

SESSION 2A

Chairman: Alex KARAGRIGORIOU (Univ. of the Aegean, Greece)
Room: **P2.363, Room 1**

11:30-12:00

Ciprian A. TUDOR (Univ. of Lille, France)

Estimation for the stochastic wave equation with space-time white noise

12:00-12:30

Oana LUPAŞCU-STAMATE (ISMMA, Romania)

Asymptotic behaviour of a one-dimensional avalanche model through a particular stochastic process
joint work with Madalina DEACONU (INRIA Nancy, France)

12:30-13:00

Raluca VERNIC (Ovidius Univ. of Constanta, Romania)

Extending composite distributions to the bivariate setting
joint work with Catalina BOLANCÉ (Univ. of Barcelona, Spain)

SESSION 2B: Demography 1

Chairman: Chairman: Carmen Adriana GHEORGHE (Center for Demographic Research, INCE, Romania & School of Advanced Studies of the Romanian Academy, Romania)

Room: **P2.363, Room 2**

11:30-11:50

Florin Marius PAVELESCU (Institute of National Economy, Center for Macro Modelling, INCE, Romania)

On the algebraical properties of the intercept of the simple linear regressions. Implications for estimation methodology

11:50-12:10

George GEORGESCU (INCE, Romania)
Labour market shortages in Romania. Long-term forecast
joint work with Luminița CHIVU (INCE, Romania), Sorin-Marius DINU (INCE, Romania)

12:10-12:30

Sorin AVRAM (Center for Demographic Research, INCE, Romania & Univ. of Craiova, Romania)
The relationship between demography and economic growth within the urban poles of economic growth. A perspective on the evolution models in the context of the adoption of AI technologies
joint work with Laura ANGHEL (INCE, School of Advanced Studies of the Romanian Academy, Romania)

12:30-12:50

Steliana RODINO (ICEADR, INCDSB, Romania)
Applications of system dynamics models for agricultural sector
joint work with Ruxandra POP (ICEADR, Romania)

13:00-15:00 LUNCH

SESSION 3A

Chairman: Emmanouil-Nektarios KALLIGERIS (LMRS, Univ. of Rouen–Normandy, France)
Room: **Onicescu**

15:00-15:20
Konstantinos FLORAKIS (MICS, CentraleSupélec, Univ. Paris-Saclay, France & National and Kapodistrian Univ. of Athens, Greece)
Statistical techniques for predicting water consumption in a hydroponic greenhouse: a case study on tomato plants
joint work with Samis TREVEZAS (National and Kapodistrian Univ. of Athens, Greece), Véronique Le CHEVALIER-LETORT (MICS, CentraleSupélec, Univ. Paris-Saclay, France)

15:20-15:40

Omar KASSI (ENSAI Rennes & CREST, France)
Regularity estimation in multivariate functional data
joint work with Nicolas KLUTCHNIKOFF (IRMAR, Rennes Univ., France), Valentin PATILEA (ENSAI Rennes & CREST, France)

15:40-16:00
Anişoara RĂDUCAN (ISMMA, Romania)
A new order relation between random variables applied to an investment problem
joint work with Raluca VERNIC (Ovidius Univ. of Constanta, Romania), Gheorghiţă ZBĂGANU (ISMMA, Romania)

16:00-16:20
Emmanouil-Nektarios KALLIGERIS (LMRS, Univ. of Rouen–Normandy, France)
Exploring visual-motor skill acquisition dynamics in climbing via drifting Markov models
joint work with Vlad Stefan BARBU (LMRS, Univ. of Rouen–Normandy, France & Center for Demographic Research, INCE, Romania), Guillaume HACQUES, Ludovic SEIFERT (STAPS, Univ. of Rouen–Normandy, France), Nicolas VERGNE (LMRS, Univ. of Rouen–Normandy, France)

SESSION 3B: Applied stochastic models

Chairman: Guglielmo D'AMICO (Univ. "G. d'Annunzio" of Chieti-Pescara, Italy)

Room: **P2.363, Room 1**

15:00-15:20
Bice DI BASILIO (Univ. "G. d'Annunzio" of Chieti-Pescara, Italy)
A comparative econometric study of liquidity risk via drawdown-based risk measures
joint work with Guglielmo D'AMICO (Univ. "G. d'Annunzio" of Chieti-Pescara, Italy),
Filippo PETRONI (Marche Polytechnic Univ. of Ancona, Italy)

15:20-15:40
Riccardo DE BLASIS (Marche Polytechnic Univ. of Ancona, Italy)
General state space multivariate Markov chain: a mixture transition distribution approach

15:40-16:00
Salvatore VERGINE (Univ. "G. d'Annunzio" of Chieti-Pescara, Italy)
Investment valuation for energy communities
joint work with Riccardo DE BLASIS, Graziella PACELLI (Marche Polytechnic Univ. of Ancona, Italy)
16:00-16:20
Guglielmo D'AMICO (Univ. "G. d'Annunzio" of Chieti-Pescara, Italy)
On some measures of poverty dynamics
joint work with Riccardo DE BLASIS (Marche Polytechnic Univ. of Ancona, Italy),
Fulvio GISMONDI ("Guglielmo Marconi" Univ. of Rome, Italy)

SESSION 3C: Demography 2

Chairman: Carmen Adriana GHEORGHE (Center for Demographic Research, INCE & School of Advanced Studies of the Romanian Academy, Romania)

Room: **P2.363, Room 2**

15:00-15:20
Elena Corina CIPU (CiTi, National Univ. of Science and Technology Politehnica Bucharest & INCE, Center for Demographic Research, Romania)
Demographic approaches by Monte Carlo modeling
joint work with Ruxandra Ioana CIPU, Ştefania Maria MICHNEA (CiTi, National Univ. of Science and Technology Politehnica Bucharest, Romania)

15:20-15:40
Carmen Adriana GHEORGHE (Center for Demographic Research, INCE & School of Advanced Studies of the Romanian Academy, Romania)
Modeling the bidirectional relationship between Gini index and ecosystem services

15:40-16:00
Mihaela Georgiana OPREA (Center for Demographic Research, INCE & School of Advanced Studies of the Romanian Academy, Romania)
Labor market and demographic changes: the challenges of an active aging population
joint work with Mihaela Irma VLĂDESCU (Center for Demographic Research, INCE & School of Advanced Studies of the Romanian Academy, Romania)

16:00-16:20

Carmen Adriana GHEORGHE (Center for Demographic Research, INCE & School of Advanced Studies of the Romanian Academy, Romania)
Regional disparities and determinants of low birth rates in Romania
joint work with Mihaela Hrisanta MOSORA (Bucharest Academy of Economic Studies, Romania), Alina RĂDOI (Center for Demographic Research, INCE, Romania)

16:20-17:00 COFFEE BREAK

SESSION 4A: Some recent advances on optimization and applications

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Chairman: Ion NECOARA (Univ. Politehnica of Bucharest & ISMMA, Romania)
Room: **Onicescu**

17:00-17:20
Ernö Robert CSETNEK (University of Vienna, Austria)
Second order dynamics with closed-loop damping
joint work with Hedy ATTOUCH (University Montpellier, France), Radu Ioan BOȚ (University of Vienna, Austria)

17:20-17:40
Flavia CHOROBURA (Univ. Politehnica of Bucharest, Romania)
Coordinate descent methods beyond smoothness and separability
joint work with Ion NECOARA (Univ. Politehnica of Bucharest & ISMMA, Romania)

17:40-18:00
Yassine NABOU (Univ. Politehnica of Bucharest, Romania)
Moving higher-order Taylor approximation method for smooth problems
joint work with Ion NECOARA (Univ. Politehnica of Bucharest & ISMMA, Romania)

18:00-18:20
Alexandru POPA (Univ. Politehnica of Bucharest, Romania)
IP solutions for international kidney exchange programmes
joint work with Radu-Stefan MINCU (Univ. Politehnica of Bucharest, Romania), Péter BIRÓ (Institute of Economics, Hungarian Academy of Sciences & Corvinus Univ. of Budapest, Hungary), Márton GYETVAI (Institute of Economics, Hungarian Academy of Sciences & Corvinus Univ. of Budapest, Hungary), Utkarsh VERMA (IIT, India)

18:20-18:40
Adrian VIOREL (Babes-Bolyai Univ., Romania)
On a continuous dynamical system version of the nonlinear conjugate gradient system

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SESSION 4B: Stochastic models in finance and machine learning

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Chairman: Ionel POPESCU (Univ. of Bucharest & IMAR, Romania)
Room: **P2.363, Room 1**

17:00-17:20
Ioana Antonia BRANEA (Transilvania Univ. of Brasov, Romania)
Missing values imputation in the SEPHAR IV echocardiographic study
joint work with Antonia Teodora MOHAIU (Univ. Politehnica of Bucharest, Romania), Lucian Mihai ITU (Transilvania Univ. of Brasov, Romania), Maria DOROBANTU, Cosmin COJOCARU, Oana Florentina FRONEA, Aura Elena VIJIIAC (Univ. of Medicine and Pharmacy "Carol Davila", Romania), Anamaria VIZITIU (Transilvania Univ. of Brasov, Romania)

17:20-17:40
Vlad Raul CONSTANTINESCU (Univ. of Bucharest & ISMMA, Romania)
Interpolation property of shallow neural networks
joint work with Ionel POPESCU (Univ. of Bucharest & IMAR, Romania)

17:40-18:00
Mihaela-Adriana NISTOR (Univ. of Bucharest, Romania)
Risk measures
joint work with Ionel POPESCU (Univ. of Bucharest & IMAR, Romania)

Saturday September 30, 2023

SESSION 5A: Statistical and Probabilistic Models and Methods with Applications

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Chairman: Alex KARAGRIGORIOU (Univ. of the Aegean, Greece)
Room: **Onicescu**

09:00-09:20
Andreas MAKRIDES (Univ. of the Aegean, Greece)
Competing risks modelling through multistate systems
joint work with Theodora DIMITRAKOPOULOU, Alex KARAGRIGORIOU (Univ. of the Aegean, Greece), Ilia VONTA (National Technical Univ. of Athens, Greece)

09:20-09:40
Spiros DAFNIS (Univ. of Piraeus & Univ. of the Aegean, Greece)
Improved Shewhart-type control charts with supplementary runs rules
joint work with Theodoros PERDIKIS (Athens Univ. of Economics and Business, Greece), Markos V. KOUTRAS (Univ. of Piraeus, Greece)

09:40-10:00
Charalampos D. PASSALIDIS (Univ. of the Aegean, Greece)
Background risk model in presence of heavy tails under dependence
joint work with Dimitrios G. KONSTANTINIDES (Univ. of the Aegean, Greece)

10:00-10:20
Christina PARPOULA (Panteion Univ. of Social and Political Sciences, Greece)
Multiple change-point google trends analysis for detecting mental health issues and needs in Greece
joint work with Fotios ANAGNOSTOPOULOS (Panteion Univ. of Social and Political Sciences, Greece)

SESSION 5B

Chairman: Vasile PREDA (ISMMA & Center for Demographic Research, INCE & Univ. of Bucharest, Romania) and Vlad Stefan BARBU (LMRS, Univ. of Rouen–Normandy, France & Center for Demographic Research, INCE, Romania)
Room: **P2.363, Room 1**

09:00-09:20
Bojana MILOŠEVIĆ (Univ. of Belgrade, Serbia)
On the nonparametric change-point detection for some complex data types

09:20-09:40
Roman TENZIN (LMRS, Univ. of Rouen-Normandy, France)
Truncated sequential change-point detection for Markov chains with applications in the epidemic statistical analysis
joint work with Evgenii PCHELINTSEV (International Laboratory of Statistics of Stochastic Processes and Quantitative Finance, National Research Tomsk State Univ., Russia), Serguei PERGAMENCHTCHIKOV (LMRS, Univ. of Rouen-Normandy, France)

09:40-10:00
Jingqi ZHANG (UTT & École Centrale Marseille & LMAC, UTC, France)
A semi-Markov model with geometric renewal processes
joint work Mitra FOULADIRAD (École Centrale Marseille, France), Nikolaos LIMNIOS (LMAC, UTC, France)

10:00-10:20
Eirini VOTSI (LMM, Le Mans Univ., France)
On the moments of the time to failure for semi-Markov chains
joint work with Mohamed HAMDAOUI (Lorraine Univ. and Arts et Métiers ParisTech, France), Samis TREVEZAS (National and Kapodistrian Univ. of Athens, Greece)

10:20-10:40

Hajar RAILLANI (ENSA of El Jadida, Morocco & LMN, INSA Rouen Normandy, France)
Disaster modelling with hidden Markov model: application to floods
joint work with Lamia HAMMADI (LabSIPE, ENSA of El Jadida, Morocco & LMN, INSA Rouen Normandy, France), Vlad Stefan BARBU (LMRS, Univ. of Rouen–Normandy, France & INCE, Center for Demographic Research, Romania), Abdessamad EL BALLOUTI (LabSIPE, ENSA of El Jadida, Morocco), Eduardo SOUZA DE CURSI (LMN, INSA Rouen Normandy, France)

10:40-11:00 COFFEE BREAK

SESSION 6: Model specification testing and related concepts

Chairman: Bojana MILOŠEVIĆ (Univ. of Belgrade, Serbia)
Room: **P2.363, Room 1**

11:00-11:20
Danijel ALEKSIĆ (Univ. of Belgrade, Serbia)
On the asymptotic properties of non-degenerate U-statistics in the presence of MCAR data
joint work with Marija CUPARIĆ, Bojana MILOŠEVIĆ (Univ. of Belgrade, Serbia)

11:20-11:40
Daniel GAIGALL (Aachen Univ. of Applied Sciences, Germany)
On the applicability of several tests to models with not identically distributed random effects

11:40-12:00
Apostolos BATSIDIS (Univ. of Ioannina, Greece)
Size biased samples when modeling extreme phenomena
joint work with Polychronis ECONOMOU (Univ. of Patras, Greece), George TZAVELAS (Univ. of Piraeus, Greece)

12:00-12:20
Nikolay NIKOLOV (Institute of Statistics, RWTH Aachen Univ., Germany)
Likelihood-ratio tests for rank data models

12:20-12:40
Yvik SWAN (ULB, Belgium)
Independent additive weighted bias distributions and associated goodness-of-fit tests
joint work with Bruno EBNER (Karlsruhe Institute of Technology, Germany)

13:00-15:00 LUNCH

SESSION 7A

Chairman: Silvia DEDU (Bucharest Univ. of Economic Studies & Center for Demographic Research, INCE, Romania)
Room: **Onicescu**

15:00-15:20
Răzvan-Cornel SFETCU (Univ. of Bucharest, Romania)
Generalizations of Tsallis entropy
joint work with Vasile PREDA (ISMMA & Center for Demographic Research, INCE & Univ. of Bucharest, Romania)

15:20-15:40
Doru CONSTANTIN (The National Univ. of Science and Technology Politehnica Bucharest, Pitesti University Centre, Romania)
Cumulative paired ϕ-negentropy in ICA model estimation
joint work with Costel BĂLCĂU (The National Univ. of Science and Technology Politehnica Bucharest, Pitesti University Centre, Romania)

15:40-16:00
Silviu Laurențiu VASILE (ISMMA & Univ. of Bucharest, Romania)
Network anomaly detection based on traffic analysis

16:00-16:20
Silvia DEDU (Bucharest Univ. of Economic Studies & Center for Demographic Research, INCE, Romania)
A new estimation approach to loss models and survival models using general information measures
joint work with Vasile PREDA (ISMMA & Center for Demographic Research, INCE & Univ. of Bucharest, Romania), Muhammad SHERAZ (Institute of Business Administration Karachi, School of Mathematics and Computer Science, Pakistan)

SESSION 7B

Chairman: Gheorghiţă ZBĂGANU (ISMMA, Romania) and Emmanouil-Nektarios KALLIGERIS (LMRS, Univ. of Rouen–Normandy, France)
Room: **P2.363, Room 1**

15:00-15:20
Gheorghiţă ZBĂGANU (ISMMA, Romania)
Inequality indices, compatibility conditions

15:20-15:40
Dan GOREAC (Shandong Univ. Weihai, China & Univ. Gustave Eiffel, France)
Linearisation and dual algorithms in reinsurance
joint work with Florin AVRAM (Pau Univ., France), Juan LI (Shandong Univ., China),

Boxiang XU (Shandong Univ., China), Xiaoxi WU (Shantou Univ., China)

15:40-16:00
Ioana CIOTIR (LMI, INSA Rouen Normandy, France)
The stochastic fast logarithmic equation in Rd with multiplicative Stratonovich noise
joint work with Reika FUKUIZUMI (Research Center for Pure and Applied Mathematics, Tohoku University, Japan), Dan GOREAC (Shandong Univ. Weihai, China & Univ. Gustave Eiffel, France)

16:00-16:20
Adina OPRIȘAN (New Mexico State University, USA)
Functional limit theorems for a time-changed Brownian motion

Room: **P2.363, Room 1**

16:30 **Closing** of the Workshop