ECSO-CMS 2022
European Conference on Stochastic Optimization
Computational Management Science

Scientific Program

Wednesday, 29 June 2022

8:30 - 9:00	**Registration**			
9:00 - 9:30	**Openings - Aula Magna (11A)** Diana Barro, Martina Nardon, Stein-Erik Fleten Fabrizio Marrella (Vice Rector for International Relations and International Cooperation) Michele Bernasconi (Department of Economics Director)			
09:30-10:30	**Plenary Session 1 - Aula Magna (11A)** **Daniel Kuhn - École Polytechnique Fédérale de Lausanne** On Robust Optimization, Blackouts and the Law			
10:30 - 10:50	**Coffee break**			
10:50 - 12:30	**Parallel Sessions (4 x 25')**			
	Aula Magna (11A)	**Aula 6A**	**Aula 4A**	**Aula 5A**
	Organized Session - Chance-constrained games - Chair: A. Lisser	**Organized Session - Power systems - Chair: H. Zhang and A. Tomasgard**	**Environmental and climate risk - Chair: D. De Giovanni**	**Power system planning and operation under uncertainty - Chair: P. Beraldi**
	"An equivalent mathematical program for general-sum games with random constraints", Vikas Vikram Singh, Abdel Lisser and Monika Arora	"Trading strategies for battery storages in reserve and spot markets under uncertainty", **Emil Kraft**, Steffen J. Bakker, Stein-Erik Fleten and Wolf Fichtner	"Stochastic analysis of the performance of national industrial sectors facing the environmental measures", **František Zapletal** and Markéta Šindlerová	"Day-ahead and intra-day co-optimization of a power unit under uncertainty", **Adrien Le Franc**, Michel De Lara, Jean-Philippe Chancelier and Pierre Carpentier
	"Chance constrained game problem with mixture of elliptical distribution", Shen Peng, Vikas Vikram Singh and **Abdel Lisser**	"Achieving emission-reduction goals: long-term power-system expansion under short-term operational uncertainty", Tuomas Rintamaki, **Fabricio Oliveira**, Afzal S. Siddiqui and Ahti Salo	"A learning exercise in modelling climate-related risks in insurance industry: exploratory scenarios", Maria Carannante and **Valeria D'Amato**	"A MIP approach to tackle the Optimal Power Flow problem with probabilistic constraints", **Concepción Domínguez**, Álvaro Porras Cabrera, Juan Miguel Morales González and Salvador Pineda
	Random games under elliptically distributed dependent joint chance constraints, Abdel Lisser, Vikas Vikram Singh and Hoang-Nam Nguyen	"Investment planning of multi-region power systems with uncertainty using stabilised Benders decomposition with adaptive oracles", **Hongyu Zhang**, Ken McKinnon, Rodrigo Garcia Nava, Nicolò Mazzi and Asgeir Tomasgard	"Optimization in carbon emissions markets", **Jörgen Blomvall**	"A bilevel framework for decision-making under uncertainty with contextual information", **Miguel Angel Muñoz**, Salvador Pineda and Juan Miguel Morales
	"Joint chance-constrained Markov decision processes", **V Varagapriya**, Vikas Vikram Singh and Abdel Lisser	"Stochastic programming approach to electric vehicle charging on a university campus", Pavel Popela, Pavel Charvat, **Matous Cabalka**, Jan Fiser and Martin Zalesak	"Renewable energy investments, support schemes and the dirty option", **Domenico De Giovanni** and Elena Yakimova	"A stochastic bi-level approach for dynamic electricity pricing in the retail market", **Patrizia Beraldi** and Sara Khodaparasti
12:30 - 14:00	**Lunch**		**- Meeting EWGSO Board -**	

14:00 - 15:50	**Mini-Symposia (1 x 35' + 3 x 25')**		**Parallel Sessions (4 x 25')**	
	Aula Magna (11A)	**Aula 6A**	**Aula 4A**	**Aula 5A**
	Mini-Symposium - Solution methods for uncertain decision problems - Chair: F. Maggioni	**Mini-Symposium - Robust optimization - Chair: D. Kuhn and W. Wiesemann**	**Advances in stochastic optimization - Chair: A. Basso**	**Quantitative finance - Chair: R. Baviera**
	"Guaranteed bounds for pathwise stochastic dynamic programming", **Georg Pflug**, Martin Glanzer and Sebastian Maier	"Scenario optimization with relaxation: a new theory for data-driven decision with improved performance", **Simone Garatti** and Marco Campi	"Solver SQG for stochastic optimization of complex network models by stochastic gradient methods: optimization of simulation models", **Alexei Gaivoronski**	"Deep learning algorithm for pricing of high-dimensional financial derivatives under default risk", Christian Beck, Sebastian Becker, Patrick Cheridito, Arnulf Jentzen and **Ariel Neufeld**
	"Adaptive two-stage stochastic programming", **Beste Basciftci** and Shabbir Ahmed	"Scaled cuts for two-stage mixed-integer stochastic programs", **Ward Romeijnders** and Niels van der Laan	"Regularized quasi-monotone method for stochastic optimization", **Vladimir Shikhman** and Vaycheslav Kungurtsev	"A fast Monte Carlo scheme for additive processes and option pricing", **Roberto Baviera** and Michele Azzone
	"Extreme value theory-based deterministic equivalent closed-form for special classes of stochastic programs", Lohic Fotio Tiotsop, Michel Bierlaire, Edoardo Fadda and **Daniele Manerba**	"Robust conic satisficing", Arjun Ramachandra, **Napat Rujeerapaiboon** and Melvyn Sim	"A tractable class of Partially Observed Markovian Decision Process: det-POMDP", **Cyrille Vessaire**, Jean-Philippe Chancelier, Michel De Lara, Pierre Carpentier, Alejandro Rodríguez-Martínez and Anna Robert	"Optimal stopping problems for multi-dimensional stochastic processes with applications to real option theory", **Rossella Agliardi**
	"Bounds for multistage mixed-integer distributionally robust optimization", **Francesca Maggioni**, Guzin Bayraksan, Daniel Faccini and Ming Yang	"Data-driven robust optimization with cluster-based anomaly detection", **Aakil Caunhye** and Douglas Alem	"Rare events, asymptotic analysis and stochastic optimization", **Karl Breitung**	"A scenario-based solution to portfolio optimization in the energy market", **Elisa Raspanti** and Maria Prandini
15:50 - 16:10	**Coffee break**			
16:10 - 17:10	**Plenary Session 2 - Aula Magna (11A)** **Darinka Dentcheva - Stevens Institute of Technology** Multi-stage stochastic optimization with time-consistent risk constraints			
17:10 - 18:25	**Parallel Sessions (3 x 25')**			
	Aula Magna (11A)	**Aula 6A**	**Aula 4A**	**Aula 5A**
	Chance-constrained optimization - A. Lisser	**Bio-inspired computing for financial applications - Chair: M. Nardon**	**Decisions making under uncertainty - Chair: A. Basso**	**Innovative OR applications - Chair: K. Talluri**
	"Approximating two-stage chance-constrained programs with classical probability bounds", **Bismark Singh**	"A variant of the level-based learning swarm optimizer for solving a portfolio optimization problem maximizing the inner rate of risk adversion", **Filippo Piccotto** and Massimiliano Kaucic	"Fantasy sports: a game of skill or chance?", **Aishvarya**, Tirthatanmoy Das and Dinesh Kumar U	"'Buy n times, get one free' loyalty cards: Are they profitable for competing firms?", Amirhossein Bazargan, **Salma Karray** and Saeed Zolfaghari
	"Optimal control based trajectory planning under uncertainty", **Shangyuan Zhang**, Makhlouf Hadji, Abdel Lisser and Yacine Mezali	"A financial trading system with optimized signal aggregation, trading rule definition and indicator setting", Marco Corazza, **Claudio Pizzi** and Andrea Marchioni	"Identifying factors that influence the user engagement decision in the NFT Metaverse based on the Theory of Planned Behavior", **Hayder Albayati**, Jae Jeung Rho and Noor Alistarbadi	"The multinomial logit model with sequential offerings", Jacob Feldman and **Danny Segev**
	"A neural network approach for joint chance constrained geometric optimization", **Siham Tassouli** and Abdel Lisser	"Alternative probability weighting functions in behavioral portfolio selection", Diana Barro, Marco Corazza and **Martina Nardon**	"A distributionally robust perspective on the extremal queue problem", **Wouter van Eekelen**	"Matching Revenue Management using Graphical Processing Units (CUDA)", **Kalyan Talluri** and Sumit Kunnumkal
20:00	**Concert at the "Benedetto Marcello" Conservatory of Venice**			

Thursday, 30 June 2022

8:30 - 9:45 **Parallel Sessions (3 x 25')**

Aula Magna (11A)	Aula 6A	Aula 4A	Aula 10A
Supply chain problems - Chair: S. Maier	**Life insurance: products and markets - Chair: D. Barro**	**Machine learning and Intelligent Methods in Finance - Chair: G. Fasano**	**Risk and Dependence in financial markets - Chair: M. Maggi**
"K-adaptable robust pre-allocation of emergency supplies", **Paula Weller** and Fabricio Oliveira	"An empirical study of the efficiency and influence factor of selected OECD life insurance markets", **Biwei Guan**	"Less is more: ranking information, estimation errors and optimal portfolios", **Lukas Salcher** and Sebastian Stöckl	"Market connectedness and systemic risk", **Mario Maggi**, Mishel Qyrana, Maria-Laura Torrente and Pierpaolo Uberti
"Optimal cooperative and diversification strategies during recovery from supply disruptions", **Nader Azad**, Elkafi Hassini and Manish Verma	"Optimal portfolio choice of couples with tax deferred accounts and survival contingent products", **Sanghyeon Bae** and Woo Chang Kim	"Diversifying estimation errors with unsupervised machine learning", **Merlin Bartel** and Sebastian Stöckl	"Penalty functions in maximum likelihood estimating regime switching matrices and sectoral conditional migration probabilities", Timon Gaertner, Serguei Y. Kaniovski and **Yuri M. Kaniovski**
	"Optimal withdrawal policies for GMWB Variable Annuities under stochastic interest rates", **Francesco Rotondi** and Claudio Fontana	"Optimal liquidation through a limit order book: a neural network and simulation approach", **Alexandre Roch**	"Dependency in non-Gaussian settings: The generalized precision matrix and its financial applications", **Gabriele Torri**, Sandra Paterlini, Emanuele Taufer, Rosella Giacometti and Gyorgy Terdik

9:45 - 10:45 **Plenary Session 3 - Aula Magna (11A)**

Giorgio Consigli - Khalifa University of Science and Technology

Optimal distributionally robust liability-driven-investment for pension funds

10:45 - 11:05 **Coffee break**

11:05 - 12:55 **Mini-Symposia (1 x 35' + 3 x 25')** / **Parallel Sessions (4 x 25')**

Aula Magna (11A)	Aula 6A	Aula 4A
Mini-Symposium - Interfaces between Machine Learning and Stochastic Programming - Chair: F. Maggioni	**Mini-Symposium - Financial risk and optimization - Chair: G. Consigli**	**Distributionally robust optimization and applications - Chair: J.M. Morales**
"Advances in Risk-Averse Learning", **Andrzej Ruszczynski**	"Local volatility estimation in the presence of jumps", **Jorge P. Zubelli** and Vinícius Albani	"Adjusted distributionally robust bounds on expected loss functions", **Yasemin Merzifonluoglu** and Joseph Geunes
"Integration of machine learning and bayesian optimization for multistage stochastic programming problems", **Enza Messina** and Bruno Galuzzi	"Recent developments in volatility modelling", **Martino Grasselli**	"Distributionally robust chance-constrained optimal power flow with contextual information", **Juan Miguel Morales** and Adrián Esteban-Pérez
"Robust and distributionally robust optimization models for linear support vector machine", **Daniel Faccini**, Francesca Maggioni and Florian A. Potra	"Conditionally law-invariant risk measures and applications", **Bruno Costa**, Luciano de Castro, Antonio F. Galvao and Jorge P. Zubelli	"Distributionally robust optimization under stochastic disruptions", **Haoxiang Yang**
"Risk averse dynamic programming", **Martin Smid** and Miloš Kopa	"Multivariate second order stochastic dominance constraints for pension fund multistage stochastic models", **Vittorio Moriggia**, Sebastiano Vitali and Miloš Kopa	"(Distributionally) robust higher order portfolio selection: application to energy modelling", **Natalia Sirotko-Sibirskaya**

12:55- 14:00 **Lunch**

14:00 - 15:00	**Plenary Session 4 - Aula Magna (11A)** **David Morton - Northwestern University** Design of Covid-19 Staged Alert Systems to Ensure Healthcare Capacity with Minimal Closures			
15:00 -16:40	**BSPP (4 x 25')** **Aula Magna (11A)**	**Parallel Sessions (4 x 25')** **Aula 6A**	**Aula 4A**	**Aula 10A**
	Best Student Paper Prize - Jury: Stein-Erik Fleten, Miloš Kopa, Francesca Maggioni, Rüdiger Schultz	**Organized Session - Machine Learning and Intelligent Methods in Economics and Finance - Chair M. Corazza**	**Advances in stochastic optimization- Chair: G. Fasano**	**Organized Session - Mixed-integer distributionally robust optimization - Chair: R. van Beesten**
	"Distributionally robust stochastic programs with side information based on trimmings", **Adrián Esteban-Pérez** and Juan Miguel Morales	"Modelling profile heterogeneity on retirement via deep-rl: intelligent agents working towards retirement", **Fatih Ozhamaratli** and Paolo Barucca	"Conjugacies for Sparse Optimization", **Michel De Lara** and Jean-Philippe Chancelier	"Decomposition algorithms and solver for distributionally robust mixed-integer programming", **Kibaek Kim**
	"Exact quantization of multistage stochastic problems", **Maël Forcier**, Stéphane Gaubert and Vincent Leclère	"Moving average options: Machine Learning and Gauss-Hermite quadrature for a double non-Markovian problem", **Antonino Zanette**, Andrea Molent and Ludovic Goudenège	"Using SVD to handle ill-conditioning in optimization problems with applications to portfolio theory", Claudia Fassino, Maria-Laura Torrente and **Pierpaolo Uberti**	"Selective maintenance strategy under uncertain maintenance duration using distributionally robust chance-constrained programming", **Hamzea Al-Jabouri**, Ahmed Saif and Claver Diallo
	"Semi-discrete optimal transport: hardness, regularization and numerical solution", **Bahar Taşkesen**, Soroosh Shafieezadeh-Abadeh and Daniel Kuhn	"Machine learning techniques in joint default assessment", Margherita Dorina, Elisa Luciano and **Patrizia Semeraro**	"A new framework to generate Lagrangian cuts in multistage stochastic mixed-integer programming", **Christian Füllner**, Andy X. Sun and Steffen Rebennack	"Pragmatic distributionally robust optimization for simple integer recourse models", **Ruben van Beesten**, David Morton and Ward Romeijnders
	"Numerical method for approximately optimal solutions of two-stage distributionally robust optimization with marginal constraints", Ariel Neufeld and **Qikun Xiang**	"Quantile Regression Forest for Value-at-Risk forecasting via mixed-frequency data", **Mila Andreani**, Vincenzo Candila and Lea Petrella	"Risk-averse formulation of a bilevel stochastic linear problem with integer variables", **Johanna Burtscheidt** and Matthias Claus	"On modeling Distributionally two-stage epsilon-Robust Optimization for Multistage Multiscale Stochastic Optimization", Antonio Alonso-Ayuso, **Laureano F. Escudero** and Juan F. Monge
16:40 - 17:00	**Coffee break**			
17:00 - 18:30	**EWGSO meeting**			
19:00	**Boat to S. Servolo**			
20:00	**Gala Dinner**			

Friday, 1 July 2022

9:00 - 10:40 **Parallel Sessions (4 x 25')**

Aula Magna (11A)	Aula 6A	Aula 4A	Aula 5A
Organized Session - Robust Optimization - Chair: D. Kuhn	**Organized Session - Optimization and equilibrium models for water and energy - Chair: S.A. Gabriel**	**Neural networks with applications - Chair: G. Fasano**	**Stochastic programming - Chair: M. Kopa**
"Robust planning of production routing problem in closed-loop supply chain of glass bottles", **Ahmadreza Marandi** and Ali Borumand	"Flexibility pre-contracting: A design for short-term markets for electricity", **Felipe Van de Sande Araujo**, Stein-Erik Fleten, Endre Bjørndal and Steven A. Gabriel	"Medical Face Mask Detection Using Deep Learning Techniques: Limitations And Perspectives", **Pavle Milosevic**, Miroslav Minovic, Milos Milovanovic, Arso Vukicevic and Velibor Isailovic	"High-dimensional dependent random variables in stochastic programming", **Stein W. Wallace**, Zhaoxia Guo and Michal Kaut
"Multiobjective robust regret", Patrick Groetzner and **Ralf Werner**	"Optimal planning of transmission infrastructure expansion to efficiently integrate renewable energy generation", **Nikita Belyak**, Steven A. Gabriel, Nikolay Khabarov and Fabricio Oliveira	"A dynamical neural network approach for solving stochastic two-player zero-sum games", **Dawen Wu** and Abdel Lisser	"Solving constrained consumption-investment problems by decomposition algorithms", **Bernardo Pagnoncelli**, Tito Homem-de-Mello and Guido Lagos
"An enhanced column and constraint generation method for adaptive robust optimization", **Ricardo Lima**, Antonio Conejo and Omar Knio	"Generalized Nash equilibrium models for asymmetric river systems", **Steven A. Gabriel** and Nathan T. Boyd	"Detecting data-driven robust statistical arbitrage strategies with deep neural networks", Ariel Neufeld, Julian Sester and **Daiying Yin**	"Problem-based scenario generation by decomposing output distributions", **Benjamin S. Narum**, Jamie Fairbrother and Stein W. Wallace
"Robust optimization for the berth allocation and quay crane scheduling problem under uncertainty", **Filipe Rodrigues** and Agostinho Agra	"Tri-level equilibrium modeling for energy-environmental planning", Steven Gabriel, Fabricio Oliveira, **Olli Herrala** and Tommi Ekholm	"Hedonic and neural network models for real estate appraisal", **Antonella Basso** and Marco Corazza	"Contamination in Decision Dependent Randomness Stochastic Programs", **Miloš Kopa** and Tomáš Rusý

10:40 - 11:00 **Coffee break**

11:00 - 12:50 **Mini-Symposia (1 x 35' + 3 x 25')** (Aula Magna (11A), Aula 6A) — **Parallel Sessions (4 x 25')** (Aula 4A, Aula 8A)

Aula Magna (11A)	Aula 6A	Aula 4A	Aula 8A
Mini-Symposium - Stochastic ordering in financial decision making - Chair: M. Kopa	**Mini-Symposium - Decision under uncertainty - Chair: D. Kuhn**	**Energy systems and markets - Chair: A. Basso**	**SDDP and optimal control - Chair: V. Leclere**
"Robust portfolio dominance for different investors' preferences", **Sergio Ortobelli Lozza**, Tommaso Lando, Miloš Kopa and Tomas Tichy	"Splitting a random pie: Nash-type bargaining with coherent acceptability measures", **David Wozabal**, Raimund Kovacevic and Walter Gutjahr	"ZESOpt: energy-system optimization model using derivative-free solvers", **Michal Kaut**	"Batch Learning in Stochastic Dual Dynamic Programming", **Daniel Avila**, Anthony Papavasiliou and Nils Löhndorf
"Robust approaches in portfolio optimization with stochastic dominance", **Karel Kozmík** and Miloš Kopa	"The economics of frequency regulation through electricity storage: An analytical solution", **Dirk Lauinger**, Francois Vuille and Daniel Kuhn	"Facility location and capacity expansion for hydrogen production under uncertainty", **Šárka Štádlerová**, Peter Schütz and Asgeir Tomasgard	"A partial decomposition approach to solve the stochastic uncapacitated lot-sizing problem", Franco Quezada, **Céline Gicquel** and Safia Kedad-Sidhoum
"On the use of return scenario generation techniques in large-scale portfolio optimization framework", **David Neděla** and Sergio Ortobelli	"Twenty years of multi-stage scenario generation: learnings and pitfalls from decision science to data science", **Ronald Hochreiter**	"Extreme dependence in the energy market: a Mixture copula-ARJI-GARCH model", Arianna Agosto, Luciana Dalla Valle and **Maria Elena De Giuli**	"The algorithm OPTCON: optimal control of dynamic stochastic economic models", Dmitri Blueschke, Viktoria Blueschke-Nikolaeva and **Reinhard Neck**
"Multi-stage stochastic portfolio optimization under conditional Value at Risk", **Edoardo Fadda**, Daniele Manerba and Renata Mansini	"Asymptotic confidence intervals for quantile estimators in nested simulations", **Maximilian Klein** and Ralf Werner	"Optimising Italian electricity and gas sectors coupling in a 2030 decarbonized energy system", **Giovanni Micheli**, Maria Teresa Vespucci, Laura Tagliabue and Dario Siface	"Stochastic Dual Dynamic Programming algorithms for non-finitely supported distributions", Maël Forcier and **Vincent Leclere**

12:50 - 14:00 **Lunch**

14:00 - 15:00 **Plenary Session 5 - Aula Magna (11A)**

Gah-Yi Ban - Robert H. Smith Business School, University of Maryland

Data-driven Optimization: from Theory to Practice

15:00 - 16:40	**Organized Session (4 x 25')**	**Parallel Sessions (3 x 25')**		
	Aula Magna (11A)	**Aula 6A**	**Aula 4A**	**Aula 5A**
	Organized Session - New models and algorithms for commodity operations and valuation - Chair: S.-E. Fleten	**Transportation and applications- Chair: M. Nardon**	**Inventory problems - Chair: M. Tolotti**	**Stochastic optimization with applications - G. Fasano**
	"Quadratic hedging of futures term structure risk in merchant energy trading operations", **Nicola Secomandi** and Bo Yang	"A stochastic program for the planning of recharging and relocation activities in car-sharing systems", Lars C. E. Folkestad, Mathias D. Klev, **Kjetil Fagerholt** and Giovanni Pantuso	"Distributionally robust inventory management", **Yilin Xue**, Yongzhen Li and Napat Rujeerapaiboon	"Minimax decision rules for planning under uncertainty", **Edward Anderson** and Stan Zachary
	"Network-dual reoptimization strategies for managing energy real options with timing decisions", **Alessio Trivella**, Selvaprabu Nadarajah and Francesco Corman	"On a two-stage stochastic binary quadratic model for Cross-Dock infrastructure Design problem under uncertainty, S-CDD", **Maria Araceli Garin**, Laureano F. Escudero and Aitziber Unzueta	"Joint stocking and pricing decisions for distributionally robust inventory problems with decision-dependent demands", **Hamed Rahimian** and Sanjay Mehrotra	"Stochastic sequential decision making in the conversion from conventional to organic farming", **Mahboubeh Jahantab**, Babak Abbasi and Pierre Le Bodic
	"Scheduling hydropower releases under price and inflow comovements", **Stein-Erik Fleten**, Andreas Kleiven and Simon Risanger	"A risk and cost based route planning for hazardous materials (hazmat) transportation", **Zafer Yılmaz**	"A theoretical validation of the DDMRP reorder policy", Daniela Favaretto, Alessandro Marin and **Marco Tolotti**	
	"Renewable energy communities, digitalization and information", **Marta Castellini**, Michele Moretto, Sergio Vergalli and Dirk Bergemann			
16:40 - 17:00	**Closings - Aula Magna (11A)** **Coffee break and farewell**			