

ICCF 2019 Program

Monday, 8th

8:30 – 9:30	Registration	
9:30 – 9:50	Opening	
9:50 – 10:40	Plenary lecture. Peter A. Forsyth (University of Waterloo, Canada) <i>Multi-period mean CVAR asset allocation: Is it advantageous to be time consistent?</i> Room A	Chairman: Maria R. Grossinho
10:40 – 11:10	Coffee break	
11:10 – 12:00	Plenary lecture. Christoph Reisinger (University of Oxford, United Kingdom) <i>Deep neural network approximations to high-dimensional control and games in finance</i> Room A	Chairman: Daniel Ševčovič
	MS2: Approximation methods from numerics, probability and statistical learning in computational finance Organizer: Kathrin Glau Room: A	MS9: Young researchers Minysimposium on computational finance Organizer: José Germán López-Salas Room: B
12:00 – 12:25	Michèle Vanmaele <i>Pricing American options using radial basis functions</i>	José G. López-Salas <i>Quasi-Regression Monte-Carlo scheme for semi-linear PDEs and BSDEs</i>
12:25 – 12:50	Linus Wunderlich <i>Efficient numerical techniques for parametric problems in option pricing</i>	Ankush Agarwal <i>Finite variance unbiased estimation of stochastic differential equations</i>
12:50 – 13:15	Athena Picarelli <i>A truncated semi-Lagrangian scheme for second order degenerate Hamilton-Jacobi-Bellman equations in bounded domains</i>	Côme Huré <i>Some neural network-based schemes to solve high-dimensional nonlinear PDEs</i>
13:15 – 13:40	Stefan Gerhold <i>Small-time and large-time smile behaviour model for the rough Heston model</i>	Lorenc Kapllani <i>Multistep schemes for solving Backward Stochastic Differential Equations on GPU</i>
13:40 – 15:30	Lunch	
	MS2: Approximation methods from numerics, probability and statistical learning in computational finance Organizer: Kathrin Glau Room: A	MS9: Young researchers Minysimposium on computational finance Organizer: José Germán López-Salas Room: B
15:30 – 15:55	Kathrin Glau <i>Low-rank tensor approximation for Chebyshev interpolation in parametric option pricing</i>	Shuoqing Deng <i>Optimal relative consumption by competing with past spending maximum</i>
15:55 – 16:20	Wolfgang Stockinger <i>Simulation of McKean SDEs, multi-level Monte Carlo schemes and applications in computational finance</i>	Outhmane Mounjid <i>A ranking methodology for market making activity</i>
16:20 – 16:45	Amir Khalilzadeh <i>Statistical learning for higher moments of asset returns</i>	Lokman Abbas-Turki <i>Conditional Monte Carlo learning for diffusions</i>
16:45 – 17:10	Yufei Zhang <i>A penalty scheme and policy iteration for stochastic hybrid control problems with nonlinear expectations</i>	Arnaud Lionnet <i>Numerical approximation of BSDEs with polynomial growth driver</i>
17:10 – 17:30	Coffee break	

	MS2: Approximation methods from numerics, probability and statistical learning in computational finance Organizer: Kathrin Glau Room: A		Contributed talks Chairman: Josep Vives Room: B
17:30 – 17:55	Lotfi Boudabsa <i>Learning with kernels in finance</i>	17:30 – 17:50	Dan Cheng <i>A reinforced URN process modeling of recovery rates and recovery times</i>
17:55 – 18:20	Christian Fries <i>Stochastic Algorithmic Differentiation of discontinuous functions (and other stochastic operators) and application in mathematical finance</i>	17:50 – 18:10	Andrea Fontanari <i>Portfolio risk and the quantum majorization of correlation matrices</i>
		18:10 – 18:30	Rebeca Peláez <i>Probability of default estimation using a nonparametric approach</i>
		18:30 – 18:50	Jonathan Hüser <i>Regression likelihood ratio method Monte Carlo sensitivities</i>
		18:50 – 19:10	Emma M. Iglesias <i>Pseudo-maximum likelihood estimation and testing in the constant elasticity of variance continuous time model</i>
		19:10 – 19:30	Pasquale Cirillo <i>A URN-based nonparametric modeling of the dependence between PD and LGD with an application to mortgages</i>
20:00	Welcome cocktail Hotel Eurostars Atlántico		

Tuesday, 9th

9:00 – 9:50	Plenary lecture. Chairman: Pasquale Cirillo Monique Jeanblanc (Université d'Évry-Val d'Essonne, France) <i>Characteristics of random times</i> Room A	
9:50 – 10:40	Plenary lecture. Chairman: Christoph Reisinger Stéphane Crépey (Université d'Évry-Val d'Essonne, France) <i>When Capital is a Funding Source: The XVA Anticipated BSDEs</i> Room A	
10:40 – 11:10	Coffee break	
11:10 – 12:00	Plenary lecture. Chairman: Karel in't Hout Griselda Deelstra (Université Libre de Bruxelles, Belgium) <i>On multivariate European option and barrier option pricing in regime-switching models</i> Room A	
	MS6: Modelling and valuation techniques for energy markets Organizer: Michael Coulon Room: A	MS3: Consumption and investment under mortality risk Organizer: Jaime Londoño Room: B
12:00 – 12:25	Michael Coulon <i>Wind park valuation and risk management in German intraday power markets</i>	Jaime A. Londoño <i>Optimal consumption, investment, and life insurance purchase: a state-dependent utilities approach</i>
12:25 – 12:50	Derek Bunn <i>Forecasting intra-day price spread density matrices for electricity storage operations</i>	Mogens Steffensen <i>Optimal design: from insurance policy to economic policy</i>
12:50 – 13:15	M. Carmen Calvo-Garrido <i>Pricing swing options in electricity markets with two stochastic factors: PIDE modeling and numerical solution</i>	
13:15 – 13:40	Klaus Spanderen <i>Efficient Gas Swing and Storage valuation with Neural network and PDE/MC</i>	
13:40 – 15:30	Lunch	
	MS4: Local volatility models and inverse problems Organizer: Jorge Zubelli Room: A	MS8: Qualitative and quantitative aspects of nonlinear PDEs based models arising in mathematical finance Organizer: Daniel Ševčovič Room: B
15:30 – 15:55	Jorge Zubelli <i>A splitting strategy for the calibration of jump-diffusion models</i>	Daniel Ševčovič <i>On solutions of a partial integro-differential Black-Scholes equation in Bessel potential spaces</i>
15:55 – 16:20	Julien Guyon <i>Inversion of convex ordering: local volatility does not maximize the price of VIX futures</i>	Sona Kilianova <i>Dynamic portfolio optimization via a Hamilton-Jacobi-Bellman equation</i>
16:20 – 16:45	Stéphane Crépey <i>Deep calibration of local volatility</i>	Igor Melicherčik <i>Pension saving strategies based on Samuelson's lifecycle theory</i>
16:45 – 17:10	Bruno Dupire <i>A new view at Local Volatility and Local Correlation</i>	Vera Egorova <i>An exponential time differencing method for American option pricing problems</i>
17:10 – 17:30	Coffee break	

	Contributed talks Chairman: Tony Ware Room: A	Contributed talks Chairman: Bertram Düring Room: B
17:30 – 17:50	Lech A. Grzelak <i>Collocating Local Volatility: A competitive alternative to stochastic local volatility models</i>	Argimiro Arratia <i>Models of stock prices with overnight gap and flash crash to test stop-loss rules efficiency</i>
17:50 – 18:10	Fabien Le Floc'h <i>Arbitrage-free implied volatility interpolation by spline collocation. Summary and applications</i>	Pol Álvarez <i>HPC framework for multiple evaluation of supervised learning models and a famous expert for stock screening</i>
18:10 – 18:30	Geoffrey Lee <i>Introducing two mixing fractions to a lognormal LSV model</i>	Shuaiqiang Liu <i>Calibration neural networks for financial models</i>
18:30 – 18:50	Zororo S. Makumbe <i>Some results on the Hybrid Heston-SLV model with jumps: pricing, hedging and sensitivities. A Malliavin approach</i>	Wenjun Zhang <i>Path-dependent leveraged exchange-traded fund option pricing</i>
18:50 – 19:10	Jacob Snoeijs <i>Efficient numerical valuation of high-dimensional basket options via partial differential equations</i>	Stefan Trück <i>Interconnectedness of spot electricity prices. A dynamic network analysis</i>
19:10 – 19:30	María R. Nogueiras <i>Numerical approximation of dynamic initial margin: Chebychev on the market space analysed</i>	Zsolt Nika <i>Investment strategies with long memory: log-optimal solution and approximations by stochastic gradient</i>

Wednesday, 10th: Industrial day
(Venue: Afundación)

9:30 – 10:20	Plenary lecture. Bruno Dupire (Bloomberg, USA) <i>The Perils of Parameterization</i>	Chairman: Jorge Zubelli
10:20 – 11:10	Plenary lecture. Julien Guyon (Bloomberg, USA) <i>The Joint S&P 500/VIX Smile Calibration Puzzle Solved</i>	Chairman: María Nogueiras
11:10 – 11:40	Coffee break	
11:40 – 12:20	Plenary lecture. Andrea Pallavicini (Imperial College, UK and Banca IMI, Italy) <i>Valuation adjustments in practice</i>	Chairman: Kees Oosterlee
12:20 – 13:20	Round table Current hot topics in the financial industry Bruno Dupire, Peter Forsyth, Lech Grzelak, María Nogueiras Chairman: Kees Oosterlee	
13:30 – 15:00	Lunch	
15:15	Excursion Departure from Hotel Eurostars Atlántico	
20:30	Conference dinner Restaurante Domus	

Thursday, 11th

9:00 – 9:50		
9:50 – 10:40	Plenary lecture. Rüdiger Kiesel (Universität Duisburg-Essen, Germany) <i>Analysis of intraday power markets using Hawkes processes</i> Room A	Chairman: Matthias Ehrhardt
10:40 – 11:10	Coffee break	
11:10 – 12:00	Plenary lecture. Antony Ware (University of Calgary, Canada) <i>Polynomial maps of polynomial processes for energy prices</i> Room A	Chairman: Christina Christara
	MS1: Analytical and numerical methods for option pricing Organizer: Maria do Rosário Grossinho Room: A	MS7: Numerical methods for PDEs in finance Organizers: Matthias Ehrhardt, Jan ter Maten Room: B
12:00 – 12:25	Ana M. Monteiro <i>Large scale nonparametric estimation of risk-neutral densities through jointly use of constraints based on call and put option prices</i>	Karel in't Hout <i>Operator splitting schemes for the two-asset Merton jump-diffusion model</i>
12:25 – 12:50	Beatriz Salvador <i>PDE models for American options with total value adjustment and two stochastic factors</i>	Kristian Debrabant <i>BDF finite difference schemes for diffusion equations with obstacle</i>
12:50 – 13:15	Carlos Oliveira <i>Investment with decreasing cost due to technological innovation improvements</i>	Bertram Düring <i>High-order compact finite difference scheme for option pricing in stochastic volatility jump models</i>
13:15 – 13:40	Sara Lopes <i>LIBOR market model including credit risk under real world measure</i>	Christina Christara <i>A penalty-like method for CVA pricing by a PDE model</i>
13:40 – 15:30	Lunch	
	MS1: Analytical and numerical methods for option pricing Organizer: Maria do Rosário Grossinho Room: A	MS5: Machine learning methods in computational finance Organizer: Anastasia Borovykh, Kees Oosterlee Room: B
15:30 – 15:55	Joaõ Guerra <i>Asset allocation using option-implied distributions in an exponentially tempered stable Lévy model</i>	Lukas Gonon <i>Random neural networks, reservoir computing and hedging by deep learning techniques</i>
15:55 – 16:20	José Cruz <i>Option pricing in illiquid markets with jumps</i>	Ganna Marchenko <i>Maximum entropy approach for nonstationary time series analysis with application to volatility modelling</i>
16:20 – 16:45	Manuel Esquível <i>Some financial market models obtained by Euler discretization of continuous models</i>	Sofie Reyners <i>Machine learning for quantitative finance: fast derivative pricing</i>
16:45 – 17:10	María Suárez Mining extraction projects: mathematical analysis and numerical methods for new PDE models	Philippe von Wurstemberger <i>Overcoming the curse of dimensionality with DNNs: Theoretical approximation results for PDEs</i>
17:10 – 17:30	Coffee break	

	Contributed talks Chairman: Michèle Vanmaele Room: A	Contributed talks Chairman: Sona Kilianova Room: B
17:30 – 17:50	Nikolay Bondarenko <i>Optimal life-contingent insurance under bid-ask spreads</i>	Margaret Insley <i>Climate games: Who's on first? What's on second?</i>
17:50 – 18:10	Nikolay Gudkov <i>Pricing and hedging of guaranteed minimum benefits using power series approximation techniques</i>	Vladimir Petrov <i>Instantaneous volatility seasonality of high-frequency markets in directional-change intrinsic time</i>
18:10 – 18:30	Jonathan Ziveyi <i>Incorporating taxation in the valuation of variable annuity contracts: the case of the guaranteed minimum accumulation benefit</i>	Raquel Gaspar <i>Empirics on CPPI design risk</i>
18:30 – 18:50	Kentaro Kikuchi <i>A term structure interest rate model with the exit time from the Quantitative Easing Policy</i>	Paulo M. Silva <i>Robo-advising: unfolding the risks</i>
18:50 – 19:10	Serguei Vassilovski <i>Multi-curve interest rate modeling with Hull-White and Black-Karasinski</i>	Anastasia Borovykh <i>Understanding generalisation in noisy time series forecasting</i>
19:10 – 19:30	Samyukta Venkataramanan <i>Parameter estimation of affine term structure models</i>	Younhee Lee <i>Real option pricing on finite time horizon</i>

Friday, 12th

	Contributed talks Chairman: Karel in't Hout Room: A
9:00 – 9:20	Chiheb Ben Hammouda <i>Hierarchical adaptive sparse grids for option pricing under the rough Bergomi model</i>
9:20 – 9:40	Jiang Pu <i>Accelerated Share Repurchase: option hedging, optimal execution and neural networks</i>
9:40 – 10:00	Víctor Gatón <i>A spectral method for an optimal investment problem with transaction costs under potential utility</i>
10:00 – 10:20	Josep Vives <i>Higher order approximation of call option prices under stochastic volatility models</i>
10:20 – 10:40	Álvaro Leitao <i>Continuous Time Markov Chain approximation of the Heston model</i>
10:40 – 11:10	Coffee break
11:10 – 12:00	Plenary lecture. Chairman: Monique Jeanblanc Nizar Touzi (École Polytechnique, France) <i>Continuous time Principal Agent and optimal planning</i> Room A
12:00 – 12:50	Plenary lecture. Chairman: Peter Forsyth Olivier Pironneau (Université Paris Sorbonne, France) <i>Applications of Deep Learning to Partial Differential Equations and Finance</i> Room A
12:50	Closing
13:30 – 15:30	Lunch