Workshop on Quantitative Finance 2024 (QFW2024)

Thursday April 11th

	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli
8:30 AM - 9:45 AM	Registration (Aula Magna Scaravilli)		
9:45 AM - 10:00 AM	Opening Remarks (Aula Magna Scaravilli)		
10:00 AM - 10:45 AM	Opening Lecture (Aula Magna Scaravilli)		
11:00 AM - 1:00 PM	ENERGY MARKETS	STOCHASTIC CONTROL	VOLATILITY MODELING
1:00 PM - 2:15 PM	Lunch + Poster Session + MSc QF Poster Session		
2:15 PM - 4:15 PM	PORTFOLIO	FINANCIAL DATA MINING	
4:15 PM - 4:45 PM	Coffee Break		
4:45 PM - 6:45 PM	PORTFOLIO	STOCHASTIC CONTROL and STOCHASTIC PROCESSES	

Friday April 12th

	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli
8:45 AM - 10:45 AM	MACHINE LEARNING for FINANCE	INSURANCE	MICROSTRUCTURE
10:45 AM - 11:15 AM	Coffee Break		
11:15 AM - 1:15 PM	NETWORKS and CRYPTO MARKETS	INSURANCE	MICROSTRUCTURE and MACHINE LEARNING for FINANCE
1:15 PM - 2:30 PM	Lunch		
2:30 PM - 5:00 PM	RISKS	GENERAL FINANCE	DERIVATIVE PRICING
5:00 PM - 5:30 PM	Coffee Break		
5:30 PM - 6:45 PM	ROUND TABLE (Aula Magna Scaravilli)		
8:00 PM - 11:00 PM	Social Dinner at Carlton Hotel		

Saturday April 13th

	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli
8:45 AM - 11:00 AM	MEAN-FIELD and STOCHASTIC GAMES	STOCHASTIC PROCESSES	GREEN FINANCE
11:00 AM - 11:30 AM	Coffee Break		
11:30 AM - 1:30 PM	INTEREST RATE MODELS	STOCHASTIC PROCESSES and CRYPTO MARKETS	GREEN FINANCE and PORTFOLIO
1:30 PM - 2:45 PM	Lunch		

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Thursday April 11th			
	Aula 3 Scaravilli	**Aula I, Belle Arti 41**	**Aula Magna Scaravilli**
8:30 AM - 9:45 AM	**Registration (Aula Magna Scaravilli)**		
9:45 AM - 10:00 AM	**Opening Remarks (Aula Magna Scaravilli)**		
10:00 AM - 10:45 AM	10 Years of rough volatility: A current perspective **Speaker: J. Gatheral** (Aula Magna Scaravilli). **Introduced by F. Lillo**		

	ENERGY MARKETS **Chair: T. Vargiolu**	**STOCHASTIC CONTROL** **Chair: G. Ferrari**	**VOLATILITY MODELING** **Chair: J. Gatheral**
11:00 11:15	Fast and General Simulation of Lévy-driven OU processes for Energy Derivatives **Speaker: P. Manzoni. Discussant: L. Torricelli**	Optimal Consumption and Investment with Independent Stochastic Labor Income **Speaker: S. Park. Discussant: G. Ferrari**	Diamonds and forward variance models **Speaker: P. Friz. Discussant: S. Svaluto-Ferro**
11:30	Gaussian Volterra processes as models of electricity markets **Speaker: T. Vargiolu. Discussant: P. Manzoni**	Uncertainty over uncertainty in environmental policy adoption: Bayesian learning of unpredictable socioeconomic costs **Speaker: N. Rodosthenous. Discussant: P. Tankov**	Pricing and calibration of path-dependent volatility models **Speaker: G. Gazzani**
11:45			The EWMA two-factor exponential Ornstein-Uhlenbeck model **Speaker: F. Baschetti**
12:00	A Fuzzy Approach to Volumetric Risk Management in Solar Power Production **Speaker: B. Sartini**	On optimal portfolio choice under stochastic drift of longevity bonds **Speaker: I. Gallo**	Orthogonal expansions in Volterra-Heston models **Speaker: T. K. Kloster**
12:15	Higher moments in the fundamental specification of electricity forward prices **Speaker: G. Scandolo**	Optimal Retirement Choice under Age-dependent Force of Mortality **Speaker: S. Zhu**	A Heston-Nandi GARCH model with two volatility components and two driving factors **Speaker: C. Tezza**
12:30	Additive model with fractional Brownian martingale for forward prices in energy markets **Speaker: M. Mastrogiovanni**	Self-consumption groups and the optimal management of storage **Speaker: A. Awerkin**	Long Memory by Heterogeneous Forecast Aggregation **Speaker: G. P. Aielli**
12:45		A comparison principle for Hamilton-Jacobi-Bellman-Isaacs equations based on couplings of differential operators **Speaker: F. Fuchs**	On the implied volatility of Inverse and Quanto Inverse options under stochastic volatility models **Speaker: M. Pravosud**

1:00 PM - 2:15 PM	**Lunch + Poster Session + MSc QF Poster Session**
	Sentiment Trading with Large Language Models **Presenter: K. Kirtac**
	The Information Content of Delayed Block Trades in Cryptocurrency Markets **Presenter: L. Galati**
	Managing ESG Ratings Disagreement in Sustainable Portfolio Selection **Presenter: M. L. Martino**
	Russia-Ukraine war and market expectations: evidence from option implied densities of European gas **Presenter: M. Kosolapova**
	Dynamics of Wealth Inequality in the United States **Presenter: Y. Choi**
	Ergodic Mean-Field Games of Singular Control with Regime-Switching **Presenter: I. Tzouanas**
	Deep Limit Order Book Forecasting **Presenter: A. Briola**
	A Methodological Approach to Assess Life Annuities Changes **Presenter: C. Di Palo**
	Trading with Concave Price Impact and Impact Decay - Theory and Evidence Presenter: **N. Hey**
	MSc QF Poster Session **Presenter: M. Penza**
	MSc QF Poster Session **Presenter: G. Nadalini**
	MSc QF Poster Session - Price Impact on Uniswap V3 Decentralized Exchange **Presenter: D. Barone**
	MSc QF Poster Session - Cross-country Mortality Analysis: Trends and Impacts on Annuities using Lee-Carter Model and Extensions **Presenter: M. M. Barbieri**

Thursday April 11th			
	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli

	PORTFOLIO Chair: F. Antonelli	FINANCIAL DATA MINING Chair: R. Dieci	
02:15	Quantifying Credit Portfolio sensitivity to asset correlations with interpretable generative neural networks **Speakers: S. Caprioli and E. Cagliero. Discussant: A. Rengim Cetingoz**	Sentiment-Based ETF Return Forecasting with Bayesian RFE and FinBERT Tweets Classification **Speaker: R.G. Cestari. Discussant: L. Cerboni-Baiardi**	
02:30			
02:45	Factor Risk Budgeting and Beyond **Speaker: A. Rengim Cetingoz. Discussant: G. Scandolo**	Text mining arXiv: a look through quantitative finance papers **Speaker: M. L. Bianchi. Discussant: R. Dieci**	
03:00			
03:15	Is there an ESG-return trade off for asset managers? **Speaker: D. Stocco**	Option pricing in a sentiment-biased stochastic volatility model **Speaker: M. Patacca. Discussant: M. Azzone**	
03:30	A risk-gain-sparsity dominance approach for portfolio selection **Speaker: A. Di Paolo**		
03:45	Fast and Stable Credit Gamma of CVA **Speaker: R. Daluiso**	Option-implied asymmetry indices in the Eurozone: the relationship with sentiment and financial stress **Speaker: L. Gambarelli**	
04:00		Hawkes-based cryptocurrency forecasting via Limit Order Book data Speaker: **D. Raffaeli**	

4:15 PM - 4:45 PM	Coffee Break

	PORTFOLIO Chair: F. Cesarone	STOCHASTIC CONTROL and STOCHASTIC PROCESSES Chair: L. Torricelli	
04:45	An Asset and Liability Management model for pension funds using deep reinforcement learning **Speakers: M. Di Francesco and V. Sperandeo**	Striking the Balance: Life Insurance Timing and Asset Allocation in Financial Planning **Speaker: G. Ferrari. Discussant: S. Federico**	
05:00	Delta Hedging: Reinforcement Learning from simulation to reality **Speaker: M. Colombi**		
05:15	Capital Risk, Fiscal Policy, and the Distribution of Wealth **Speaker: L. Regis**	Utility Maximization for Reinsurance Policies in a Dynamic Contagion Claim Model **Speaker: C. Ceci. Discussant: K. Oberpiller**	
05:30	Signature Trading: A Path-Dependent Extension of theMean-Variance Framework with Exogenous Signals **Speaker: O. Futter**		
05:45		Arcades to Bridge to Net Zero **Speaker: A. Macrina. Discussant: C. Ceci**	
06:00			
06:15		Option pricing for time-changed Feller processes **Speaker: E. Scalas**	
06:30		A note on two stochastic hyperbolic equations **Speaker: L. Marconi**	

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Friday April 12th

	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli
	MACHINE LEARNING for FINANCE Chair: P. Rossi	**INSURANCE Chair: S. Mulinacci**	**MICROSTRUCTURE Chair: P. Guasoni**
08:45 / 09:00	SpotV2Net: Multivariate Intraday Spot Volatility Forecasting via Vol-of-Vol-Informed Graph Attention Networks **Speaker: G. Toscano. Discussant: D. Palumbo**	Robust asymptotic insurance-finance arbitrage **Speaker: K. Oberpriller. Discussant: I. Oliva**	
09:15	Spoofing and Manipulating Order Books with Learning Algorithms **Speaker: G. García-Arenas. Discussant: A. Ravagnani**	Pseudo Weak Lack-of-Memory Property with Insurance Applications **Speaker: M. Ricci**	Insider trading with legal risk, entropy and BSDEs **Speaker: U. Cetin. Discussant: M. Brachetta**
09:30		Pricing insurance contracts with an existing portfolio as background risk **Speaker: C. De Vecchi**	
09:45	Dimensionality reduction techniques to support insider trading detection **Speaker: A. Ravagnani**	An analytical study of variable annuities with surrender option **Speaker: G. Stabile**	Unwinding Stochastic Order Flow: When to Warehouse Trades **Speaker: M. Nutz. Discussant: P. Guasoni**
10:00	Machine learning methods for American-style path-dependent contracts **Speaker: A. Pallavicini**	Market-Consistent Valuation and Capital Assessment for Demographic Risk in Life Insurance: A Cohort Approach **Speaker: F. Della Corte**	
10:15	Robust calibration of financial models using Bayesian methods for neural stochastic differential equations **Speaker: E. Flonner**	Optimal reinsurance via BSDEs in a partially observable model with jump clusters **Speaker: M. Brachetta**	Limit Order Book Dynamics and Order Size Modelling Using Compound Hawkes Process **Speaker: K. Jain**
10:30	CAESar: Conditional Autoregressive Expected Shortfall **Speaker: F. Gatta**	A parametric insurance policy for beekeepers and honey production: random forest regressions and real world pricing **Speaker: I. Colivicchi**	A model for the hedging impact of option market makers **Speaker: S. Egebjerg**

10:45 AM - 11:15 AM	**Coffee Break**

	NETWORKS and CRYPTO MARKETS Chair: R. Grassi	**INSURANCE Chair: M. Di Francesco**	**MICROSTRUCTURE and MACHINE LEARNING for FINANCE Chair: G. Bormetti**
11:15 / 11:30	Interbank network reconstruction enforcing density and reciprocity **Speaker: V. Macchiati. Discussant: P. Bartesaghi**	On the optimal design of a new class of proportional portfolio insurance strategies in a jump--diffusion framework **Speaker: I. Oliva. Discussant: A. Doldi**	Optimal Estimation of Generic Dynamics by Path-Dependent Neural Jump ODEs **Speaker: J. Teichmann. Discussant: T. Vargiolu**
11:45	Local Balance and Systemic Risk Measures in Signed Financial Networks **Speaker: P. Bartesaghi**	A novel undertaking specific approach for demographic risk in Solvency II framework **Speaker: G. P. Clemente**	Stochastic Liquidity as Proxy for Nonlinear Cross Impact **Speaker: C. Tracy. Discussant: F. Lillo**
12:00	A Network Perspective on the DAX 30 Supply Chain: Stylized Facts and Resilience **Speaker: E. Flori**	Insurance premium implied by rank dependence and probability distortion **Speaker: M. Nardon**	
12:15	A new systemic risk measure in a Random Matrix Theory context **Speaker: C. Pastorino**	A Score-Driven approach to Temperature Modelling in High Dimensions **Speaker: S. Serafini**	Optimal execution in a time varying environment: well-posedness and price manipulation **Speaker: G. Palmari**
12:30	Modelling shock propagation and resilience in financial temporal networks **Speaker: G. Rizzini**	Corporate demand for environmental insurance **Speaker: G. Iannucci**	Physics-Informed Deep Volatility **Speaker: K. Hoshisashi**
12:45	Crypto premium, higher-order moments and tail risk **Speaker: P. Santucci de Magistris**	Portfolio insurance strategies for defined contribution pension schemes in a jump-diffusion framework with stochastic longevity risk **Speaker: D. Feleppa**	Reservoir computers for quantile forecasting **Speaker: P. Mazzarisi**
01:00	Coherent Entropy-Based Risk Metrics in Minimum Risk Portfolio Selection **Speaker: J. M. Ricci**	Optimal dynamic pension funds management with volatility and interest rate risk **Speaker: I. Stefani**	Introducing the sigma-Cell: Unifying GARCH, Stochastic Fluctuations and Evolving Mechanisms in RNN-based Volatility Forecasting **Speaker: G. Rodikov**

Friday April 12th			
	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli
1:15 PM - 2:30 PM	Lunch		

	RISKS Chair: C. Tebaldi	GENERAL FINANCE Chair: G. Bottazzi	DERIVATIVE PRICING Chair: D. Marazzina
02:30 02:45	Playing with Fire? A Mean Field Game of Control Model for the Impact of Regulatory Capital Constraints on Fire Sales and Systemic Risk **Speaker: R. Frey. Discussant: M. Aleandri**	Whose forecast matters? The risk premium of optimistic & pessimistic disagreement **Speaker: G. Curatola. Discussant: C. Tebaldi**	American options with liquidation penalties **Speaker: A. Battauz. Discussant: A. Macrina**
03:00	On a General Class of Portfolio Diversification Measures Induced by Risk Measures **Speaker: P. Uberti. Discussant: A. Consiglio**	Hedging Permanent Income Shocks **Speaker: R. Corvino**	Collective Arbitrage and the Value of Cooperation **Speaker: A. Doldi. Discussant: M. Nutz**
03:15		On continuity of state-dependent utility **Speaker: E. Berton**	
03:30	Modelling the option Bid-Ask Spreads **Speaker: A. Medina**	The Attribution Matrix and the joint use of Finite Change Sensitivity Index and Residual Income for value-based performance measurement **Speaker: A. Marchioni**	Time-Inhomogeneity in Currency Triangles **Speaker: G. Amici. Discussant: A. Battauz**
03:45	Symmetric Bernoulli distributions and minimal dependence copulas **Speaker: A. Mutti**	Pricing anomalies in an equilibrium pricing model with biased learning **Speaker: G. Bottazzi**	
04:00	Risk Adjusted Liquidity Coverage Ratio **Speaker: N. Picchiotti**	Consumption Skewness, Time Deformation and the Term Structure **Speaker: P. Neri**	American options with acceleration clauses **Speaker: S. Staffolani. Discussant: S. Mulinacci**
04:15	Graph Neural Network Methods for Systemic Risk Management **Speaker: N. Weber**	Reverse Mortgages, Housing and Consumption: An Equilibrium Approach **Speaker: A. Sun**	
04:30	Risk measures based on weak optimal transport **Speaker: M. Nendel**	Market structure or agent rationality: How efficiency trades with belief updating? **Speaker: M. Ottaviani**	Pricing Options with a Compound CARMA(p,q)-Hawkes model **Speaker: L. Mercuri**
04:45		A note on two stochastic hyperbolic equations **Speaker: L. Marconi**	Is (independent) subordination relevant in option pricing? **Speaker: M. Azzone**

5:00 PM - 5:30 PM	**Coffee Break**
5:30 PM - 6:45 PM	**ROUND TABLE: 'Risk and Intelligence: Exploring the Intersection of Finance, Insurance, and Artificial Intelligence' (Aula Magna Scaravilli)** **Panelists:** **Renzo Giovanni Avesani - Leithà - Unipol Group** **Andrea Cosentini - Intesa Sanpaolo** **Pier Giuseppe Giribone - AIFIRM and BPER Banca** **Lea Zicchino - Prometeia** **A representative from AIAF** **Moderator: Umberto Cherubini, University of Bologna**
8:00 PM - 11:00 PM	**Social Dinner at Carlton Hotel**

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Saturday April 13th			
	Aula 3 Scaravilli	Aula I, Belle Arti 41	Aula Magna Scaravilli
	MEAN-FIELD and STOCHASTIC GAMES **Chair: S. Federico**	**STOCHASTIC PROCESSES** **Chair: R. Agliardi**	**GREEN FINANCE** **Chair: S. Romagnoli**
08:45 09:00	Executions in competition under Erlang kernel **Speaker: M. Aleandri. Discussant: J. Dianetti**	Optimal liquidation policies of redeemable shares **Speaker: F. Rotondi. Discussant: R. Agliardi**	Can Investors Curb Greenwashing? **Speaker: P. Tankov. Discussant: S. Romagnoli**
09:15 09:30	Multiple equilibria in mean-field game models for large oligopolies with strategic complementarities **Speaker: J. Dianetti. Discussant: A. Picarelli**	Estimation of parameters and local times in a discretely observed threshold diffusion model **Speaker: P. Pigato. Discussant: C. Mancini**	Active Fund Management when ESG Matters **Speaker: A. Tarelli. Discussant: P. Uberti**
09:45	Price formation under asymmetry of information - a mean-field approach **Speaker: G. Lanaro**	Infinite-dimensional Wishart processes **Speaker: C. Cuchiero. Discussant: R. Frey** (09:45–10:00)	Impact of Climate transition on Credit portfolio's loss with stochastic collateral **Speaker: L. Sopgoui**
10:00	A saddle point in stopper vs. singular-controller games with free boundaries **Speaker: A. Bovo**		The puzzle of Carbon Allowance spread **Speaker: R. Baviera**
10:15	Optimal irreversible investments with price impact in a competing market: a singular stochastic game **Speaker: A. Pesce**	Calibration of the Bass Local Volatility model **Speaker: A. Marini. Discussant: P. Pigato** (10:15–10:30)	Climate risk and sovereign debt: scarcity effects in green bonds **Speaker A. Santini**
10:30	The explicit solution to a risk-sensitive ergodic singular stochastic control problem **Speaker: J. Gwee**		Imperfect information and ESG disagreement: an ambiguous portfolio selection model **Speaker: G. Bongermino**
10:45	Market Stackelberg-Cournot-Nash equilibria with Dempster-Shafer uncertainty and α-maxmin preferences **Speaker: S. Lorenzini**	General space multivariate Markov chain: a mixture transition distribution approach **Speaker: R. De Blasis**	LHP approximation for green loan credit portfolios under skewed and heavy-tails returns **Speaker: A. Ramponi**
11:00 AM - 11:30 AM	**Coffee Break**		

11:30 AM - 1:30 PM	**INTEREST RATE MODELS** **Chair: U. Cherubini**	**STOCHASTIC PROCESSES and CRYPTO MARKETS** **Chair: C. Cuchiero**	**GREEN FINANCE and PORTFOLIO** **Chair: P. Tankov**
11:30 11:45	Cross-Currency Heath-Jarrow-Morton Framework in the Multiple Curve Setting **Speaker: A. Gnoatto. Discussant: R. Baviera**	Time expansions for stochastic processes **Speaker: S. Svaluto-Ferro. Discussant: C. Cuchiero**	What common structure behind the ESG ratings? **Speaker: E. Ossola. Discussant: L. Ballestra**
12:00	A simple parsimonious framework for extracting and modelling the term structure of interest rates **Speaker: D. Palumbo. Discussant: A. Gnoatto** (12:00–12:15)	Warnings about Future Jumps: Properties of the Exponential Hawkes Model **Speaker: C. Mancini**	A stationary equilibrium model of green technology adoption with endogenous carbon price **Speaker: F. Dammann**
12:15		Growth rate of wealth in G3Ms **Speaker: T.-H. Wang. Discussant: M. Morini** (12:15–12:30)	Learning from Experts: Energy Efficiency in Residential Buildings **Speaker: V. Veggente**
12:30	International Evidence on Risk Premia for Nominal and Inflation-Linked Bonds: The Information in Long-Term Rates **Speaker: A. Berardi. Discussant: U. Cherubini** (12:30–12:45)		ESG evaluation for European Small and Medium Enterprises: A Multi-Criteria approach **Speaker: G. Filograsso**
12:45		The impact of cryptocurrencies in an equity investment universe for portfolio selection **Speaker: F. Luciani**	Behavioral dynamic portfolio selection with S-shaped utility and epsilon-contaminations **Speaker: B. Vantaggi. Discussant: G. Bottazzi** (12:45–01:00)
01:00	A simple model for the Euro Short-Term Rate **Speaker: S. Herzel**		
01:15			
1:30 PM - 2:45 PM	**Lunch**		