
Registration & welcome coffee

07:45 - 08:20
Quant Invest Summit

Participants

Aymeric Kalife - Associate Professor, Paris Dauphine University

Registration & welcome coffee

07:45 - 08:20
Quant Tech Summit

Participants

Massimo Morini - Head of Interest Rate and Credit Models, Banca IMI

Chairman's opening remarks

08:20 - 08:30
Quant Invest Summit

Participants

Aymeric Kalife - Associate Professor, Paris Dauphine University

Chairman's opening remarks

08:20 - 08:30
Quant Tech Summit

How to handle Liquidity Risk with machine learning, and why

08:30 - 09:10
Quant Invest Summit

Participants

Stefano Pasquali - Managing Director, Head of Liquidity Research, BlackRock

AI in Algorithmic Trading

08:30 - 09:10
Quant Tech Summit

Participants

Andrew Mann - Co-founder, Coinstrats

Registration, breakfast & networking time

08:30 - 09:00
Volatility Workshop

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

Workshop leader's opening remarks

09:00 - 09:05
Volatility Workshop

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

Fundamentals

09:05 - 10:30
Volatility Workshop

- Historical volatility estimation and implied volatility calculation
- How to construct a good implied volatility surface
- How to compute a fair skew in the absence of options
- Market facts: volatility regimes, handling earnings

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

A Case Study: From Emotions to Decisions

09:10 - 09:50
Quant Invest Summit

The partnership between an asset manager and a specialized startup to explore using a machine learning framework for NLP time-series analysis to guide investment decisions.

Participants

Sylvain Forté - CEO, SESAMm

Guillaume Garchery - Head of Quantitative Research and Development, La Française Investment Solutions

Finance and Healthcare: What is the relationship?

09:10 - 09:50
Quant Tech Summit

Participants

Kamer Ali Yuksel - Chief Data Scientist, ConnectedLife GmbH

Real World Interest Rate Model

09:50 - 10:30
Quant Invest Summit

Participants

Sergey Myagchilov - Investment Vice President, Prudential Financial

Integrating Alternative Data into Active Strategies

09:50 - 10:30
Quant Tech Summit

In this session we present new research on blending quantitative signals and fundamental insights. The focus will be on alternative data sources, including, analyst sentiment, news information, option trading, stock lending and aggregate hedge fund positions.

Participants

Hitendra Varsani - Executive Director, Equity Core Research, MSCI

Morning coffee & networking break

10:30 - 11:00
Quant Invest Summit

Morning coffee & networking break

10:30 - 11:00
Quant Tech Summit

Morning coffee & networking break

10:30 - 11:00
Volatility Workshop

The convexity profile of trend-following strategies

11:00 - 11:40
Quant Invest Summit

Evaluating the diversification benefits of trend-following strategies

Participants

Artur Sepp - Head of Research, Quantica Capital AG

Transforming financial markets through smart contracts and blockchains

11:00 - 11:40
Quant Tech Summit

Participants

Massimo Morini - Head of Interest Rate and Credit Models, Banca IMI

Volatility models

11:00 - 12:30

Volatility Workshop

- Review of the most commonly used volatility models: Black-Scholes, Local Volatility model, Heston model, SABR models, stochastic local volatility model. Path dependent models, fractional volatility
- Implementation of the Local Volatility model
- Implementation of Local Stochastic Volatility models
- Machine Learning to create data driven models
- Case studies: Barrier options, AutoCallables and Accumulators

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

Crowding in institutional trading - what should you do about it?

11:40 - 12:20

Quant Invest Summit

Participants

Zoltan Eisler - Co-Head of Execution, Capital Fund Management

The Distributed Ledger for the Borderless Economy

11:40 - 12:20

Quant Tech Summit

A distributed ledger is a tamperproof sequence of data that can be read and augmented by everyone. Distributed ledgers stand to revolutionize the way democratic societies and traditional economies operate. They secure all kinds of traditional transactions –such as payments, asset transfers, titling– in the exact order in which they occur; and enable totally new transactions –such as cryptocurrencies and smart contracts. They can remove intermediaries and usher in a new paradigm for trust. As currently implemented, however, distributed ledgers cannot achieve their enormous potential. The global participation and trust necessary to realize an inclusive and borderless economy require substantially better technology.

Algorand is an alternative, democratic, and efficient distributed ledger. Unlike prior ledgers based on 'proof of work', it dispenses with 'miners'. Indeed, Algorand requires only a negligible amount of computation. Moreover, its transaction history does not 'fork' with overwhelming probability: i.e., Algorand guarantees the finality of all transactions.

In addition, Algorand guarantees flexible self-governance. A successful society and economy must be able to evolve. A cryptocurrency cannot be an ocean liner on autopilot. By using its hallmark propose-and-agree process, Algorand can consensually correct its course, as necessary or desirable, without any 'hard forks', to meet the current and future needs of the community.

Participants

Silvio Micali - Founder, Algorand

Know and manage your customers risk appetite: from fund product design to risk management perspectives

12:20 - 13:00

Quant Invest Summit

Participants

Aymeric Kalife - Associate Professor, Paris Dauphine University

Crypto trading practicalities

12:20 - 13:00

Quant Tech Summit

How to setup such a project? What is the scope of returns for cryptos as an asset class?

Participants

Alexandru Agachi - Co-founder and COO, Empiric Capital

Paul Pop - Co-founder, Neurolabs

Andrew Mann - Co-founder, Coinstrats

David Fauchier - Founder & CIO, Cambrial Capital

Lunch

12:30 - 13:30

Volatility Workshop

Lunch

13:00 - 14:00

Quant Invest Summit

Lunch

13:00 - 14:00

Quant Tech Summit

Volatility derivatives

13:30 - 15:00

Volatility Workshop

- Variance swaps, replication, practical issues
- Volatility swaps
- Cross corridor variance swaps
- VIX: Spot, Futures, options and ETFs
- Options on realized variance

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

Passive vs active asset management

14:00 - 14:40

Quant Invest Summit

Can active investments consistently beat the market and justify the associated fees? To what extent is passive asset management a better and less risky return?

Participants

Moderator: Hitendra Varsani - Executive Director, Equity Core Research, MSCI

Panellist: Arta Babae - Academic Visitor, Imperial College London

Panellist: Iuliia Shpak, PhD - Quant Strategies Specialist, Sarasin & Partners LLP

Panellist: Michael Stelarios - Global Head of Quantitative Execution Services, Goldman Sachs

Forecasting Stock Market Returns using Machine Learning Models

14:00 - 14:40

Quant Tech Summit

Successful market timing strategies depend on superior forecasting ability. We use predictive machine learning model consisting of investor sentiment, current business conditions, economic policy uncertainty, credit spreads, and financial uncertainty. These indices are combined to create two additional forecast models, a "kitchen sink logistic regression" and a "least absolute square shrinkage and selection operator." The individual indices and the combined models are used to predict the one-month ahead returns of the S&P 500 Index (SPX). In order to determine how successful each strategy is at forecasting the market direction, a "beta optimization" strategy is implemented. We determine the individual forecast indices and the combined portfolios consistently have higher annual returns and lower monthly drawdowns than the buy-and-hold S&P 500 Stock Index portfolio.

Participants

David Mascio - Managing Founder and Principal, Della Parola Capital Management, LLC

Quant ETF strategies: using the flexibility of ETFs and the rigor of quantitative research to build active global asset allocation strategies

14:40 - 15:20

Quant Invest Summit

Evaluating the benefits of ETFs and how quants can help improve automation and returns

Participants

George Mylnikov - Vice President, Head of Quantitative Research, Charles Schwab Investment Advisory

Macro Machine Learning Systematic Strategies

14:40 - 15:20

Quant Tech Summit

How many funds are basing their strategies on machine learning?

Participants

Ian McWilliam - Analyst, Aberdeen Standard Investments

Afternoon tea & networking break

15:00 - 15:30

Volatility Workshop

Afternoon tea & networking break

15:20 - 15:50

Quant Invest Summit

Afternoon tea & networking break

15:20 - 15:50

Quant Tech Summit

Volatility trading & arbitrage

15:30 - 17:00

Volatility Workshop

- Volatility as an asset class
- Frequency/phase arbitrage
- Skew trades
- Term structure of VIX arbitrage
- Earning trades: 3 ways to play forward variance

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

Investment management and the role of time horizons

15:50 - 16:30

Quant Invest Summit

Participants

Arta Babae - Academic Visitor, Imperial College London

Reverse quantum annealing approach to portfolio optimization problems

15:50 - 16:30

Quant Tech Summit

Finding optimal parameters for the reverse quantum annealing protocol

Participants

Alexei Kondratyev - Managing Director, Head of Data Analytics, Electronic Market Solutions, Standard Chartered Bank

Applications of Alternative Data

16:30 - 17:10

Quant Invest Summit

A structured approach to delivering alternative data to Systematic Investment Managers

Participants

Matt Napoli - General Manager, International Business Development, 1010data

Cryptography in the Quantum Age

16:30 - 17:10

Quant Tech Summit

Challenges facing cryptography when quantum computers become viable as well as the state-of-the-art work done by academics, industry, and standards bodies on building quantum-secure cryptosystems for the future

Participants

Ananth Raghunathan - Senior Research Scientist, Google

Workshop leader's closing remarks

17:00 - 17:15

Volatility Workshop

What do investors look for in a quant fund?

17:10 - 17:50

Quant Invest Summit

Weighing up which factors and components of products are most attractive to today's discerning investors

Participants

Alexandru Agachi - Co-founder and COO, Empiric Capital

Bernhard Silli - Partner, Alcova Asset Management

Myles Watkiss - Head of Fund Research, Culross Global

SESSIONS

QuantMinds
International

11 - 15 May 2020
Grand Elysée Hotel
Hamburg

PLEASE NOTE THIS IS THE 2019 AGENDA. THE 2020 AGENDA WILL BE RELEASED IN DUE COURSE. QUANTINVEST SUMMIT, QUANTTECH SUMMIT, VOLATILITY WORKSHOP - 13/05/2019

Quantum Computing and Applications in Finance

17:10 - 17:50
Quant Tech Summit

Participants

Stefan Woerner - Global Leader for Quantum Finance & Optimization, IBM Research

Chairman's closing remarks

17:50 - 18:00
Quant Invest Summit

Participants

Aymeric Kalife - Associate Professor, Paris Dauphine University

Chairman's closing remarks

17:50 - 18:00
Quant Tech Summit

Networking drinks reception & champagne roundtable discussion groups

18:00 - 19:00
Quant Invest Summit

A chance for everyone to network and relax after the day's presentations and discussions. Champagne Discussion Groups offer delegates a chance to delve deeper into timely topics of the day and network with specific VIP speakers

Roundtable 1: Peter Austing, Citadel: Buy side quant vs sell side quant

Roundtable 2: Daniel Mayenberger, Barclays: Model risk management practices for AI/Machine Learning

Roundtable 3: Massimo Morini & Marco Bianchetti, BANCA IMI & Intesa Sanpaolo: Libor and Overnight Transformation and Fallback

Roundtable 4: Kamer Yuksel, ConnectedLife: What can be the possible frameworks for collaboration with external researchers?

Participants

Peter Austing - Quantitative Researcher, Citadel

Daniel Mayenberger - European Head of Large Model Frameworks, Barclays

Massimo Morini - Head of Interest Rate and Credit Models, Banca IMI

Marco Bianchetti - Head of Fair Value Policy, Intesa Sanpaolo

Kamer Ali Yuksel - Chief Data Scientist, ConnectedLife GmbH

Networking drinks reception & champagne roundtable discussion groups

18:00 - 19:00
Quant Tech Summit

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Participants

Peter Austing - Quantitative Researcher, Citadel

Daniel Mayenberger - European Head of Large Model Frameworks, Barclays

Massimo Morini - Head of Interest Rate and Credit Models, Banca IMI

Marco Bianchetti - Head of Fair Value Policy, Intesa Sanpaolo

Kamer Ali Yuksel - Chief Data Scientist, ConnectedLife GmbH

End of Quant Invest Summit

19:00 - 19:05
Quant Invest Summit

End of QuantTech Summit

19:00 - 19:05
Quant Tech Summit

Participants

Massimo Morini - Head of Interest Rate and Credit Models, Banca IMI

SCHEDULE

QuantMinds
International

PLEASE NOTE THIS IS THE 2019 AGENDA. THE 2020 AGENDA WILL BE RELEASED IN DUE COURSE. QUANTINVEST SUMMIT, QUANTTECH SUMMIT, VOLATILITY WORKSHOP - 13/05/2019

11 - 15 May 2020
Grand Elysée Hotel
Hamburg

TIME	QUANT INVEST SUMMIT	QUANT TECH SUMMIT	VOLATILITY WORKSHOP
07:00	07:45 - Registration & welcome coffee	07:45 - Registration & welcome coffee	
08:00	08:20 - Chairman's opening remarks 08:30 - How to handle Liquidity Risk with machine learning, and why	08:20 - Chairman's opening remarks 08:30 - AI in Algorithmic Trading	08:30 - Registration, breakfast & networking time
09:00	09:10 - A Case Study: From Emotions to Decisions 09:50 - Real World Interest Rate Model	09:10 - Finance and Healthcare: What is the relationship? 09:50 - Integrating Alternative Data into Active Strategies	09:00 - Workshop leader's opening remarks 09:05 - Fundamentals
10:00	10:30 - Morning coffee & networking break	10:30 - Morning coffee & networking break	10:30 - Morning coffee & networking break
11:00	11:00 - The convexity profile of trend-following strategies 11:40 - Crowding in institutional trading - what should you do about it?	11:00 - Transforming financial markets through smart contracts and blockchains 11:40 - The Distributed Ledger for the Borderless Economy	11:00 - Volatility models
12:00	12:20 - Know and manage your customers risk appetite: from fund product design to risk management perspectives	12:20 - Crypto trading practicalities	12:30 - Lunch
13:00	13:00 - Lunch	13:00 - Lunch	13:30 - Volatility derivatives
14:00	14:00 - Passive vs active asset management 14:40 - Quant ETF strategies: using the flexibility of ETFs and the rigor of quantitative research to build active global asset allocation strategies	14:00 - Forecasting Stock Market Returns using Machine Learning Models 14:40 - Macro Machine Learning Systematic Strategies	
15:00	15:20 - Afternoon tea & networking break 15:50 - Investment management and the role of time horizons	15:20 - Afternoon tea & networking break 15:50 - Reverse quantum annealing approach to portfolio optimization problems	15:00 - Afternoon tea & networking break 15:30 - Volatility trading & arbitrage
16:00	16:30 - Applications of Alternative Data	16:30 - Cryptography in the Quantum Age	
17:00	17:10 - What do investors look for in a quant fund? 17:50 - Chairman's closing remarks	17:10 - Quantum Computing and Applications in Finance 17:50 - Chairman's closing remarks	17:00 - Workshop leader's closing remarks
18:00	18:00 - Networking drinks reception & champagne roundtable discussion groups	18:00 - Networking drinks reception & champagne roundtable discussion groups	
19:00	19:00 - End of Quant Invest Summit	19:00 - End of QuantTech Summit	

Registration & welcome coffee

07:35 - 08:10

Chairman's opening remarks

08:10 - 08:20

Plenary

Participants

Vladimir Lucic - Head of Non-Linear QIS Structuring, Macquarie

Machine learning: Separating fact from fiction

08:20 - 09:00

Plenary

Cutting through the hype with 10 examples where machine learning is playing a key role in finance

Participants

Marcos López de Prado - Adjunct Professor, Financial Machine Learning, Cornell University

FRTB Panel

08:20 - 09:00

In the boardroom discussion

How are quants approaching the FRTB framework?

Participants

Bo Boisen - Director FRTB and Risk Data Platform, Nordea

Britta Achmann - Head of Business Implementation, Risk Change, Deutsche Bank

New Intel® Optane™ DC Persistent Memory (DCPMM): Accelerating the Kx kdb+ Time Series Database

09:00 - 09:40

Plenary

The New Intel® memory technology released on April the 4th 2019 is presented. Operating modes along with their performance implications are discussed. Kx kdb+ POC/enabling efforts/ are shared. Great results obtained for STAC M3 test suite with kdb+ v3.6 on a Lenovo ThinkSystem SR950 with Intel Xeon Platinum 8280L CPUs and DCPMM are presented.

Participants

Evgueny Khartchenko - Software Application Engineer, Intel

Deploying trading strategies using Machine Learning

09:00 - 09:40

In the boardroom discussion

Participants

Andrea Nardon - Partner, Portfolio Manager, Head of Quant, Sarasin & Partners

GDPR and the FinTech Start-Up

09:40 - 10:20

Plenary

Participants

Erik Vynckier - Chairman of the Investment Committee and a member of the Risk and Capital Committee, Foresters Friendly Society

Can we model tail risk?

09:40 - 10:20

In the boardroom discussion

Participants

Robert Macrae - Research Associate, Systemic Risk Centre, Systemic Risk Centre

Making Things Happen

10:20 - 11:00

Plenary

The Psychology of Influence, Motivation & Results

Participants

Stephen Gribben - Founder, CoachPro.online

Liquidity at Risk: a new approach to credit risk modeling and stress testing

10:20 - 11:00

In the boardroom discussion

- What is default?
- Liquidity and solvency
- Joint modelling of solvency and liquidity
- Liquidity-solvency diagram
- Liquidity-at-Risk
- Application to bank stress tests

Participants

Rama Cont - Chair of Mathematical Finance, University of Oxford

Morning coffee & networking break

11:00 - 11:30

Chairman's opening remarks

11:30 - 11:40

A: Interest rate modelling & trading

Participants

Andrew McClelland - Director, Quantitative Research, Numerix

Chairman's opening remarks

11:30 - 11:40

B: Option pricing & volatility

Participants

Vladimir Lucic - Head of Non-Linear QIS Structuring, Macquarie

Chairman's opening remarks

11:30 - 11:40

C: Algo trading, e-trading & machine learning

Participants

Richard Turner - Head of Research, Currency Alpha, Mesirow Financial

Chairman's opening remarks

11:30 - 11:40

D: CCR, Collateral & Central Clearing

Participants

Andrew Dickinson - Director, Bank of America Merrill Lynch

How to use the machine learning results for (rough) volatility in practice?

11:30 - 13:00

E: Masterclass

Participants

Blanka Horvath - Lecturer in Financial Mathematics, King's College London

Aitor Muguruza Gonzalez - Equities Quant, Natixis

Mehdi Tomas - PhD Student, École Polytechnique

Looking Forward to Backward-Looking Rates: A Modeling Framework for Terms Rates Replacing LIBOR

11:40 - 13:00

A: Interest rate modelling & trading

Participants

Fabio Mercurio - Global Head of Quant Analytics, Bloomberg L.P.

Analytical conversion between implied volatilities based on different dividend models

11:40 - 12:20

B: Option pricing & volatility

Participants

Vladimir Jovanovic - Director - Equity Derivatives
Quant, Barclays

Vladimir Lucic - Head of Non-Linear QIS Structuring,
Macquarie

Recommender systems for Corporate Bond Trading

11:40 - 12:20

C: Algo trading, e-trading & machine learning

We will discuss how a recommender system can be used in a finance: focusing on the methodology details, data requirements and how to apply the technology in practice.

Participants

Luca Capriotti - Global Head Quantitative Strategies
Credit and Financing, Credit Suisse

Dominic Wright - Quantitative Strategies Credit, Credit
Suisse

CCPs: quantifying risks posed by direct clearing in the wake of the default at Nasdaq AB

11:40 - 12:20

D: CCR, Collateral & Central Clearing

- We propose a quantitative framework for investigating the risks posed by direct client clearing
- We present new results on CCP valuation adjustments extending those in Andersen and Dickinson (2018) which demonstrates that the risks posed by poorly diversified members may be greatly larger than diversified broker-dealers
- Consequences for CCP structure, membership and equitable initial margin levels are discussed

Participants

Andrew Dickinson - Director, Bank of America Merrill
Lynch

Getting Quantos to smile

12:20 - 13:00

B: Option pricing & volatility

Participants

George Hong - Head of APAC Quantitative & Risk
Strategies, Credit Suisse

Evolution of execution dynamics and advances in trading technology

12:20 - 13:00

C: Algo trading, e-trading & machine learning

Modelling volatility, covariance and flow co-movement, alongside applied big data innovations, to improve trading performance

Participants

Michael Steliaros - Global Head of Quantitative
Execution Services, Goldman Sachs

Reducing the initial margin load

12:20 - 13:00

D: CCR, Collateral & Central Clearing

The first 3 phases of the regulatory initial margin requirements for non-centrally cleared OTC derivatives are already implemented and phase 4 / 5 will go live in September 2019 / 2020 with around 1'000 additional counterparties being required to collect and post initial margins. More than USD 90 billion of regulatory initial margins are collected respectively posted by the counterparties of phase 1-3 already today. It is estimated that equity products account for 35% of all regulatory initial margins making equity products the product class with the highest contribution. The aim of the presentation is to demonstrate and explain how the initial margins for equity derivatives can be significantly reduced by using the alternative approach of the ISDA Standard Initial Margin Model (SIMM). The presentation will also elaborate on the challenges of the corresponding implementation.

Participants

Alexander Giese - Managing Director, Head of
Quantitative and Digital Development for Trading,
UniCredit

Lunch

13:00 - 14:00

Advances in Tenor Basis Modeling: Boundedness, Specification and Calibration

14:00 - 14:40

A: Interest rate modelling & trading

- Tenor basis in XVA and its impact on calibrated discount-rate volatilities
- A Cheyette-style multi-curve model with lower-bounded tenor spreads
- Addressing a complicated HJM-style drift condition on the multi-curve model
- Calibrating to historical basis-spread behavior (jointly with swaptions)
- Impact of benchmark rate reforms on multi-curve modeling and calibration

Participants

Andrew McClelland - Director, Quantitative Research,
Numerix

The VIX future in Bergomi models

14:00 - 14:40

B: Option pricing & volatility

We derive the expansion of the prices of VIX futures in various Bergomi models at order 6 in small volatility-of-volatility. The expansion allows us to precisely pinpoint the roles of volatility-of-volatility and mean-reversion in the formation of the prices of VIX futures. It also sheds light on the (in)ability of traditional continuous-time continuous-paths stochastic volatility models to jointly calibrate S&P 500 options, VIX futures, and VIX options. We cover the one-factor, two-factor, and skewed two-factor Bergomi models and allow for maturity-dependent and/or time-dependent parameters. The proof naturally involves the (classical or dual bivariate) Hermite polynomials and exploits their orthogonality properties. When the initial term-structure of variance swaps is flat, the expansion is a closed form expression. Otherwise, it involves one-dimensional integrals which must be numerically computed. Often the expansion is very precise, even for very large values of volatility-of-volatility.

Participants

Julien Guyon - Senior Quant, Bloomberg L.P.

Deep execution: generative models in algo trading

14:00 - 14:40

C: Algo trading, e-trading & machine learning

Participants

Patrik Karlsson - Electronic Trading Quant, SEB

Hanna Hultin - Industrial PhD student, SEB

Efficient calculation techniques for credit exposure in the presence of initial margin

14:00 - 14:40

D: CCR, Collateral & Central Clearing

Participants

Michael Pykhtin - Manager, Quantitative Risk, U.S.
Federal Reserve Board

Chair's opening remarks

14:00 - 14:05

E: Quantitative asset allocation strategies

Participants

Bernd Scherer - Head Of Private Wealth Portfolio
Management, Head of Product Development,
Bankhaus Lampe KG

Machine Learning for quant problems

14:05 - 14:45

E: Quantitative asset allocation strategies

Participants

Wim Schoutens - Professor Of Financial Engineering,
University of Leuven

Learning Interest Rate Interpolation

14:40 - 15:20

A: Interest rate modelling & trading

- Rates interpolation must be treated as a replication problem: a non-traded asset as a function of the dynamic of the traded assets

- It's a Reinforcement Learning problem similar to Halperin's QLBS

- Hedge a portfolio containing all possible maturities with the traded (zero) bonds and learn the optimal weights of each traded bond for each day

- Able to treat OIS based curves with a FED-Funds-like underlying rate

- Once best interpolation function is determined use the same method on traded bonds to reduce dimensionality and find key points of the curve

Participants

Marcos Costa Santos Carreira - PhD Candidate, École Polytechnique

The Dangers of Recalibration

14:40 - 15:20

B: Option pricing & volatility

- Recalibration as a market practice: logical and practical issues
- The geometry of dynamic arbitrage
- Is it safe to recalibrate Black-Scholes, LVM, Heston, SABR...?

Participants

Bruno Dupire - Head Of Quantitative Research,
Bloomberg L.P.

Better hedging through deep learning

14:40 - 15:20

C: Algo trading, e-trading & machine learning

Participants

Mark Higgins - COO, Beacon Platform Inc.

The value of Convexity: implied and realised convexity for long dated bonds

14:40 - 15:20

D: CCR, Collateral & Central Clearing

Participants

Jessica James - Managing Director, Senior
Quantitative Researcher, Commerzbank AG

Factor Investing - Managing Specification Choices

14:45 - 15:20

E: Quantitative asset allocation strategies

- Design clusters
- Factor design and cross sectional dispersion
- Factor design and time series dispersion
- Design choice and research governance
- Factor fishing

Participants

Bernd Scherer - Head Of Private Wealth Portfolio
Management, Head of Product Development,
Bankhaus Lampe KG

Afternoon tea & networking break

15:20 - 15:50

How to effectively model cash settled swaptions

15:50 - 16:30

A: Interest rate modelling & trading

Participants

Viatcheslav Belyaev - Founder, Quant Hedge Analytic

Quantum mechanics-based methods for option pricing

15:50 - 16:30

B: Option pricing & volatility

Participants

Luca Capriotti - Global Head Quantitative Strategies
Credit and Financing, Credit Suisse

Quantifying Endogenous High-Frequency Trading

15:50 - 16:30

C: Algo trading, e-trading & machine learning

Participants

Mikko Pakkanen - Leader, Imperial Network of
Excellence in Probabilistic Methods and Modelling,
Imperial College London

Repo convexity: utilising bond derivative basis volatility to model repo rates

15:50 - 16:30

D: CCR, Collateral & Central Clearing

Participants

Paul McCloud - Head of Global Fixed Income
Quantitative Research, Nomura

Rethinking market impact

15:50 - 16:30

E: Quantitative asset allocation strategies

Contradictory views of 'market impact'

The 'square root law' of market impact

The role of trade duration and market volatility

How does execution cost depend on trade size?

How does execution cost depend on trading speed?

Back to basics

Participants

Rama Cont - Chair of Mathematical Finance, University
of Oxford

Systematic derivation of analytic pricing kernels for short rate and hybrid modelling

16:30 - 17:10

A: Interest rate modelling & trading

Participants

Colin Turfus - Quantitative Analyst, Deutsche Bank

Derivatives Pricing with A Deep Learning Approach

16:30 - 17:10

B: Option pricing & volatility

Participants

Youssef Elouerkhaoui - Managing Director And Global
Head Of Credit & Commodities Quantitative Analysis,
Citigroup

Optimal investment strategy in stochastic and local volatility models

16:30 - 17:10

C: Algo trading, e-trading & machine learning

- We revisit the classical Merton optimal allocation problem
- We consider local and stochastic volatility models
- Significant corrections to the Merton ratio arise from hard to observe behaviour of the variance process around zero
- Adjustment to the myopic Merton ratio can be largely deduced from observed option prices
- Deep learning as an approach to determine model-free optimal investment strategy

Participants

Vladimir Piterbarg - MD, Head of Quantitative Analytics and Quantitative Development, NatWest Markets

Convexity with collateral switch/floor options, semi analytic approach

16:30 - 17:10

D: CCR, Collateral & Central Clearing

Participants

Emiliano Papa - Director - Head of Rates and FX, Deutsche Bank

A blueprint for deriving multiple efficient and coherent asset allocations for premium and private banking clients in CEE

16:30 - 17:10

E: Quantitative asset allocation strategies

Participants

Stefan Theussl - Senior Quant Analyst, Raiffeisen Bank International AG

Algebraic formulation of a tractable multicurrency model

17:10 - 17:50

A: Interest rate modelling & trading

Participants

Gregory Pelts - Quant, Wells Fargo & Co

Quantifying Model Performance

17:10 - 17:50

B: Option pricing & volatility

Participants

Alexandre Antonov - Director, Standard Chartered Bank

Parameterized families of calendar correlations: decoding oil and beyond

17:10 - 17:50

C: Algo trading, e-trading & machine learning

*Empirical properties of historical realized commodities correlations

*Parametric families for calendar correlations

*Dynamics for instantaneous correlation

*Calibration of the model and results

Participants

Roza Galeeva - Professor, NYU

Collateralized Networks

17:10 - 17:50

D: CCR, Collateral & Central Clearing

Participants

Samim Ghamami - Financial Economist, Goldman Sachs

Time consistency on the mean-risk asset allocation problem

17:10 - 17:50

E: Quantitative asset allocation strategies

We consider the dynamic mean-risk asset allocation problem. Usually, a weighted sum of the two objectives mean and risk is considered to turn the problem into an optimization problem with a single objective. But it is well known that this problem does not satisfy the (scalar) Bellman principle of dynamic programming. However, when we leave it in its original form as a vector optimization problem, the upper images, whose boundary is the efficient frontier, recurse backwards in time. Conditions are presented under which this recursion can be exploited directly to compute a solution in the spirit of dynamic programming. Numerical examples illustrate the obtained results.

Participants

Birgit Rudloff - Professor of Mathematics for Economics and Business, Vienna University of Economics and Business

Chairman's closing remarks

17:50 - 17:55

A: Interest rate modelling & trading

Participants

Andrew McClelland - Director, Quantitative Research, Numerix

Chairman's closing remarks

17:50 - 17:55

B: Option pricing & volatility

Participants

Vladimir Lucic - Head of Non-Linear QIS Structuring, Macquarie

Chairman's closing remarks

17:50 - 17:55

C: Algo trading, e-trading & machine learning

Participants

Richard Turner - Head of Research, Currency Alpha, Mesirow Financial

Chairman's closing remarks

17:50 - 17:55

D: CCR, Collateral & Central Clearing

Participants

Andrew Dickinson - Director, Bank of America Merrill Lynch

Chairman's closing remarks

17:50 - 17:55

E: Quantitative asset allocation strategies

Participants

Bernd Scherer - Head Of Private Wealth Portfolio Management, Head of Product Development, Bankhaus Lampe KG

SESSIONS

PLEASE NOTE THIS IS THE 2019 AGENDA. THE 2020 AGENDA WILL BE RELEASED IN DUE COURSE. MAIN CONFERENCE DAY 1 - 14/05/2019

QuantMinds
International

11 - 15 May 2020
Grand Elysée Hotel
Hamburg

Networking drinks reception & champagne roundtable discussion groups

17:55 - 18:55

A chance for everyone to network and relax after the day's presentations and discussions.

Champagne Discussion Groups offer delegates a chance to delve deeper into timely topics of the day and network with specific VIP speakers.

Roundtable 1: Stefan Pomberger: Digital disruption in the private placement & loan market - what does this new financing market hold for issuers and investors?

Roundtable 2: Stephen Gribben: Leading Through Change & Uncertainty

Roundtable 3: Peter Carr: Volatility and early exercise

Roundtable 4: Helyette Geman: Bitcoins: Are they Back?

Roundtable 5: Charbel Gereige: Quants come from mars and Developers come from Venus

Participants

Stefan Pomberger - Executive Director, Head of the Fixed Income Quant Group, Vontobel Investment Banking

Stephen Gribben - Founder, CoachPro.online

Peter Carr - Department Chair, Finance and Risk Engineering, NYU Tandon School

Helyette Geman - Director, Commodity Finance Centre, Birbeck, University Of London & John Hopkins University

Charbel Gereige - Automated Asset Allocation Developers Lead, BlackRock

End of main conference day 1

18:55 - 19:00

SCHEDULE

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TIME	A: INTEREST RATE MODELLING & TRADING	B: OPTION PRICING & VOLATILITY	C: ALGO TRADING, E-TRADING & MACHINE LEARNING	D: CCR, COLLATERAL & CENTRAL CLEARING	E: MASTERCLASS	E: QUANTITATIVE ASSET ALLOCATION STRATEGIES	IN THE BOARDROOM DISCUSSION	PLENARY
07:00	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee	07:35 - Registration & welcome coffee
08:00							08:20 - FRTB Panel	08:10 - Chairman's opening remarks 08:20 - Machine learning: Separating fact from fiction
09:00							09:00 - Deploying trading strategies using Machine Learning 09:40 - Can we model tail risk?	09:00 - New Intel® Optane™ DC Persistent Memory (DCP-MM): Accelerating the Kx kdb+ Time Series Database 09:40 - GDPR and the FinTech Start-Up
10:00							10:20 - Liquidity at Risk: a new approach to credit risk modeling and stress testing	10:20 - Making Things Happen

SCHEDULE

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11:00	<p>11:00 - Morning coffee & networking break</p> <p>11:30 - Chairman's opening remarks</p> <p>11:40 - Looking Forward to Backward-Looking Rates: A Modeling Framework for Terms Rates Replacing LIBOR</p>	<p>11:00 - Morning coffee & networking break</p> <p>11:30 - Chairman's opening remarks</p> <p>11:40 - Analytical conversion between implied volatilities based on different dividend models</p>	<p>11:00 - Morning coffee & networking break</p> <p>11:30 - Chairman's opening remarks</p> <p>11:40 - Recommender systems for Corporate Bond Trading</p>	<p>11:00 - Morning coffee & networking break</p> <p>11:30 - Chairman's opening remarks</p> <p>11:40 - CCPs: quantifying risks posed by direct clearing in the wake of the default at Nasdaq AB</p>	<p>11:00 - Morning coffee & networking break</p> <p>11:30 - How to use the machine learning results for (rough) volatility in practice?</p>	<p>11:00 - Morning coffee & networking break</p>	<p>11:00 - Morning coffee & networking break</p>	<p>11:00 - Morning coffee & networking break</p>
12:00		<p>12:20 - Getting Quantos to smile</p>	<p>12:20 - Evolution of execution dynamics and advances in trading technology</p>	<p>12:20 - Reducing the initial margin load</p>				
13:00	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>	<p>13:00 - Lunch</p>
14:00	<p>14:00 - Advances in Tenor Basis Modeling: Boundedness, Specification and Calibration</p> <p>14:40 - Learning Interest Rate Interpolation</p>	<p>14:00 - The VIX future in Bergomi models</p> <p>14:40 - The Dangers of Recalibration</p>	<p>14:00 - Deep execution: generative models in algo trading</p> <p>14:40 - Better hedging through deep learning</p>	<p>14:00 - Efficient calculation techniques for credit exposure in the presence of initial margin</p> <p>14:40 - The value of Convexity: implied and realised convexity for long dated bonds</p>		<p>14:00 - Chair's opening remarks</p> <p>14:05 - Machine Learning for quant problems</p> <p>14:45 - Factor Investing - Managing Specification Choices</p>		

SCHEDULE

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15:00	<p>15:20 - Afternoon tea & networking break</p> <p>15:50 - How to effectively model cash settled swaptions</p>	<p>15:20 - Afternoon tea & networking break</p> <p>15:50 - Quantum mechanics-based methods for option pricing</p>	<p>15:20 - Afternoon tea & networking break</p> <p>15:50 - Quantifying Endogenous High-Frequency Trading</p>	<p>15:20 - Afternoon tea & networking break</p> <p>15:50 - Repo convexity: utilising bond derivative basis volatility to model repo rates</p>	<p>15:20 - Afternoon tea & networking break</p>	<p>15:20 - Afternoon tea & networking break</p> <p>15:50 - Rethinking market impact</p>	<p>15:20 - Afternoon tea & networking break</p>	<p>15:20 - Afternoon tea & networking break</p>
16:00	<p>16:30 - Systematic derivation of analytic pricing kernels for short rate and hybrid modelling</p>	<p>16:30 - Derivatives Pricing with A Deep Learning Approach</p>	<p>16:30 - Optimal investment strategy in stochastic and local volatility models</p>	<p>16:30 - Convexity with collateral switch/floor options, semi analytic approach</p>		<p>16:30 - A blueprint for deriving multiple efficient and coherent asset allocations for premium and private banking clients in CEE</p>		
17:00	<p>17:10 - Algebraic formulation of a tractable multicurrency model</p> <p>17:50 - Chairman's closing remarks</p> <p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:10 - Quantifying Model Performance</p> <p>17:50 - Chairman's closing remarks</p> <p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:10 - Parameterized families of calendar correlations: decoding oil and beyond</p> <p>17:50 - Chairman's closing remarks</p> <p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:10 - Collateralized Networks</p> <p>17:50 - Chairman's closing remarks</p> <p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:10 - Time consistency on the mean-risk asset allocation problem</p> <p>17:50 - Chairman's closing remarks</p> <p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>	<p>17:55 - Networking drinks reception & champagne roundtable discussion groups</p>
18:00	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>	<p>18:55 - End of main conference day 1</p>

Registration & welcome coffee

08:00 - 08:20

Chairman's opening remarks

08:20 - 08:25

A: Quant 2.0: Being A Quant In The New Era

Participants

Paul Bilokon - Founder, CEO, Chairman, Thalesians Ltd

Chairman's opening remarks

08:20 - 08:25

B: Volatility Modelling & Trading

Participants

Lorenzo Bergomi - Head of Quantitative Research, Société Générale

Chairman's opening remarks

08:20 - 08:25

C: Regulation developments

Participants

Shearin Cao - Technical Specialist, Traded Risk Management, Standard Chartered

Chairman's opening remarks

08:20 - 08:25

D: Computational & Numerical Efficiency

Participants

Antoine Savine - Quantitative Research, Danske Bank

Chairman's opening remarks

08:20 - 08:25

E: Innovations In Data, Modelling & Quant Finance

Participants

Matt Napoli - General Manager, International Business Development, 1010data

Diversity in quant finance: Examining the route to progress

08:25 - 09:05

A: Quant 2.0: Being A Quant In The New Era

Participants

Jessica James - Managing Director, Senior Quantitative Researcher, Commerzbank AG

Katia Babbar - Visiting Research Fellow, University of Oxford and Founder, AI Wealth Technologies

Birgit Rudloff - Professor of Mathematics for Economics and Business, Vienna University of Economics and Business

Oliver Cooke - Managing Director, Head of Selby Jennings - North America, Phaidon International

A Neural Network Approach to Understanding Implied Volatility Movements

08:25 - 09:05

B: Volatility Modelling & Trading

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

IBORs reform: User guide for quants and risk managers

08:25 - 09:05

C: Regulation developments

Participants

Marco Scaringi - Quantitative Analyst, Intesa Sanpaolo

Marco Bianchetti - Head of Fair Value Policy, Intesa Sanpaolo

Globalization of adjoints

08:25 - 09:05

D: Computational & Numerical Efficiency

Participants

Uwe Naumann - Professor Of Computer Science, RWTH Aachen University

Quantum annealing for machine learning: Applications in finance

08:25 - 09:05

E: Innovations In Data, Modelling & Quant Finance

- Solving optimisation problems with quantum annealing
- Quantum Boltzmann Machine
- Training strong classifiers with quantum annealing
- Hybrid quantum-classical algorithm

Participants

Alexei Kondratyev - Managing Director, Head of Data Analytics, Electronic Market Solutions, Standard Chartered Bank

10+ years since Lehman – Reflecting on lessons learned from the last crisis and examining advances in modelling of the financial system

09:05 - 09:45

A: Quant 2.0: Being A Quant In The New Era

- Analysis of subprime and euro crisis
- Difficulties in handling risk (in particular credit risk) as the origin of the crisis
- Weakness of banking regulation and developments
- Pitfalls of quantitative methods in finance
- Developments in the regulation of financial markets?
- Bail-in, bail-out or default?
- Do we need a narrow banking?

Participants

Emilio Barucci - Professor, Polytechnic University of Milan

New Arbitrage-Free Parametric Volatility Surface

09:05 - 09:45

B: Volatility Modelling & Trading

Participants

Michael Konikov - SVP, Head of Quantitative Development, Numerix

Benchmark replacements and benchmark transition aware pricing

09:05 - 09:45

C: Regulation developments

Participants

Hans Peter Wächter - Senior Manager, d-fine

Pricing digital options with adaptive scheme

09:05 - 09:45

D: Computational & Numerical Efficiency

Participants

Julien Hok - Director, Quantitative Analysis, Credit Agricole-CIB

Allocating the risk budget in an optimal way using machine learning

09:05 - 09:45

E: Innovations In Data, Modelling & Quant Finance

Participants

Richard Turner - Head of Research, Currency Alpha, Mesirow Financial

Weather derivatives - supporting hedging against climate change

09:45 - 10:25

A: Quant 2.0: Being A Quant In The New Era

The aim of this talk is to analyse the performance of hedging strategies based on snow and temperature options developed by ski operators to protect their profitability under adverse changes in climatic conditions. Our focus is specifically on the ski tourism sector, although the approach could be easily extended to other sectors affected by the changing climate conditions. Although the applicability of weather derivatives is hindered by a number of factors, we aim at contributing with a setup which is relatively simple to implement and maintain. This is joint work with Gianluca Fusai, Ioannis Kyriakou, Nikos C. Papapostolou, and Panos P. Pouliasis.

Participants

Laura Ballotta - Reader in Financial Mathematics, Cass Business School

Bermudan crash put pricing, change of numeraire, and change of arithmetic

09:45 - 10:25

B: Volatility Modelling & Trading

Participants

Peter Carr - Department Chair, Finance and Risk Engineering, NYU Tandon School

Board-actionable stress testing for large and small portfolios: how to ensure that wild scenarios make financial sense

09:45 - 10:25

C: Regulation developments

Participants

Riccardo Rebonato - Professor of Finance, EDHEC

From (Martingale) Schrodinger bridges to a new class of Stochastic Volatility Models

09:45 - 10:25

D: Computational & Numerical Efficiency

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Risk Modelling Best Practices From a CCP Perspective

09:45 - 10:25

E: Innovations In Data, Modelling & Quant Finance

- Initial margin models at CCPs, best practice and framework
- Case study with OTC FX
- The importance of margin efficiencies in the new regulatory environment

Participants

Udesh Jha - Global Head of Risk Research, CME Clearing

Modelling valuation risks of climate change mitigation policies

10:25 - 11:05

A: Quant 2.0: Being A Quant In The New Era

Participants

Maxim Kartamyshev - Quant, Norges Bank Investment Management

Deep Learning Volatility

10:25 - 11:05

B: Volatility Modelling & Trading

We present a consistent neural network based calibration method for a number of volatility models – including the rough volatility family – that performs the calibration task within a few milliseconds for the full implied volatility surface. The aim of neural networks in this work is an off-line approximation of complex pricing functions, which are difficult to represent or time-consuming to evaluate by other means. We highlight how this perspective opens new horizons for quantitative modelling: The calibration bottleneck posed by a slow pricing of derivative contracts is lifted. This brings several model families (such as rough volatility models) within the scope of applicability in industry practice. As customary for machine learning, the form in which information from available data is extracted and stored is crucial for network performance. With this in mind, we discuss how our approach addresses the usual challenges of machine learning solutions in a financial context (availability of training data, interpretability of results for regulators, control over generalisation errors). We present specific architectures for price approximation and calibration and optimize these with respect to different objectives regarding accuracy, speed and robustness. We also find that including the intermediate step of learning pricing functions of (classical or rough) models before calibration significantly improves network performance compared to direct calibration to data.

Participants

Blanka Horvath - Lecturer in Financial Mathematics, King's College London

Aitor Muguruza Gonzalez - Equities Quant, Natixis

Mehdi Tomas - PhD Student, École Polytechnique

Front office pricing challenges facing XVA Desks

10:25 - 11:05

C: Regulation developments

Participants

Steve Yalovitsker - Director of Quantitative Strategies Group, Wells Fargo Securities

Pricing and exposure computation with deep learning techniques

10:25 - 11:05

D: Computational & Numerical Efficiency

XVA metrics for derivatives require a computational intensive process using Monte Carlo simulation in which pricers are called hundreds of thousands of times for a single derivative contract. Therefore, these pricers have to be fast without conceding too much accuracy. Using deep neural networks we are able to develop such pricers which imitate complex derivative pricers while being thousands of times faster. In this work we present some approaches coming from machine learning to develop such pricer, compare their performance, lay out a front-to-back workflow how to develop such pricers and show how well they fit into a Monte Carlo simulation framework. Also, we gather a few insights we obtained of how to make these pricers more efficient and describe how the performance of the pricers can be efficiently monitored.

Participants

André Süss - Senior Quant, Exposure Analytics, Credit Suisse

Shahzad Chohan - Global Head of Big Data, Deep Learning and Innovation, Credit Suisse

Futures and Options on Bitcoins: A Tentative Arbitrage Approach

10:25 - 11:05

E: Innovations In Data, Modelling & Quant Finance

Participants

Helyette Geman - Director, Commodity Finance Centre, Birbeck, University Of London & John Hopkins University

Morning coffee & networking break

11:05 - 11:35

Trading Too Expensively in the FX Market?

11:35 - 12:15

A: Quant 2.0: Being A Quant In The New Era

In foreign exchange (FX) trading, an aggregator is used to connect traders with liquidity providers (LPs). In an aggregator, a trader receives a continuous stream of bid and ask quotes from a predefined set of LPs, and the difference between the best bid and ask prices over a set of liquidity streams is called an inside spread. In this paper, we empirically study liquidity in an FX aggregator and show that, on average, traders obtain a relatively tight spread with four or five streams; the use of more streams yields a marginal benefit only. For given numbers of liquidity streams, we determine the optimal combinations of streams minimizing the spread. Our findings indicate that most of the traders could – at least in theory – reduce the average spread by more than half with the optimal combination of streams, and a trader could save significantly, even up to 0.18 basis points in dollars per 1EUR traded. However, traders may not be able to fully exploit improvements in spreads because, in practice, the liquidity streams are set by LPs and not by the trader. In addition, we find that Oomen's [Quantitative Finance, 17, 3, (2017)] model for the liquidity dynamics and contract formation process in the aggregator, which can be used to characterize the observed inside spread, fits our empirical data accurately, even under simplistic assumptions.

The full paper can be found [here](#)

Participants

Juho Kannianen - Professor of Financial Engineering, Tampere University

Model Calibration & Data Learning

11:35 - 12:15

B: Volatility Modelling & Trading

- Learning from historical data to better fit today's market conditions
- Reconciliation of historical pricing with market implied pricing
- Model-free valuation & hedging through learning
- High dimensional calibration & learning performance

Participants

Nadhem Meziou - Head of Fixed Income Quantitative Research, Natixis

Modelling and computing the adjustment of IM in pricing/hedging derivatives

11:35 - 12:15

C: Regulation developments

Participants

Emmanuel Gobet - Professor, Ecole Polytechnique

Modelling in the Cloud: Numerical optimization with distributed computing

11:35 - 12:15

D: Computational & Numerical Efficiency

Participants

Tyler Ward - Local Search Modeler, Google

The future of digital assets

11:35 - 12:15

E: Innovations In Data, Modelling & Quant Finance

Participants

Anton Golub - Co-founder and Chief Science Officer, Lykke Corp

Back to a single curve? State of play of alternative risk-free rates

12:15 - 12:55

A: Quant 2.0: Being A Quant In The New Era

The omnipresent LIBOR benchmark is likely to be discontinued by the end of 2021. In this talk, we give an overview of the current state of play of the transition from LIBOR to alternative risk-free rates (ARFRs) for various currencies. At first glance, the new ARFR benchmark rates bring us back to the text-book single curve setup, however they also come with new modeling challenges for Quants 2.0 to dig into. We address the problem of creating term rates and discuss new product specifications for the derivatives and cash market. We pay special attention to the ARFR futures, their inherent convexity, and how they can be used for hedging purposes.

Participants

Stefan Pomberger - Executive Director, Head of the Fixed Income Quant Group, Vontobel Investment Banking

Sander Willems - Ph.D. Candidate, EPFL

Precise asymptotics for rough volatility

12:15 - 12:55

B: Volatility Modelling & Trading

Participants

Peter Friz - Professor of Mathematics, TU Berlin, Weierstraß-Institut Berlin

Internal Audit vs Internal Validation - understanding the challenge on individual models

12:15 - 12:55

C: Regulation developments

Participants

Eulogio Cuesta - Head of Pricing Model Validation, Santander

Ruben-Andrei Miclea - Quantitative Analyst, Santander

Performance-critical modeling for cross-asset derivatives in life insurance and pension products

12:15 - 12:55

D: Computational & Numerical Efficiency

- Insurance and pension product features driving the practical demand in computing power

- Common ways to address the computational bottlenecks for major applications

- Some analytics and technology innovations to help quants on buy side

Participants

Denys Semagin - Senior Quant Analytics and Technology Specialist, Fintech Entrepreneur

Understanding the latest trends in cryptocurrencies and their derivatives

12:15 - 12:55

E: Innovations In Data, Modelling & Quant Finance

- Echo the gecko and fix the CRIX
- Tether and Bitfex issues
- Can profits still be made from exchange arbitrage?
- Introducing the BITIX – the bitcoin fear gauge
- Analysing crypto volatility and variance risk premium
- Have CBOE bitcoin futures prices led the spot-price decline?

Participants

Carol Alexander - Visiting Professor at Peking University HSBC Business School at Oxford & Professor of Finance, University of Sussex

Conic finance: Exploring new solutions to old problems including new dimensions of hedging, portfolio theory and trading

12:55 - 13:35

A: Quant 2.0: Being A Quant In The New Era

Participants

Wim Schoutens - Professor Of Financial Engineering, University of Leuven

Dilip Madan - Professor of Mathematical Finance, Robert H. Smith School of Business at University of Maryland

Geometric local variance gamma model

12:55 - 13:35

B: Volatility Modelling & Trading

Participants

Andrey Itkin - Director, Senior Research Associate, Bank Of America Merrill Lynch

Recent quantitative advances in market making regulation

12:55 - 13:35

C: Regulation developments

Participants

Mathieu Rosenbaum - Professor, Ecole Polytechnique

Advances of machine learning modelling in python compared with new open source data libraries: Which are the easiest to use and understand?

12:55 - 13:35

D: Computational & Numerical Efficiency

Participants

Erdem Ultanir - Quantitative Credit Risk Analytics Lead, Barclays

Smart Contracts for derivatives

12:55 - 13:35

E: Innovations In Data, Modelling & Quant Finance

Participants

Rebecca Declara - Interest Rates Options Trader, BayernLB

Lunch

13:35 - 14:35

Neocybernetics

14:35 - 15:55

A: Quant 2.0: Being A Quant In The New Era

Participants

Paul Bilokon - Founder, CEO, Chairman, Thalesians Ltd

Local Stochastic Volatility Risk Management

14:35 - 15:15

B: Volatility Modelling & Trading

Local volatility implied dynamic is not consistent with the market observed dynamic. This induces a cost of hedging that is usually taken into account with the local stochastic volatility (LSV). However industrial implementation of LSV suffers from potential time performance, and non transparent behaviors.

We propose a new philosophy of implementation of Lsv that is able to solve these issues.

Participants

Adil Reghai - Head of Equity and Quant Research, Natixis

Revisiting SA-CCR

14:35 - 15:15

C: Regulation developments

Participants

Chris Kenyon - Head of XVA Quant Modelling, MUFG Securities EMEA

Deep Analytics

14:35 - 15:55

D: Computational & Numerical Efficiency

Participants

Brian Huge - Chief Quantitative Analyst, Danske Bank

Antoine Savine - Quantitative Research, Danske Bank

A Deep Learning Approach to Exotic Option Pricing under LSVol

14:35 - 15:15

E: Innovations In Data, Modelling & Quant Finance

- The market standard for the pricing and risk management of complex derivatives within the Foreign Exchange markets uses a local-stochastic volatility (LSVol) model.

- This type of model can better capture relevant market dynamics but is computationally expensive.

- Using a deep learning approach, we value path-dependent Exotic Options under LSVol, achieving high degree of accuracy (to production standard).

- We'll explore this innovative approach, which is a radical departure from the traditional quantitative finance methodology prevalent in banks.

Participants

Katia Babbar - Visiting Research Fellow, University of Oxford and Founder, AI Wealth Technologies

The Joint S&P 500/VIX Smile Calibration Puzzle Solved

15:15 - 15:55

B: Volatility Modelling & Trading

Since VIX options started trading in 2006, many researchers and practitioners have tried to build a model that jointly and exactly calibrates to the prices of S&P 500 (SPX) options, VIX futures and VIX options. So far the best attempts, which used continuous-time jump-diffusion models on the SPX, could only produce an approximate fit. In this article we solve this puzzle using a discrete-time model. Given a VIX future maturity T_1 , we build a joint probability measure on the SPX at T_1 , the VIX at T_1 , and the SPX at $T_2 = T_1 + 30$ days which is perfectly calibrated to the SPX smiles at T_1 and T_2 , and the VIX future and VIX smile at T_1 . Our model satisfies the martingality constraint on the SPX as well as the requirement that the VIX at T_1 is the implied volatility of the 30-day log-contract on the SPX. In particular, this proves that the SPX and VIX markets are jointly arbitrage-free. The discrete-time model is cast as a dispersion-constrained martingale transport problem and solved using the Sinkhorn algorithm, in the spirit of De March and Henry-Labordere (2019). We explain how to handle the fact that the VIX future and SPX option monthly maturities do not perfectly coincide, and how to extend the two-maturity model to include all available monthly maturities.

Participants

Julien Guyon - Senior Quant, Bloomberg L.P.

Calibration of the FRTB Framework

15:15 - 15:55

C: Regulation developments

Participants

Shearin Cao - Technical Specialist, Traded Risk Management, Standard Chartered

Jim Congleton - FRTB SME and FRTB/CVA capital requirements, Standard Chartered

How are quants extracting P&L out of alternative data?

15:15 - 15:55

E: Innovations In Data, Modelling & Quant Finance

In this talk, we shall introduce the topic of alternative data. We discuss the various types of alternative data available to quants, and potential use cases. We shall also be presenting some case studies on the use of CLS FX flow data to trade FX, machine readable news to trade FX, satellite images to estimate retailer EPS, using Federal Reserve communications and transaction cost analysis.

Participants

Saeed Amen - Founder, Cuemacro

Afternoon tea & networking break

15:55 - 16:25

Real Time Vega map for Autocalls

16:25 - 17:05

A: Quant 2.0: Being A Quant In The New Era

Participants

Hamza Guennoun - Quantitative Analyst, Société Générale

Developing a TCA platform in Python

16:25 - 17:05

B: Volatility Modelling & Trading

In this talk we introduce the topic of transaction cost analysis. We discuss several general approaches to do TCA, and talk about the software design of `tcapy`, a Python based TCA library, as well as giving an interactive demo to illustrate some of the metrics used.

Participants

Saeed Amen - Founder, Cuemacro

FRTB implementation and industry impact

16:25 - 17:05

C: Regulation developments

Participants

Bo Boisen - Director FRTB and Risk Data Platform, Nordea

Payoff Scripting Languages: Sung and Unsung Glories and Next Generation

16:25 - 17:05

D: Computational & Numerical Efficiency

- Knowledge: There is i. what you know, ii. what you know you don't know, and iii. what you don't know you don't know

- Scripting languages and exotic derivatives

- Scripting languages and XVA

- Scripting languages and AAD and regulatory capital

- Scripting languages and transactions, trade life cycle, back-office, and anti-money laundering

Participants

Jesper Andreasen - Kwant Daddy, SaxoBank

Investigating what volatility of news sentiment - and other NLP-driven measures - can tell us about market volatility

16:25 - 17:05

E: Innovations In Data, Modelling & Quant Finance

An investigation of how aggregate measures of news article sentiment can prefigure changes in market volatility. This will use a variety of natural language processing techniques - including Sentiment Analysis and `doc2vec` - to determine aggregate measures of sentiment for an individual stock. The measures are used as an input to a neural network classifier to predict whether the article will lead to market changes.

Participants

James Baker - Product Manager, Suite, LLC

Machine Learning applications in trading, ESG investing and XVA: use cases

17:05 - 17:45

A: Quant 2.0: Being A Quant In The New Era

- We discuss several use cases in quant finance where Machine Learning was successfully applied: intraday stock trading on the basis of sentiment, ESG scores of companies and XVA calculations.
- We outline data-related challenges and issues and discuss what are the decisive factors in making ML applications successful

Participants

Svetlana Borovkova - Associate Professor Of Quantitative Finance, Vrije Universiteit Amsterdam

Contour deformation and double-exponential integration: how to robustly speed up option pricing by 10 orders of magnitude

17:05 - 17:45

B: Volatility Modelling & Trading

Participants

Leif Andersen - Global Head Of Quantitative Strategies Group, Bank Of America Merrill Lynch

Forecasting the past: from RNIV to NMRF framework

17:05 - 17:45

C: Regulation developments

The modelling of the hard-to-model risks factors is one of the topics of great interest to the financial industry. The industry is spending lots of resources on efforts to account for the hard-to-model risks in their risk management frameworks. Currently, the concept describing these risks is the Risks Not in VAR (RNIV). In its turn, the newly composed FRTB text similarly prescribes to classify risk factors that do not have a history of continuously available real prices as NMRFs. Both entities and financial regulatory authorities have shown great concern in the search for efficient techniques and models that allow for a more accurate estimation of the risks factors linked to the derivatives. An accurate modelling of these risk factors can lead to considerable savings in the capital charges, but any model assumption must be duly justified and supported by the entities. In this talk, different numerical techniques for modelling these risk factors are analyzed and compared. These include, among others, the Multi-channel Singular Spectrum Analysis (MSSA) or the application of Artificial Neural Networks (ANN).

Participants

Andrés Berenguer Alonso - Market Risk Director – Derivative Valuations Area, Santander

Luis Gandarias Viñuela - Market Risk Associate – IPV, Santander

Assessing the performance advantages of moving to the latest standard of C++

17:05 - 17:45

D: Computational & Numerical Efficiency

Participants

Christian Raynal - Associate Director, Senior Risk Officer, European Bank for Reconstruction and Development

Optimal transport and anomaly

17:05 - 17:45

E: Innovations In Data, Modelling & Quant Finance

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Portfolio & Network Effects Modelling and Big Processes

17:45 - 18:25

A: Quant 2.0: Being A Quant In The New Era

- The demand and scope for quantitative analysis and skills has significantly widened over the last years
- Portfolio effect analytics has become a central part of the job description for a quant
 - XVA, CCR, balance sheets, CCP networks, stress testing, liquidity
 - Data analytics and AI have become hot topics
 - But the mapping, automation and analysis of big processes has become equally relevant
 - There are some key principles that make this possible

Participants

Christoph Burgard - Head of Risk Analytics For Global Markets, Bank of America Merrill Lynch

Multivariate Gaussian Process Regression for Derivative Portfolio Modelling: Application to CVA

17:45 - 18:25

B: Volatility Modelling & Trading

Participants

Matthew Dixon - Assistant Professor of Finance, Illinois Institute of Technology

P&L Attribution Test: What you need to do to pass the test and what to consider when designing your desks

17:45 - 18:25

C: Regulation developments

Participants

Jochen Theis - Head of Market Risk Methodology, Deutsche

Chairman's closing remarks

17:45 - 17:50

D: Computational & Numerical Efficiency

Participants

Antoine Savine - Quantitative Research, Danske Bank

Chairman's closing remarks

18:25 - 18:30

A: Quant 2.0: Being A Quant In The New Era

Participants

Paul Bilokon - Founder, CEO, Chairman, Thalesians Ltd

Chairman's closing remarks

18:25 - 18:30

B: Volatility Modelling & Trading

Participants

Lorenzo Bergomi - Head of Quantitative Research, Société Générale

Chairman's closing remarks

18:25 - 18:30

C: Regulation developments

Participants

Shearin Cao - Technical Specialist, Traded Risk Management, Standard Chartered

Networking drinks reception & champagne roundtable discussion groups

18:30 - 19:30

A chance for everyone to network and relax after the day's presentations and discussions.

Champagne Discussion Groups offer delegates a chance to delve deeper into timely topics of the day and network with specific VIP speakers.

Roundtable 1: Lorenzo Bergomi, Societe Generale: Any "normal" index left? The impact of autocallable hedging on index volatility dynamics

Roundtable 2: Michael Pykhtin, Federal Reserve Board: Regulatory capital for counterparty risk and CVA risk Q&A

Roundtable 3: Julien Hok, Credit Agricole-CIB: Option pricing when usual smoothness assumptions are not satisfied

Roundtable 4: Ethics and safety of AI/ML in Finance

Participants

Lorenzo Bergomi - Head of Quantitative Research, Société Générale

Michael Pykhtin - Manager, Quantitative Risk, U.S. Federal Reserve Board

Julien Hok - Director, Quantitative Analysis, Credit Agricole-CIB

Jan Novotny - eFX Quant Trader, Deutsche Bank

End of main conference day 2

19:30 - 19:35

SCHEDULE

PLEASE NOTE THIS IS THE 2019 AGENDA. THE 2020 AGENDA WILL BE RELEASED IN DUE COURSE. MAIN CONFERENCE DAY 2 - 15/05/2019

QuantMinds
International

11 - 15 May 2020
Grand Elysée Hotel
Hamburg

TIME	A: QUANT 2.0: BEING A QUANT IN THE NEW ERA	B: VOLATILITY MODELLING & TRADING	C: REGULATION DEVELOPMENTS	D: COMPUTATIONAL & NUMERICAL EFFICIENCY	E: INNOVATIONS IN DATA, MODELLING & QUANT FINANCE
08:00	<p>08:00 - Registration & welcome coffee</p> <p>08:20 - Chairman's opening remarks</p> <p>08:25 - Diversity in quant finance: Examining the route to progress</p>	<p>08:00 - Registration & welcome coffee</p> <p>08:20 - Chairman's opening remarks</p> <p>08:25 - A Neural Network Approach to Understanding Implied Volatility Movements</p>	<p>08:00 - Registration & welcome coffee</p> <p>08:20 - Chairman's opening remarks</p> <p>08:25 - IBORs reform: User guide for quants and risk managers</p>	<p>08:00 - Registration & welcome coffee</p> <p>08:20 - Chairman's opening remarks</p> <p>08:25 - Globalization of adjoints</p>	<p>08:00 - Registration & welcome coffee</p> <p>08:20 - Chairman's opening remarks</p> <p>08:25 - Quantum annealing for machine learning: Applications in finance</p>
09:00	<p>09:05 - 10+ years since Lehman – Reflecting on lessons learned from the last crisis and examining advances in modelling of the financial system</p> <p>09:45 - Weather derivatives - supporting hedging against climate change</p>	<p>09:05 - New Arbitrage-Free Parametric Volatility Surface</p> <p>09:45 - Bermudan crash put pricing, change of numeraire, and change of arithmetic</p>	<p>09:05 - Benchmark replacements and benchmark transition aware pricing</p> <p>09:45 - Board-actionable stress testing for large and small portfolios: how to ensure that wild scenarios make financial sense</p>	<p>09:05 - Pricing digital options with adaptive scheme</p> <p>09:45 - From (Martingale) Schrodinger bridges to a new class of Stochastic Volatility Models</p>	<p>09:05 - Allocating the risk budget in an optimal way using machine learning</p> <p>09:45 - Risk Modelling Best Practices From a CCP Perspective</p>
10:00	<p>10:25 - Modelling valuation risks of climate change mitigation policies</p>	<p>10:25 - Deep Learning Volatility</p>	<p>10:25 - Front office pricing challenges facing XVA Desks</p>	<p>10:25 - Pricing and exposure computation with deep learning techniques</p>	<p>10:25 - Futures and Options on Bitcoins: A Tentative Arbitrage Approach</p>
11:00	<p>11:05 - Morning coffee & networking break</p> <p>11:35 - Trading Too Expensively in the FX Market?</p>	<p>11:05 - Morning coffee & networking break</p> <p>11:35 - Model Calibration & Data Learning</p>	<p>11:05 - Morning coffee & networking break</p> <p>11:35 - Modelling and computing the adjustment of IM in pricing/hedging derivatives</p>	<p>11:05 - Morning coffee & networking break</p> <p>11:35 - Modelling in the Cloud: Numerical optimization with distributed computing</p>	<p>11:05 - Morning coffee & networking break</p> <p>11:35 - The future of digital assets</p>
12:00	<p>12:15 - Back to a single curve? State of play of alternative risk-free rates</p> <p>12:55 - Conic finance: Exploring new solutions to old problems including new dimensions of hedging, portfolio theory and trading</p>	<p>12:15 - Precise asymptotics for rough volatility</p> <p>12:55 - Geometric local variance gamma model</p>	<p>12:15 - Internal Audit vs Internal Validation - understanding the challenge on individual models</p> <p>12:55 - Recent quantitative advances in market making regulation</p>	<p>12:15 - Performance-critical modelling for cross-asset derivatives in life insurance and pension products</p> <p>12:55 - Advances of machine learning modelling in python compared with new open source data libraries: Which are the easiest to use and understand?</p>	<p>12:15 - Understanding the latest trends in cryptocurrencies and their derivatives</p> <p>12:55 - Smart Contracts for derivatives</p>

SCHEDULE

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TIME	A: QUANT 2.0: BEING A QUANT IN THE NEW ERA	B: VOLATILITY MODELLING & TRADING	C: REGULATION DEVELOPMENTS	D: COMPUTATIONAL & NUMERICAL EFFICIENCY	E: INNOVATIONS IN DATA, MODELLING & QUANT FINANCE
13:00	13:35 - Lunch	13:35 - Lunch	13:35 - Lunch	13:35 - Lunch	13:35 - Lunch
14:00	14:35 - Neocybernetics	14:35 - Local Stochastic Volatility Risk Management	14:35 - Revisiting SA-CCR	14:35 - Deep Analytics	14:35 - A Deep Learning Approach to Exotic Option Pricing under LSVol
15:00	15:55 - Afternoon tea & networking break	15:15 - The Joint S&P 500/VIX Smile Calibration Puzzle Solved 15:55 - Afternoon tea & networking break	15:15 - Calibration of the FRTB Framework 15:55 - Afternoon tea & networking break	15:55 - Afternoon tea & networking break	15:15 - How are quants extracting P&L out of alternative data? 15:55 - Afternoon tea & networking break
16:00	16:25 - Real Time Vega map for Auto-calls	16:25 - Developing a TCA platform in Python	16:25 - FRTB implementation and industry impact	16:25 - Payoff Scripting Languages: Sung and Unsung Glories and Next Generation	16:25 - Investigating what volatility of news sentiment - and other NLP-driven measures - can tell us about market volatility
17:00	17:05 - Machine Learning applications in trading, ESG investing and XVA: use cases 17:45 - Portfolio & Network Effects Modelling and Big Processes	17:05 - Contour deformation and double-exponential integration: how to robustly speed up option pricing by 10 orders of magnitude 17:45 - Multivariate Gaussian Process Regression for Derivative Portfolio Modelling: Application to CVA	17:05 - Forecasting the past: from RNIV to NMRF framework 17:45 - P&L Attribution Test: What you need to do to pass the test and what to consider when designing your desks	17:05 - Assessing the performance advantages of moving to the latest standard of C++ 17:45 - Chairman's closing remarks	17:05 - Optimal transport and anomaly
18:00	18:25 - Chairman's closing remarks 18:30 - Networking drinks reception & champagne roundtable discussion groups	18:25 - Chairman's closing remarks 18:30 - Networking drinks reception & champagne roundtable discussion groups	18:25 - Chairman's closing remarks 18:30 - Networking drinks reception & champagne roundtable discussion groups	18:30 - Networking drinks reception & champagne roundtable discussion groups	18:30 - Networking drinks reception & champagne roundtable discussion groups
19:00	19:30 - End of main conference day 2	19:30 - End of main conference day 2	19:30 - End of main conference day 2	19:30 - End of main conference day 2	19:30 - End of main conference day 2

Registration & welcome coffee

08:00 - 08:20

Chairman's opening remarks

08:20 - 08:30

Plenary

Participants

Kathrin Glau - FELLOW co-founded by Marie Skłodowska Curie at École Polytechnique Fédérale de Lausanne & Financial Mathematics, Queen Mary University of London

Stress testing: a viaduct towards the next risk management generation

08:30 - 09:10

Plenary

- The convergence process of stress testing, financial planning and supervisory review processes
- Stress testing and new accounting principles: IFRS 9 and CECL
- Stress testing impact on internal governance, organizational structure and IT architectures in banks
- Improving systematic risk management through the stress testing process
- Reverse stress testing and machine learning: steps towards a new risk management generation

Participants

Tiziano Bellini - Director, BlackRock

Model risk and AI

08:30 - 09:10

In the boardroom discussion

- Creating a model risk management framework for AI
- Using ML to manage model risk more efficiently
- Handling bias, transparency and explainability in AI
- Managing and validating large datasets

Participants

Jos Gheerardyn - CEO & Founder, Yields.io

Panel Discussion: Assessing new trends in quant finance

09:10 - 09:50

Plenary

Participants

Damiano Brigo - Chair and Co-Head Of Group, Mathematical Finance, Imperial College, London

Vladimir Piterberg - MD, Head of Quantitative Analytics and Quantitative Development, NatWest Markets

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Peter Carr - Department Chair, Finance and Risk Engineering, NYU Tandon School

Risk Measurement in Non Stationary Markets

09:10 - 09:50

In the boardroom discussion

- Some stylized facts about financial markets
- Traditional solutions
- Adaptive Market Risk Measurement
- Outlook

Participants

Peter Quell - Head of Portfolio Analytics Team for Market & Credit Risk, DZ BANK

Quantum finance

09:50 - 10:30

Plenary

Participants

Davide Venturelli - Quantum Computing Lead, USRA Research Institute for Advanced Computer Science, NASA Ames Center

A quant perspective on LIBOR fallback

09:50 - 10:30

In the boardroom discussion

- The current status on fallback
- Potential difficulties with the proposed options
- Value transfer in the fallback
- The RFR term rates

Participants

Marc Henrard - Visiting Professor, University College London

Life beyond IBORs: Mapping the journey to risk free rates

10:30 - 11:10

Plenary

With \$370 trillion of exposure to IBORS how do we manage the transition process to new interest rate benchmarks?

Participants

Darrell Duffie - Dean Witter Distinguished Professor of Finance, Stanford University

Soft skills to develop your career in Quant finance

10:30 - 11:10

In the boardroom discussion

- Why are soft skills so important when building your career in quant finance?
- What are the most essential soft skills?
- How can I develop those to advance my career?

Participants

Oliver Cooke - Managing Director, Head of Selby Jennings - North America, Phaidon International

Morning coffee & networking break

11:10 - 11:40

Chairman's opening remarks

11:40 - 11:45

A: XVA Techniques & Advancements

Participants

Kathrin Glau - FELLOW co-founded by Marie Skłodowska Curie at École Polytechnique Fédérale de Lausanne & Financial Mathematics, Queen Mary University of London

Chairman's opening remarks

11:40 - 11:45

B: FX, Commodities & Trading Innovations

Participants

Michael Dempster - Professor Emeritus & Founder, Centre For Financial Research, Department Of Pure Mathematics And Statistics, University Of Cambridge

Chairman's opening remarks

11:40 - 11:45

C: Risk Management, Model risk & Liquidity

Participants

Aitor Muguruza Gonzalez - Equities Quant, Natixis

Holistic view of XVAs: What are the combined effects of XVAs on pricing?

11:45 - 12:25

A: XVA Techniques & Advancements

Participants

Kathrin Glau - FELLOW co-founded by Marie Skłodowska Curie at École Polytechnique Fédérale de Lausanne & Financial Mathematics, Queen Mary University of London

Bond flotation with exotic commodity collateral

11:45 - 12:25

B: FX, Commodities & Trading Innovations

Participants

Michael Dempster - Professor Emeritus & Founder, Centre For Financial Research, Department Of Pure Mathematics And Statistics, University Of Cambridge

Backtesting: Actual vs. perceived challenges

11:45 - 12:25

C: Risk Management, Model risk & Liquidity

Participants

Vladimir Chorniy - Senior Technical Lead, BNP Paribas

Marginal KVA via Mathematical Programming and Reinforcement Learning

12:25 - 13:05

A: XVA Techniques & Advancements

Participants

Chris Kenyon - Head of XVA Quant Modelling, MUFG Securities EMEA

Precipitation derivatives: A case study

12:25 - 13:05

B: FX, Commodities & Trading Innovations

Participants

Paul Edge - Financial modelling expert, EDP

On smile properties of volatility derivatives and exotic products: understanding the VIX skew

12:25 - 13:05

C: Risk Management, Model risk & Liquidity

We develop a method to study the implied volatility for exotic options and volatility derivatives with European payoffs such as VIX options. Our approach, based on Malliavin calculus techniques, allows us to describe the properties of the at-the-money implied volatility (ATMI) in terms of the Malliavin derivatives of the underlying process. More precisely, we study the short-time behaviour of the ATMI level and skew. As an application, we describe the short-term behavior of the ATMI of VIX and realized variance options in terms of the Hurst parameter of the model, and most importantly we describe the class of volatility processes that generate a positive skew for the VIX implied volatility. In addition, we find that our ATMI asymptotic formulae perform very well even for large maturities. Several numerical examples are provided to support our theoretical results.

Participants

Aitor Muguruza Gonzalez - Equities Quant, Natixis

David Garcia Lorite - XVA Quantitative Analyst, Caixabank

Elisa Alos - Lecturer in Financial Mathematics, Pompeu Fabra University

Lunch

13:05 - 14:05

A: XVA Techniques & Advancements

Lunch

13:05 - 14:05

B: FX, Commodities & Trading Innovations

Lunch

13:05 - 14:05

C: Risk Management, Model risk & Liquidity

KVA is Incomplete

14:05 - 14:45

A: XVA Techniques & Advancements

Participants

Matthias Arnsdorf - Managing Director & Head Of Counterparty Credit Risk Modeling Group, JPMorgan Chase

Analytical composite option valuation with full smiles for FX and primary underlying

14:05 - 14:45

B: FX, Commodities & Trading Innovations

Participants

Peter Jaeckel - Deputy Head of Quantitative Research, VTB Capital

Static vs adaptive optimal trading with liquidity signals

14:05 - 14:45

C: Risk Management, Model risk & Liquidity

Participants

Damiano Brigo - Chair and Co-Head Of Group, Mathematical Finance, Imperial College, London

Balance Sheet XVA by Deep Learning and GPU

14:45 - 16:05

A: XVA Techniques & Advancements

Burgard and Kjaer once dismissed an earlier incarnation of the Albanese and Crépey holistic, incomplete market XVA model as being elegant but difficult to solve explicitly. We show that the model (set on a forward/backward SDE formulation) is not only elegant, but also able to be solved efficiently using GPU computing combined with AI methods in a whole bank balance sheet context. We calculate the Mark-to-Market cube (or its increment, in the context of trade incremental XVA computations) using GPU computing and the XVA process cube using Deep Learning (including joint ES and VaR) Regression methods.

Participants

Stéphane Crépey - Professor of Mathematics, University Of Evry

Rodney Hoskinson - Director, Quantitative Support (Strategic Trading and Funding), ANZ Banking Group

Dynamic Copula Modelling

14:45 - 15:25

B: FX, Commodities & Trading Innovations

Participants

Yaroslav Melnyk - Quantitative Analyst, FX derivatives modelling team, Morgan Stanley

AI - Structuring the Unstructured

14:45 - 15:25

C: Risk Management, Model risk & Liquidity

Participants

Daniel Mayenberger - European Head of Large Model Frameworks, Barclays

SESSIONS

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Chair's closing remarks

15:25 - 15:30

B: FX, Commodities & Trading Innovations

Participants

Michael Dempster - Professor Emeritus & Founder, Centre For Financial Research, Department Of Pure Mathematics And Statistics, University Of Cambridge

Hi, Hybrid Intelligence! How to deal with digital assets liquidity?

15:25 - 16:05

C: Risk Management, Model risk & Liquidity

Participants

Nodari Kolmakhidze - Chief Investment Officer, Cindicator

Afternoon tea & networking break

16:05 - 16:35

MVA: Future IM for Client Trades & Dynamic Hedges

16:35 - 17:15

A: XVA Techniques & Advancements

- Servicing clients requires posting Initial Margin (IM) for both trades and their hedges.
- MVA should reflect these two parts of the IM projecting to the future.
- Such projections are challenging as far as future sensitivities are difficult to compute.
- However, future sensitivities are already required to forecast client-trade IM, and thus future hedges (e.g., delta and vega) can be determined.
- This allows IM requirements to be forecast for cleared hedges (e.g., swaps) and non-cleared hedges (e.g., swaptions).
- Our numerical examples highlight the importance of capturing the complete set of IM requirements in MVA

Participants

Alexandre Antonov - Director, Standard Chartered Bank

Andrew McClelland - Director, Quantitative Research, Numerix

Optimizing the Hungarian Debt Portfolio

16:35 - 17:15

C: Risk Management, Model risk & Liquidity

We construct an optimal debt portfolio model with the purpose of optimizing the Hungarian government debt portfolio. To analyze the characteristics of the costs and corresponding risk factors of the Hungarian debt portfolio we simulate issuances of chosen instruments on a specified time horizon. We apply a multiobjective optimization scheme to construct compositions of financing that minimize the costs and risks of the debt portfolio. Our purpose is to find the set of Pareto-optimal solutions that minimize expected costs, volatility of costs and refinancing risks while maximizing average time to re-fixing. The results of the multiobjective optimization can be used to help in constructing a medium term debt management strategy.

Participants

András Bebes - Risk Manager, Hungarian Government Debt Management Agency

David Tran - Risk Manager, Hungarian Government Debt Management Agency

Deep learning derivatives

17:15 - 17:55

A: XVA Techniques & Advancements

Participants

Andrew Green - Managing Director and XVA Lead Quant, Scotiabank

Chairman's closing remarks

17:15 - 17:20

C: Risk Management, Model risk & Liquidity

Participants

Aitor Muguruza Gonzalez - Equities Quant, Natixis

Chairman's closing remarks

17:55 - 18:00

A: XVA Techniques & Advancements

Participants

Kathrin Glau - FELLOW co-founded by Marie Skłodowska Curie at École Polytechnique Fédérale de Lausanne & Financial Mathematics, Queen Mary University of London

End of QuantMinds 2018 main conference

18:00 - 18:05

SCHEDULE

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TIME	A: XVA TECHNIQUES & ADVANCEMENTS	B: FX, COMMODITIES & TRADING INNOVATIONS	C: RISK MANAGEMENT, MODEL RISK & LIQUIDITY	IN THE BOARDROOM DISCUSSION	PLENARY
08:00	08:00 - Registration & welcome coffee	08:00 - Registration & welcome coffee	08:00 - Registration & welcome coffee	08:00 - Registration & welcome coffee 08:30 - Model risk and AI	08:00 - Registration & welcome coffee 08:20 - Chairman's opening remarks 08:30 - Stress testing: a viaduct towards the next risk management generation
09:00				09:10 - Risk Measurement in Non Stationary Markets 09:50 - A quant perspective on LIBOR fallback	09:10 - Panel Discussion: Assessing new trends in quant finance 09:50 - Quantum finance
10:00				10:30 - Soft skills to develop your career in Quant finance	10:30 - Life beyond IBORs: Mapping the journey to risk free rates
11:00	11:10 - Morning coffee & networking break 11:40 - Chairman's opening remarks 11:45 - Holistic view of XVAs: What are the combined effects of XVAs on pricing?	11:10 - Morning coffee & networking break 11:40 - Chairman's opening remarks 11:45 - Bond flotation with exotic commodity collateral	11:10 - Morning coffee & networking break 11:40 - Chairman's opening remarks 11:45 - Backtesting: Actual vs. perceived challenges	11:10 - Morning coffee & networking break	11:10 - Morning coffee & networking break
12:00	12:25 - Marginal KVA via Mathematical Programming and Reinforcement Learning	12:25 - Precipitation derivatives: A case study	12:25 - On smile properties of volatility derivatives and exotic products: understanding the VIX skew		
13:00	13:05 - Lunch	13:05 - Lunch	13:05 - Lunch		

SCHEDULE

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QuantMinds
International

11 - 15 May 2020
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TIME	A: XVA TECHNIQUES & ADVANCEMENTS	B: FX, COMMODITIES & TRADING INNOVATIONS	C: RISK MANAGEMENT, MODEL RISK & LIQUIDITY	IN THE BOARDROOM DISCUSSION	PLENARY
14:00	<p>14:05 - KVA is Incomplete</p> <p>14:45 - Balance Sheet XVA by Deep Learning and GPU</p>	<p>14:05 - Analytical composite option valuation with full smiles for FX and primary underlying</p> <p>14:45 - Dynamic Copula Modelling</p>	<p>14:05 - Static vs adaptive optimal trading with liquidity signals</p> <p>14:45 - AI - Structuring the Unstructured</p>		
15:00		<p>15:25 - Chair's closing remarks</p>	<p>15:25 - Hi, Hybrid Intelligence! How to deal with digital assets liquidity?</p>		
16:00	<p>16:05 - Afternoon tea & networking break</p> <p>16:35 - MVA: Future IM for Client Trades & Dynamic Hedges</p>	<p>16:05 - Afternoon tea & networking break</p>	<p>16:05 - Afternoon tea & networking break</p> <p>16:35 - Optimizing the Hungarian Debt Portfolio</p>	<p>16:05 - Afternoon tea & networking break</p>	<p>16:05 - Afternoon tea & networking break</p>
17:00	<p>17:15 - Deep learning derivatives</p> <p>17:55 - Chairman's closing remarks</p>		<p>17:15 - Chairman's closing remarks</p>		
18:00	<p>18:00 - End of QuantMinds 2018 main conference</p>	<p>18:00 - End of QuantMinds 2018 main conference</p>	<p>18:00 - End of QuantMinds 2018 main conference</p>	<p>18:00 - End of QuantMinds 2018 main conference</p>	<p>18:00 - End of QuantMinds 2018 main conference</p>

SESSIONS

QuantMinds
International

PLEASE NOTE THIS IS THE 2019 AGENDA. THE 2020 AGENDA WILL BE RELEASED IN DUE COURSE. TECHNICAL WORKSHOPS - 17/05/2019

11 - 15 May 2020
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Hamburg

Registration, breakfast & networking time

08:30 - 09:00

Workshop: Machine learning in finance

Registration, breakfast & networking time

08:30 - 09:00

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Registration, breakfast & networking time

08:30 - 09:00

Workshop: Modern Option Pricing

Workshop leader's opening remarks

09:00 - 09:05

Workshop: Machine learning in finance

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Workshop leader's opening remarks

09:00 - 09:05

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Workshop leader's opening remarks

09:00 - 09:05

Workshop: Modern Option Pricing

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Julien Guyon - Senior Quant, Bloomberg L.P.

Introduction

09:05 - 10:30

Workshop: Machine learning in finance

- Types of machine learning
- Why ML is suddenly so popular in finance
- Training, validation and test sets
- Linear regression with many features: ridge, lasso, elastic regression. Case study
- Bayes classification
- Principal components

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Fundamentals Of Adjoints in Finance (Capriotti/Giles)

09:05 - 10:30

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

The principles of Algorithmic Differentiation. Tangent and Adjoint mode. Getting started with AD: first examples and discussion of their computational complexity and their rationale. Monte Carlo and pathwise derivative method, algebraic adjoint approaches, adjoint Algorithmic Differentiation (AAD). AAD and the path-wise derivative method, first financial applications.

Participants

Luca Capriotti - Global Head Quantitative Strategies Credit and Financing, Credit Suisse

Mike Giles - Head of the Mathematical Institute and Professor of Scientific Computing, Oxford University

The Particle Method For Smile Calibration

09:05 - 10:30

Workshop: Modern Option Pricing

- Introductory example: Stochastic local volatility
- McKean stochastic differential equations
- The particle method
- Adding stochastic rates and stochastic repo/dividend yield
- Path-dependent volatility
- Local correlation
- Cross-dependent volatility

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Julien Guyon - Senior Quant, Bloomberg L.P.

Morning coffee & networking break

10:30 - 11:00

Workshop: Machine learning in finance

Morning coffee & networking break

10:30 - 11:00

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Morning coffee & networking break

10:30 - 11:00

Workshop: Modern Option Pricing

Supervised Learning

11:00 - 12:30

Workshop: Machine learning in finance

- Logistic regression. Case study
- Support vector machines
- Neural networks
- Decision trees and random forests
- Bagging and boosting; ensemble
- The variance-bias trade-off

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Hands-On Adjoints (Naumann)

11:00 - 12:30

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Introducing adjoint code generation rules, interactive / step-by-step manual coding of adjoint code for financial applications; introducing dco/c++, interactive / step by step dco/c++ adjoint of code, hands-on exercise.

Participants

Uwe Naumann - Professor Of Computer Science, RWTH Aachen University

Stochastic Control Techniques And Applications

11:00 - 12:30

Workshop: Modern Option Pricing

- Hamilton-Jacobi-Bellman
- Backward Stochastic Differential Equations
- Uncertain volatility model, uncertain default rate model
- Different rates for borrowing and lending
- Portfolio optimization
- CVA
- Marked branching diffusions

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Julien Guyon - Senior Quant, Bloomberg L.P.

Lunch

12:30 - 13:30

Workshop: Machine learning in finance

Lunch

12:30 - 13:30

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Lunch

12:30 - 13:30

Workshop: Modern Option Pricing

Reinforcement Learning

13:30 - 15:00

Workshop: Machine learning in finance

- Exploration vs. exploitation
- Simple examples of multistage decision making
- Bellman equations
- Q-learning
- Temporal difference learning
- Application to trading

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Advanced applications (Capriotti/Giles/Naumann)

13:30 - 15:00

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Memory management and 'check-pointing', parallel computing and GPU implementations, Correlation Greeks, Market Prices Sensitivities, Calibration and the Implicit Function Theorem, Bermudan options and Least Squares Monte Carlo, advanced XVA applications.

Participants

Luca Capriotti - Global Head Quantitative Strategies Credit and Financing, Credit Suisse

Mike Giles - Head of the Mathematical Institute and Professor of Scientific Computing, Oxford University

Uwe Naumann - Professor Of Computer Science, RWTH Aachen University

Machine Learning Techniques For Option Pricing

13:30 - 15:00

Workshop: Modern Option Pricing

- ML techniques for the estimation of conditional expectations
- Nonparametric regression: nearest neighbours, kernel regression
- Parametric regression: neural networks, kernel trick, random forests
- Application to American option pricing; smile calibration; VIX derivatives pricing
- Solving stochastic control problems with neural networks
- Application to CVA and IM computations

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Julien Guyon - Senior Quant, Bloomberg L.P.

Afternoon coffee & networking break

15:00 - 15:30

Workshop: Machine learning in finance

Afternoon coffee & networking break

15:00 - 15:30

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Afternoon coffee & networking break

15:00 - 15:30

Workshop: Modern Option Pricing

Unsupervised learning and review

15:30 - 17:00

Workshop: Machine learning in finance

- Clustering and k-means algorithm
- Other algorithm
- Issues in machine learning
- Data privacy, biases, ethics
- Limitations of machine learning
- Challenges of innovation

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Further Advanced Issues in AAD (Naumann)

15:30 - 17:00

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Outlook to further advanced issues in AAD including second- and higher-order adjoints, preaccumulation and combinatorics, adjoint linear algebra

Participants

Uwe Naumann - Professor Of Computer Science, RWTH Aachen University

Model-Free Bounds For Option Prices

15:30 - 17:00

Workshop: Modern Option Pricing

- Primal problem: Linear programming formulation
- Dual problem: Optimal transport
- Martingale optimal transport
- Example: Bounds for VIX futures and VIX options given S&P 500 smiles

Participants

Pierre Henry-Labordere - Quant, Global Markets Quantitative Research, Société Générale

Julien Guyon - Senior Quant, Bloomberg L.P.

Workshop leader's closing remarks

17:00 - 17:15

Workshop: Machine learning in finance

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Workshop leader's closing remarks

17:00 - 17:15

Workshop: Demystifying AAD: Adjoint Greeks Made Easy

Workshop leader's closing remarks

17:00 - 18:15

Workshop: Modern Option Pricing

SCHEDULE

QuantMinds
International

PLEASE NOTE THIS IS THE 2019 AGENDA. THE 2020 AGENDA WILL BE RELEASED IN DUE COURSE. TECHNICAL WORKSHOPS - 17/05/2019

11 - 15 May 2020
Grand Elysée Hotel
Hamburg

TIME	WORKSHOP: DEMYSTIFYING AAD: AD-JOINT GREEKS MADE EASY	WORKSHOP: MACHINE LEARNING IN FINANCE	WORKSHOP: MODERN OPTION PRICING
08:00	08:30 - Registration, breakfast & networking time	08:30 - Registration, breakfast & networking time	08:30 - Registration, breakfast & networking time
09:00	09:00 - Workshop leader's opening remarks 09:05 - Fundamentals Of Adjoints in Finance (Capriotti/Giles)	09:00 - Workshop leader's opening remarks 09:05 - Introduction	09:00 - Workshop leader's opening remarks 09:05 - The Particle Method For Smile Calibration
10:00	10:30 - Morning coffee & networking break	10:30 - Morning coffee & networking break	10:30 - Morning coffee & networking break
11:00	11:00 - Hands-On Adjoints (Naumann)	11:00 - Supervised Learning	11:00 - Stochastic Control Techniques And Applications
12:00	12:30 - Lunch	12:30 - Lunch	12:30 - Lunch
13:00	13:30 - Advanced applications (Capriotti/Giles/Naumann)	13:30 - Reinforcement Learning	13:30 - Machine Learning Techniques For Option Pricing
14:00			
15:00	15:00 - Afternoon coffee & networking break 15:30 - Further Advanced Issues in AAD (Naumann)	15:00 - Afternoon coffee & networking break 15:30 - Unsupervised learning and review	15:00 - Afternoon coffee & networking break 15:30 - Model-Free Bounds For Option Prices
16:00			
17:00	17:00 - Workshop leader's closing remarks	17:00 - Workshop leader's closing remarks	17:00 - Workshop leader's closing remarks