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Mark Broadie, COLUMBIA UNIVERSITY

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Alexander Lipton
Co-Head Of Global Quantitative Group
BANK OF AMERICA MERRILL LYNCH

Jesper Andreasen
Global Head Of Quantitative Research
DANSKE BANK

Jim Gatheral
Professor, Department Of Mathematics
BARUCH COLLEGE, CUNY

Thomas Hyer
Portfolio Manager
BTG PACTUAL

Christopher Cole
Managing Partner
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Alireza Javaheri
Head Of Equities Quantitative Research Americas
JP MORGAN

Damiano Brigo
Gilbart Professor Of Mathematical Finance
KING'S COLLEGE LONDON

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MUNICH RE

Massimo Morini
Head Of Credit Models & Coordinator Of Model Research
BANCA IMI

Fabio Mercurio
Head Of Quant Business Managers
BLOOMBERG

Marco Avellaneda
Professor Of Mathematics
COURANT INSTITUTE, NEW YORK UNIVERSITY

What's New For 2012?

MORE **Sessions & Speakers Than Ever Before.** This year's event will feature 120+ experts from leading financial institutions.

NEW **Sessions Addressing The Latest Market Events** including negative rates & sovereign risk. Examine their impact on derivatives markets and learn practical solutions to the modelling and risk management challenges they pose.

MORE **Focus On Collateral & Counterparty Risk.** Discuss changing industry standards and best practice and the growing importance of properly managing and modelling your collateral and counterparty risk.

NEW **Sessions Covering A Wider Range Of Products** including inflation derivatives, mortgage derivatives, longevity bonds, VIX, 2nd generation volatility products, ETFs and more.

NEW **Focus On The Changing Nature Of Quantitative Finance.** Examine how assumptions are being challenged, paradigms are shifting and quant finance is moving beyond perfect market theory.

Plus **3rd Annual High Frequency Finance & Algorithmic Trading Summit** - Monday 16 April 2012

The summit will feature leading industry experts sharing their latest research, discussing practical solutions to key challenges facing the industry, including designing and implementing successful algorithms, reducing latency, optimising inventory management and order execution.

Don't miss invaluable insights into the future of high frequency trading from:
BANK OF AMERICA MERRILL LYNCH, JP MORGAN, BARUCH COLLEGE, CITI, BLUECREST CAPITAL MANAGEMENT, OLSEN LTD, ARTEMIS CAPITAL ASSET MANAGEMENT, LAKEVIEW CAPITAL MARKET SERVICES

Plus ## Choose From 6 In-Depth Technical Master Classes - Friday 20 April 2012

The Latest Innovations In Fixed Income Modelling
Pat Hagan
Head Of Quantitative Analytics For Chief Investment Office
JP MORGAN

Volatility & Correlation Modelling & Trading In Practice
Bruno Dupire
Head Of Quantitative Research
BLOOMBERG

The Future Of CVA
Jon Gregory
Partner
SOLUM FINANCIAL PARTNERS

Interest Rates After The Credit Crunch: Market & Model Evolutions
Marco Bianchetti
Senior Quant & Risk Manager
BANCA INTESA SANPAOLO

Understanding & Managing Model Risk
Massimo Morini
Head Of Credit Models & Coordinator Of Model Research
BANCA IMI

Latest Innovations In Modelling & Trading Commodities
Helyette Geman
Director, Commodity Finance Centre
UNIVERSITY OF LONDON & ESCP EUROPE

Plus ## Don't Miss Insights From These Guest Speakers
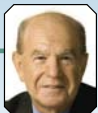
GUEST ECONOMIC ADDRESS
Stephane Garelli
Professor
IMD & UNIVERSITY OF LAUSANNE

BEHAVIOURAL FINANCE INSIGHTS
Greg Davies
Head Of Behavioural & Quantitative Investment Philosophy
BARCLAYS WEALTH

GLOBAL CREDIT MARKET OUTLOOK
Edward I. Altman
Max L. Heine Professor Of Finance
STERN SCHOOL OF BUSINESS, NYU

High Frequency Finance & Algorithmic Trading Summit
Monday 16 April 2012

Time	Session
08.00	*Registration & Welcome Coffee*
08.25	*Chairman's Opening Remarks*

On The Square-Root Model Of Market Impact
- History of the square-root model
- Why the square-root model might be right
- Square-root price dynamics
- Optimal scheduling under square-root dynamics
- Adaptive trading under square-root dynamics

08.30 — **Jim Gatheral**, *Professor, Department Of Mathematics*, **BARUCH COLLEGE, CUNY**
Jim Gatheral is professor of mathematics at Baruch College, CUNY teaching mostly courses in the Masters of Financial Engineering (MFE) program. Prior to joining the faculty of Baruch College, Jim was a Managing Director at Bank of America Merrill Lynch, and also an adjunctprofessor at the Courant Institute of the Mathematical Sciences, New York, where for many years he co-taught popular classes in the Masters Program of Mathematics in Finance. Prior to 2005 he headed the Equity Quantitative Analytics groups at Merrill Lynch. Over his long career in the financial markets, he has been involved at one time or other in all of the major derivative product areas as bookrunner, risk manager and quantitative analyst. Jim has a BSc in mathematics and natural philosophy from Glasgow University and a PhD in theoretical physics from Cambridge University. His research focus is on volatility modelling and modelling equity market microstructure for algorithmic trading. His best-selling book, The Volatility Surface: A Practitioner's Guide (Wiley 2006) is one of the standard references on the subject of volatility modelling.

High Frequency Trading Outside Of Equities
- The growing importance of HF trading across a range of asset classes
- What features are similar to equities and what are different
- The importance of the details of market microstructure

09.10 — **Robert Almgren**, *Co-Founder*, **QUANTITATIVE BROKERS**
Robert Almgren is also a Fellow in the Mathematics in Finance Program at New York University. Until 2008, Dr Almgren was a Managing Director and Head of Quantitative Strategies in the Electronic Trading Services group of Banc of America Securities. From 2000-2005, he was a tenured Associate Professor of Mathematics and Computer Science at the University of Toronto, and Director of its Master of Mathematical Finance program.

High-Frequency Trading Signals & Order Execution
We review the intuition, definition, and predictive power of a collection of high-frequency trading signals, and discuss how they can be used in conjunction with schedule-based algorithms in electronic order execution.

09.50 — **Michael Sotiropoulos**, *Global Head Of Algorithmic Trading Quantitative Research*
BANK OF AMERICA MERRILL LYNCH
Michael Sotiropoulos is the global head of algorithmic trading quantitative research at Bank of America Merrill Lynch. His group supports the Global Execution Services business, and focuses on market microstructure and algorithmic trading research coverage. Michael joined Bank of America in 2004, as an equity derivatives quant after spending three years at Bear Stearns in the same role. He was head of equities quantitative research for year 2008 before moving to algorithmic trading. He has a Ph.D. in Theoretical Physics from SUNY Stony Brook. Prior to joining the finance industry he taught and worked in quantum field theory and particle physics at the University of Southampton, England and at the University of Michigan.

Time	Session
10.30	*Morning Coffee & Networking Break*

Systematic Inventory Management
11.00 — **Xavier Abdobal**, *Head Of Linear Quantitative Research EMEA, Electronic Client Solutions*, **JP MORGAN**
Xavier Abdobal joined JP Morgan in 2010 to lead the EMEA Quantitative Solutions group at JP Morgan. Quantitative Solutions is a global quantitative group that focuses on both electronic trading and portfolio and risk analytics for the Equities division. Prior to joining JP Morgan, he worked at Deutsche Bank for three years where he headed the European PT/Delta-1 quantitative research and development efforts and at Lehman Brothers for three years where he was in charge globally of the development of Trading Analytics including the patented PRISE impact cost model. He started his career at Credit Lyonnais Securities as an equity derivatives quant. He holds a Master in Engineering from Ecole des Mines de Paris.

Innovations In Systematic Trading
11.40 — **Mark Holt**, *CTO & Head Of Systematic Implementation*, **BLUECREST CAPITAL MANAGEMENT LLP**
Mark Holt is Head of Implementation for the systematic trading group at BlueCrest Capital Management LLP. He has spent the last 15 years automating trading within and between major financial institutions. Joined BlueCrest after 5 years at UBS where he was responsible for the architecture and development of their European algorithmic trading platform. Before that he spent 7 years at Morgan Stanley and was involved in the development of their global electronic trading platform as well as the implementation of a number of automated trading strategies for cash and derivatives markets.

Algorithmic Trends In 3G (Global Growth Generation) Economies
- The evolving trading landscape
- Market structure & the regulatory environment
- Market technology investments
- Emerging trends in electronic trading

12.20 — **Rajesh Nagella**, *Head Of Algorithmic Products EMEA*, **CITI**
Rajesh Nagella is Head of Algorithmic Products in EMEA and responsible for electronic trading products including Algorithms, Smart Order Routing and Internal Crossing throughout the region. Previously, Rajesh was the US Head of Algorithmic Products at Citigroup, New York. Prior to Citi, Raj worked with Bank of America Securities and head of Electronic Trading Strategies. He began his career at Hull Trading, Chicago before joining Goldman Sachs where he was Co-Head of GSAT USA. Rajesh graduated with an MBA from the University of Chicago, Booth School of Business in 1999.

Time	Session
13.00	*Lunch - Plus Meet The Speaker Lunch Tables* **Robert Almgren**, **QUANTITATIVE BROKERS**, **Michael Sotiropoulos**, **BANK OF AMERICA MERRILL LYNCH** **Peter van Kleef**, **LAKEVIEW CAPITAL MARKET SERVICES**

Methods For Pari-Passu Post-Trade Allocation Between Managed Accounts
- Propose a post trade fair, optimal and unbiased allocation methodology for multiple managed accounts
- Performance comparison against existing methodologies (rotation of accounts, random allocation, highest prices to the highest account numbers, average prices)

14.10 — **Ali Hirsa**, *Head Of Analytical Trading Strategy*, **NATIXIS CASPIAN CAPITAL MANAGEMENT**
Ali Hirsa is Head of Analytical Trading Strategy at Natixis Caspian Capital Management, LLC. Prior to his current position, Ali worked at Morgan Stanley, Banc of America Securities, and Prudential Securities. He is also an adjunct professor at Columbia University and Courant Institute.

Complex Event Processing For High Frequency Trading
- Quantifying high frequency patterns in multivariate time series
- Graphics processing units as small computing clusters

14.50 — **Tobias Preis**, *Founder & Managing Director*, **ARTEMIS CAPITAL ASSET MANAGEMENT**
Tobias Preis is a German physicist and founder of the Artemis Capital Asset Management GmbH. He performed complex systems research with H. Eugene Stanley at Boston University and Dirk Helbing at ETH Zurich. He was awarded a Ph.D. in physics from the Johannes Gutenberg University of Mainz and was a junior member of the Gutenberg Academy. His current research focuses on quantifying and modeling financial market fluctuations. In addition, he has made contributions to general-purpose computing on graphics processing units in statistical physics and econophysics. Recently, he headed a research team which provided evidence that search engine query data and stock market fluctuations are correlated. More details on his research can be found at www.tobiaspreis.de.

Time	Session
15.30	*Afternoon Tea*

Practical Strategies & Techniques For Reducing Latency & Capacity Constraints
- Colocation/ proximity/ DSA
- Network issues and options
- Calculation and data processing
- Binary communication for trading

16.00 — **Peter van Kleef**, *Partner*, **LAKEVIEW CAPITAL MARKET SERVICES**
Prior to his role at Lakeview, Peter managed significant hedge fund type investment portfolios and quantitative trading departments for among others Cooper Neff, Salomon Brothers, HypoVereinsbank and Credit Lyonnais. He has over 15 years of experience in the development and running of sophisticated automated trading operations. He holds a MBA degree from the Owen Graduate School at Vanderbilt University, Nashville, USA.

Going Beyond High Frequency Trading
- Different sources of alpha
- Setting your objectives
- Collecting tick-by-tick data
- Analyzing time series, using intrinsic time
- Market stabilizing algorithms
- Dynamic frame of reference based on scaling laws

16.40 — **Thomas Bisig**, *Financial Engineer*, **OLSEN LTD.**
After graduating from ETH Zurich with a Msc in theoretical physics, he worked as a management consultant for banks and insurances. At Olsen, he has developed services like the Scale of Market Quakes and the Olsen Trading Tools. He consults and teaches cutting-edge developments in finance.

PANEL

Examining The Future Of High Frequency Trading: New Asset Classes, New Methodologies & New Opportunities
17.20 — **Robert Almgren**, *Co-Founder*, **QUANTITATIVE BROKERS**
Michael Sotiropoulos, *Global Head Of Algorithmic Trading Quantitative Research*, **BANK OF AMERICA MERRILL LYNCH**
Peter van Kleef, *Partner*, **LAKEVIEW CAPITAL MARKET SERVICES**

Time	Session
18.00	*End Of Summit Day*

Main Conference Day One
Tuesday 17 April 2012

Time	Session
08.00	*Registration & Coffee*
08.40	*Chairman's Opening Address*

Guest Economist Address
08.45 — From Breakdown To Breakthrough: A Competitive Outlook For 2012 & Beyond
Stephane Garelli, *Professor*, **IMD & UNIVERSITY OF LAUSANNE**

Inside Behavioural Finance
Behavioural Insights
09.25 — Behavioural Risk Management: Understanding & Controlling The Emotional Components Of Risk
Greg Davies, *Head Of Behavioural & Quantitative Investment Philosophy*
BARCLAYS WEALTH

Guest Academic Address
10.05 — Predicting The Market
Stephen Ross, *Franco Modigliani Professor Of Financial Economics*
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Time	
10.45	*Morning Coffee & Networking Break*

Time	STREAM A The Latest Practical Techniques In Funding, Discounting & CVA	STREAM B Innovations In Volatility Modelling, Hedging & Trading	STREAM C New Advances In Risk & Portfolio Management Techniques	STREAM D Cutting-Edge FX Pricing, Hedging & Trading Strategies	STREAM E New Approaches To Pricing & Hedging Credit Derivatives
11.15	Pricing In The Absence Of A Risk Free Rate **Louis Scott** **UBS INVESTMENT BANK**	**Variance Curves In Different Risk Regimes:** Volatility Of Volatility In A Brave New World **Chris Cole** **ARTEMIS CAPITAL MANAGEMENT**	**Financial Modelling In Times Of Crises:** An Introduction Into Non-Equilibrium Finance **Alex Langnau** **ALLIANZ INVESTMENT MANAGEMENT**	Maximising Profitability In FX Options Trading & What The Profits Tell Us About The Market That Generated Them **John Crosby** **GLASGOW UNIVERSITY & GRIZZLY BEAR CAPITAL**	**The Future Of Credit Derivatives Trading** Which Products Have recovered From The Crisis, How Are New Approaches Such As Electronic Trading Impacting Credit Markets & How Might Things be Traded In The Future? **Alberto Gallo** **RBS**
11.55	The Benefits & Dangers Of Mitigating CVA **Jon Gregory** **SOLUM FINANCIAL PARTNERS**	Volatility Interpolation, Extrapolation & Dynamics **Jesper Andreasen** **DANSKE BANK**	Market Impact & Hidden Liquidity **Jean-Philippe Bouchaud** **CAPITAL FUND MANAGEMENT**	Valuing With Correlation Smile **Peter Austing** **BARCLAYS CAPITAL**	Quanto CDS For Corporate & Sovereign Debt **Peter Jaeckel** **VTB CAPITAL & OTC ANALYTICS**
12.35	*Lunch – Plus Meet The Speaker Lunch Tables* **Stephen Ross**, **MASSACHUSETTS INSTITUTE OF TECHNOLOGY** **Jesper Andreasen**, **DANSKE BANK**, **Greg Davies**, **BARCLAYS WEALTH** **Bruno Dupire**, **BLOOMBERG**				
14.00	**DVA** Developing A Unified Framework To Take Into Account One's Own Credit Risk **Christoph Burgard** **BARCLAYS CAPITAL**	**SPECIAL EXTENDED SESSION** Advances In Volatility Derivatives **Bruno Dupire** **BLOOMBERG**	**Pricing Beyond Complete Market Theorem** How Can We Incorporate Model & Market Risk Into Pricing? **John Crosby** **GLASGOW UNIVERSITY & GRIZZLY BEAR CAPITAL** **Joerg Kienitz** **DEUTSCHE POSTBANK** **Alex Langnau** **ALLIANZ INVESTMENT MANAGEMENT**	Pricing Forex, Cross Currency & Basket Options Under Stochastic Volatility Environment **Akihiko Takahashi** **UNIVERSITY OF TOKYO**	Innovations In Credit Derivative Modelling **Andrei Serjantov** **BNP PARIBAS**
14.40	Counterparty Risk On Interest Rate Derivatives In A Multiple Curve Setup **Stephane Crepey** **UNIVERSITE D'EVRY**		Enhanced Techniques To Backtest Model & Hedging Performance **Eva Strasser** **JP MORGAN**	FX Volatility Modelling With Sovereign & Devaluation Risk **David Shelton** **BANK OF AMERICA MERRILL LYNCH**	**Pricing & Hedging CLNs & CDS Products** Incorporating Macroeconomic Data In CDS Models To Ensure Plausible Forward Dynamics **Dherminder Kainth** **RBS**
15.20	**If A Dealer Defaulted, Would Anybody Notice?** Modeling CVA For Systemically Important Counterparties **Alexander Sokol** **NUMERIX/COMPATIBL**	**Stochastic Volatility:** Estimation Theory & Techniques **Alireza Javaheri** **JP MORGAN**	**Index Option Risk Premiums:** Measurement & Trading **Vivek Kapoor** **CITI**	Modelling Of FX Spread Options & Related Two Factor Problems **William McGhee** **RBS**	**Latest Advances In Equity Derivatives** Improving Equity Modelling: A Perspective Broader Than Just A "Good" Model **Alberto Elices** **SANTANDER**
16.00	*Afternoon Tea*				
16.30	Overcoming The Challenges Of Modelling Wrong Way Risk In CVA **Dan Rosen** **R2 FINANCIAL TECHNOLOGIES & UNIVERSITY OF TORONTO**	The Smile Calibration Problem Solved **Julien Guyon** **SOCIÉTÉ GÉNÉRALE**	**Two Of A Kind:** Stochastic Volatilities In Risk Management **Jean-Baptiste Brunac** **BNP PARIBAS** **Nastja Bethke** **BNP PARIBAS**	Using Lattice Methods For Fast Pricing Of FX Target Redemption Notes **Iain Clark** **UNICREDIT**	**Stochastic Dividends** Self-Consistent Models & Their Impact On Derivative Pricing **Hans Buehler** **JP MORGAN**
17.10	From Funding To Gap Risk: A Consistent Methodology For Computing Credit CVA **Youssef Elouerkhaoui** **CITI**	Exploring A New Approach For Efficient Implementation Of Stochastic Volatility	Managing Model Risk For Valuation And Hedging **Joerg Kienitz** **DEUTSCHE POSTBANK**	A Fast Analytic Model For Valuing Exotic FX Options Under The Smile **Kurt Smith** **CURTIN UNIVERSITY**	New Strategies & Techniques In Equity Derivatives Trading **Arie Boleslawski** **SOCIÉTÉ GÉNÉRALE**
17.50	**PANEL** Practically Managing CVA, DVA & FVA All Together **Joe Holderness** **JP MORGAN** **Christoph Burgard** **BARCLAYS CAPITAL** **Youssef Elouerkhaoui** **CITI**	Quantum Local Volatility **Adil Reghai** **NATIXIS**	A Non-Parametric Bayesian Black Swan Model For Financial Markets With Knightian Uncertainty **Igor Halperin** **JP MORGAN**	FX Option Pricing Using Stochastic-Local Volatility Model **Zili Zhu** **CSIRO**	**Trading Exotic Equity Derivatives** The Latest Challenges & Opportunities Arising From The Recent Market Turmoil **Mike de Vegvar**, **UBS** **Peter Van Kleef** **LAKEVIEW CAPITAL MARKET SERVICES** **Alireza Javaheri** **JP MORGAN**
18.30	*Champagne Roundtables & Welcome Drinks* **Chris Cole**, **ARTEMIS CAPITAL MANAGEMENT**, **Stephane Crepey**, **UNIVERSITÉ D'EVRY** **John Crosby**, **GLASGOW UNIVERSITY & GRIZZLY BEAR CAPITAL**, **Alireza Javaheri**, **JP MORGAN** **Peter Austing**, **BARCLAYS CAPITAL**, **Peter Jaeckel**, **VTB CAPITAL**, **Alex Langnau**, **ALLIANZ INVESTMENT MANAGEMENT**				

Main Conference Day Two
Wednesday 18 April 2012

Time	STREAM A — Cutting-Edge Innovations In Interest Rate Modelling & Curve Construction	STREAM B — New Advances In Correlation Modelling	STREAM C — New Strategies & Techniques For Commodities Trading & Risk Management	STREAM D — The Latest Developments In Derivatives Regulation & Capital Requirements	STREAM E — New Practical Methods For Improving Computational Efficiency
08.30	Registration & Coffee				
09.00	**Revisiting The First Principles Of Interest Rate Modelling:** What Assumptions Underlie Yield Curves, Why Do We Have Multiple Curves & How Can We Reconcile Them? **Massimo Morini** BANCA IMI	**"The Risk On – Risk Off Phenomenon"** Measuring & Tracking Increasing Correlation Between Asset Classes & Understanding The Impact For Pricing, Hedging, Investment Strategies & Financial Stability **Stacy Williams** HSBC	**Future Outlook For Commodities** Evaluating The Impact Of Speculators, Politicians & Regulators On Commodities Markets & Assessing Where The Future Opportunities Are To Be Found	OTC Derivatives Market: Issues & Perspectives **Rama Cont** COLUMBIA UNIVERSITY	**Adjoint Algorithmic Differentiation** A New Approach for Real Time Risk Management In Monte Carlo **Luca Capriotti** CREDIT SUISSE
09.40	Using Macro-Finance Models To Build A Simulation Framework For The Interest Rate Curve **Sandrine Ungari** SOCIÉTÉ GÉNÉRALE	Correlation & Decorrelation In Multi-Asset Models **Juergen Hakala** EFG FINANCIAL PRODUCTS	**Long-Term Forecasts** Developing Filtered, Multi-Factor Models To Take Into Account Macro-Economic & Latent Factors For Accurately Pricing Futures & Forwards To Enable Long-Term Forecasts **Michael Dempster** UNIVERSITY OF CAMBRIDGE	Examining The Impact Of Proposed Regulatory Changes On Business Models, Market Structure & The Efficiency Of The Industry **Michael Jacobs** OFFICE OF THE COMPTROLLER OF THE CURRENCY	**Monte Carlo Model Calibration** Combining Numerical & Technological Advances For Fast & Robust Model Calibration Via Monte Carlo **Jan Maruhn** UNICREDIT
10.20	Calibration Of Multi-Curve Models: Why We Need To Model A Stochastic Basis **Fabio Mercurio** BLOOMBERG	**Advances In Equity Correlation Modeling** Developing An Improved Model For Correlation Modelling **Sebastien Bossu**	Pricing Agricultural Derivatives In A World Of Land & Water Scarcity & Growing Population **Helyette Geman** UNIVERSITY OF LONDON & ESCP EUROPE	**CCP MASTERCLASS** *Session 1* **Understanding The Latest Regulatory Requirements For Central Clearing:** Determining What Has To Be Cleared, Assessing The Impact On Capital Requirements & The Impact Of CSAs On Initial Margin	A New Monte Carlo Approach To Pricing In Local Volatility Models With Jumps **Martijn Pistorius** IMPERIAL COLLEGE LONDON
11.00	Morning Coffee				
11.30	Geometric Lévy Models With Applications To Interest Rate Dynamics **Lane Hughston** UNIVERSITY COLLEGE LONDON	**Innovations In Volatility Modelling, Hedging & Trading** Useful & Useless Asymptotic Formulas For Implied Volatility **Alex Lipton** BANK OF AMERICA MERRILL LYNCH	Financialisation Of Commodities: Oil As An Asset Class **Ilia Bouchouev** KOCH SUPPLY & TRADING	*Session 2* Central Counterparty Risk **Matthias Arnsdorf** JP MORGAN *Session 3* Overcoming The CVA & DVA: CCPs & Margin Lending **Claudio Albanese** KING'S COLLEGE LONDON	Assessing The Latest Advances In High Performance Computing & Their Applications For Finance **Peter van Kleef** LAKEVIEW CAPITAL MARKET SERVICES
12.10	CMS Convexity With Full Volatility Risk **Vladimir Piterbarg** BARCLAYS CAPITAL	A Regime Switching Model For VIX & Volatility Derivatives **Philippe Henrotte** ITO33	The Impact Of Commodity Prices On Electricity Markets **Elisa Scarpa** EDISON TRADING		Optimal Transport: A Pleasant Ride In Finance **Pierre Henry-Labordere** SOCIÉTÉ GÉNÉRALE
12.50	Lunch – Plus Meet The Speaker Lunch Tables — Marco Avellaneda, COURANT INSTITUTE, NYU; Peter Carr, MORGAN STANLEY; Tom Hyer, BTG PACTUAL; Alex Lipton, BANK OF AMERICA MERRILL LYNCH				
14.20	The Term Structure Of Interbank Risk **Damir Filipovic** EPFL	Localising To Extremes **Peter Carr** MORGAN STANLEY	Extrapolating In Energy Markets **Ehud Ronn** UNIVERSITY OF TEXAS AT AUSTIN	**BASEL MASTERCLASS** *Session 1* **CRM** Modelling The Comprehensive Risk Measure For Correlation Trading Portfolios **Gabriel Medina** HSBC	**GPUs** New Techniques For Using GPUs For Derivatives Pricing & Modelling
15.00	**Coping With Negative Rates:** What Does It Mean For Markets, Can You Trade It & Examining What The Volatility Surface Looks Like **Hans-Peter Schöch** NOMURA	Volatility Expansions Based On Laplace's Method **Peter Friz** TU-BERLIN	**Commodity Spread Option In Illiquid Markets** Pricing & Risk Management **Joseph Chen** TRANSALTA CORPORATION	*Session 2* **CVA VaR** Exploring The Latest Approaches For Calculating CVA VaR Across Global Portfolios **Peter Dobranszky** BNP PARIBAS	Combining Historical Returns & Option Prices Through Density Estimation With Constraints **Esteban Tabak** COURANT INSTITUTE, NYU
15.40	Afternoon Tea				
16.10	Application Of Forward Induction In Computing CVA/ DVA For Portfolio Of Exotic Derivatives **Marat Kramin** WELLS FARGO SECURITIES	The Riemannian Distance Function & The Small Maturity Limit In Local-Vol Heston Models **Peter Laurence** UNIVERSITA DI ROMA 1	Developing & Risk Managing Derivatives For The Emissions Market In The Face Of Political Pressure	*Session 3* **IRC** Examining New Techniques For Validating & Stress Testing IRC **Vivien Brunel** SOCIÉTÉ GÉNÉRALE	On Adjoint Parameter Calibration **Uwe Naumann** RWTH AACHEN UNIVERSITY
16.50	Practical Techniques Of Modelling Replication Sensitive Products In Volatile Markets **Dong Qu** UNICREDIT	Symmetry Methods For The Quadratic Gaussian Libor Model **Paul McCloud** NOMURA	Calculating Transaction Costs For Commodities Spread Options **Roza Galeeva** MORGAN STANLEY	**Transaction Tax** Examining The Potential Impact Of Regulatory Proposals To Introduce A Transaction Tax	Option Pricing With FFT, CFT, Saddle Point, Etc. - Can We Do It Better? **Andrey Itkin** NYU POLY
17.30	Champagne Roundtable Discussion Groups & The Global Derivatives Cocktail Reception — Michael Jacobs, OFFICE OF THE COMPTROLLER OF THE CURRENCY; Stacy Williams, HSBC, Massimo Morini, BANCA IMI, Lane Hughston, UNIVERSITY COLLEGE LONDON; Michael Dempster, UNIVERSITY OF CAMBRIDGE				

Main Conference Day Three
Thursday 19 April 2012

Time		
08.20	Registration & Coffee	
08.40	Chairman's Opening Remarks	
08.45	**Global Credit Market Outlook** Current Conditions & Outlook For Global Corporate & Sovereign Debt Credit Markets **Edward I. Altman**, *Max L. Heine Professor Of Finance*, STERN SCHOOL OF BUSINESS, NEW YORK UNIVERSITY	
09.25	The Age Of Stochastic Calculus **Tom Hyer**, *Portfolio Manager*, BTG PACTUAL	
10.05	**PANEL** — **The New Nature Of Quant** How Are, And How Should, We Be Challenging Traditional Assumptions, Re-Examining First Principles, & Extending Quantitative Finance Beyond Perfect Market Theory? **Peter Carr**, *Managing Director*, MORGAN STANLEY; **Massimo Morini**, *Head of Credit Models & Coordinator Of Model Research*, BANCA IMI; **Attilio Meucci**, *Chief Risk Officer*, KEPOS CAPITAL	
10.45	Morning Coffee	
11.15	**Quantitative Problem Solving Working Groups** Get Your Questions Answered By The Experts! Make The Most Of Your Time At The Conference by Posing Your Specific Questions To The Expert Panel & The Gathering Of Like-Minded Practitioners *Make sure the challenges you are facing get addressed – email your question to mhoughton@icbi.co.uk* — Innovations In Equity Derivatives; Innovations In Interest Rate Derivatives; Innovations In Credit Derivatives	
11.45	5 Minute Transfer Break	

Time	STREAM A — The Latest Advances In Modelling Counterparty Credit Risk, Collateral, & Sovereign Risk	STREAM B — Pricing, Hedging & Trading Fixed Income, Inflation, Longevity & Real Estate Derivatives	STREAM C — Innovations In Quant Investment Strategies & 2nd Generation Volatility Products	STREAM D — New Approaches To Modelling Hybrid & Structured Products
11.50	**The Zeeman Effect In Finance** From CSA Discounting To The CVA/DVA/FVA Puzzle **Marco Bianchetti** BANCA INTESA SANPAOLO	**Inflation Derivatives** Examining the Latest Advances In Pricing & Hedging Inflation Derivatives **Chia Tan** DEUTSCHE BANK	**ETF Trading & Volatility** Leveraged ETF Pairs, VIX ETFs & Synthetic Commodity ETFs: Consequences For Markets & Systemic Risk **Marco Avellaneda** COURANT INSTITUTE OF MATHEMATICAL SCIENCES, NEW YORK UNIVERSITY & FINANCE CONCEPTS	Closed-Form Pricing Of Equity Quanto Options In The Presence Of Stochastic Volatility **Alexander Giese** UNICREDIT
12.30	Restructuring Counterparty Credit Risk **Damiano Brigo** KING'S COLLEGE LONDON	Overcoming The Challenges To Successfully Modelling Credit/ Inflation-Linked Hybrid Retail Products **Martin Krekel** UNICREDIT	**Modelling VIX** Achieving Consistent Modelling Of VIX & Equities Derivatives **Artur Sepp** BANK OF AMERICA MERRILL LYNCH	Hybrid Derivatives & Extension Of Pricing Models For CVA **Han Lee** RBS
13.10	Lunch			
14.30	**Funding Valuation Adjustment** A Consistent Framework Including CVA, DVA, Collateral, Netting Rules & Re-Hypothecation **Andrea Pallavicini** BANCA IMI	**Mortgage Derivatives** Understanding The Dynamics Of The US Housing Market, Forecasting Future Prices & The Implications For Mortgage Derivatives **Paul Thurston** CORNELL CFEM	A Simple Model Of Stock Index Volatility **Piotr Karasinski** EBRD	**Synthetic ETFs** The Latest Approaches For Risk Managing & Modelling Synthetic ETFs **Christos Costandinides** DEUTSCHE BANK
15.10	An Objective Estimate Of The Short-Term Credit Health Of Firms **Rajan Singenellore** BLOOMBERG	Key Practical Strategies For Hedging Longevity Risk **Enrico Biffis** IMPERIAL COLLEGE LONDON	**From Art To Science** Technology Of Innovation **Andrei Soklakov** DEUTSCHE BANK	Structuring & Pricing Structured Products To Ensure Transparency & Fair Distribution Of Risk & Reward
15.50	Afternoon Tea			
16.20	Modelling & Valuation Changes Caused By OIS Discounting & Collateral Treatment **Faisal Yousaf** HSBC	**VARIABLE ANNUITIES MASTERCLASS** *Session 1* How To Price & Hedge Variable Annuities With Unhedgable Risk **Stefan Jaschke** MUNICH RE	**Macro Volatility Strategies** Going Beyond The Equities & VIX **Arthur Berd** JOURNAL OF INVESTMENT STRATEGIES & BERD LLC	**Multi-Factor Models For Convertible Bonds:** Capturing Multiple Sources Of Risk **Jan de Spiegeleer** JABRE CAPITAL PARTNERS
17.00	**Managing FX Risk In Collateral** Modelling The Impact Of Currency Choice & Accurately Pricing The Switching Option	*Session 2* How To Structure Variable Annuities Without Unhedgable Risk **Yves Lehmann** UBS INVESTMENT BANK; **Eric Bensoussan** UBS INVESTMENT BANK	**VIX As A Hedging Tool** Using VIX Futures & Options For Hedging & Risk Management **Alexey Polishcuk** BLOOMBERG	Pricing & Risk Management Of CoCos **Wim Schoutens** CATHOLIC UNIVERSITY OF LEUVEN
17.40	End Of Day 3			

For latest agenda and to register: www.icbi-derivatives.com   Tel: +44 (0) 20 7017 7200   Fax: +44 (0) 20 7017 7807   Email: info@icbi.co.uk

3

The Latest Innovations In Fixed Income Modeling

Patrick Hagan, *Head Of Quantitative Analytics For Chief Investment Office,* **JP MORGAN**
Patrick S. Hagan received his BS and Ph.D. in Applied Mathematics from the California Institute of Technology. He is well known throughout the mathematical finance community, having developed several models and methodologies which are now industry standard. Before joining JP Morgan as Head of Quantitative Analytics for the Chief Investment Office, he worked for several banks and third party software providers, heading the research groups which designed their trading systems and developed the component models, calibration methods, and numerical algorithms for pricing, structuring, and managing derivatives. Before entering finance, he helped design chemical reactors for Exxon, was a scientist for Los Alamos's Theory and Computer Research & Applications groups, and was the Deputy Director for Los Alamo's Center for Nonlinear Science. He is noted for solving Uhlenbeck's Unsolved Problem B, the Generalized Milne Problem, and developing explicit methods for constructing half range expansions. He is a former director of the US Industrial Study Group, and has taught applied mathematics and mathematical modeling courses at Stanford University, the California Institute of Technology, and the Courant Institute (NYU), and is an adjunct professor at several institutions.

Basic Fixed Income Instruments
- Basics: discount factors, FRAs, swaps, and other delta products
- Curve stripping, bucket deltas, and managing IR risks
- Martingales & the fundamental theorem
- Vanilla options (caps, floors, and swaptions) & Black's model
- Vol matrices, bucket vegas, and managing vol risks
- Smiles, local volatility models, and equivalent volatilities
- Mishedging, and the development of the stochastic vol model
- Using the SABR model to manage volatility smiles, hedging stability
- Lévy based models for managing

volatility surfaces

Current Market Practice
- Money vs. scrip
- Holiday calendars, business day rules, and schedule generation
- Day count fractions
- Ref rates & basis spreads
- Leverage, cost of funds, and the credit crisis

Managing Exotics
- Three elements to modern pricing: model, calibration, and evaluation
- Choosing a model and the five main interest rate risks
- HJM models - strengths, weaknesses,

usage
- BGM/LMM models - strengths, weaknesses, usage
- Short rate models - strengths, weaknesses, usage
- Markovian models - strengths, weaknesses, usage

Practical Pricing Of Exotics
- LGM model
- Callable swaps (Bermudans)
- Calibration strategies and the selection of calibration instruments
- Connection between calibration instruments and vega risks
- Explicit calibrations for Bermudan

Volatility & Correlation Modeling & Trading In Practice

Bruno Dupire
Head of Quantitative Research
BLOOMBERG
Bruno Dupire is head of Quantitative Research at Bloomberg L.P., which he joined in 2004. Prior to this assignment in NY, he has headed the Derivatives Research teams at Société Générale, Paribas Capital Markets and Nikko Financial Products where he was a Managing Director. He is best known for having pioneered the widely used Local Volatility model (simplest extension of the Black-Scholes-Merton model to fit all option prices) in 1993 and subsequent stochastic volatility extensions. He is a Fellow and Adjunct Professor at NYU and he is in the Risk magazine "Hall of Fame" of the 50 most influential people in the history of Derivatives and Risk Management. He is the recipient of the 2006 "Cutting edge research" award of Wilmott magazine and was voted in 2006 the most contributing practitioner of the 5 previous years in the ICBI Global Derivatives industry survey. He is the recipient of the Risk Magazine "Lifetime Achievement" award for 2008.

Review Of Some Pressing Market Topics
- Building a good volatility surface
- Stochastic Local Volatility Models
- Calibration of local correlation
- Decomposition of Vega across strikes and maturities
- Joint calibration to SPX and VIX skews
- Options on double short ETF

The Fundamentals Of Volatility
- The different kinds of volatility
- Market facts: volatility behavior and regimes
- Historical volatility estimation
- Implied volatility inter/extrapolation, Roger Lee's moment formula
- Study of empirical behavior market facts: volatility behavior and regimes
- Historical volatility estimation
- Implied volatility inter/extrapolation, Roger Lee's moment formula

- Study of empirical behavior

Volatility Models Review
- Black-Scholes model
- Local Volatility Model
- Heston model
- SABR model
- Bergomi model
- Stochastic Local Volatility Models

Building A Good Implied Volatility Surface
- Requirements: accurate, arbitrage free, robust and smooth
- First step: model fitting
- Second step: non parametric fitting of residuals
- Examples and applications

Local Volatility In Practice
- Obtaining the local volatility surface:

calibration vs. Stripping formula
- Pricing with local volatility: finite difference and Monte Carlo
- Robust risk management: computing superbuckets
- Stochastic interest rates

Volatility Arbitrage
- Frequency/phase arbitrage
- Dynamic skew arbitrage
- Volatility derivatives arbitrage

Advanced topics
- Matching the volatility surface and the forward skew
- Impact of the skew on exotics: case study with barrier options and cliquets
- Delta hedge: calendar time and business time delta hedge
- Linking skew and uncertainty on historical volatility

The Future Of CVA

Jon Gregory, *Partner*
SOLUM FINANCIAL PARTNERS
Dr Jon Gregory is a partner at Solum Financial and specialises in counterparty risk and CVA related consulting and advisory projects. He has worked on many aspects of credit risk in his career, being previously with Barclays Capital, BNP Paribas and Citigroup. He is author of the book "Counterparty Credit Risk: The new challenge for global financial markets". Jon holds a PhD from Cambridge University.

1. CVA In Practice
- Quantification of exposure
- Mapping of credit curves
- Wrong way risk
- Basel III

2. DVA & Funding
- DVA definition
- Can you monetise DVA?
- Funding and FVA (LVA)
- Framework for DVA and FVA

Interest Rates After The Credit Crunch: Market & Model Evolutions

Marco Bianchetti, *Senior Quant & Risk Manager,* **BANCA INTESA SANPAOLO**
Marco Bianchetti joined the Market Risk Management, Pricing and Financial Modelling area of Banca Intesa Sanpaolo in 2008. His recent work focuses on model risk management, interest rate modelling and pricing of derivatives. Previously he worked for eight years in the front office Financial Engineering area of Banca Caboto (now Banca IMI), developing pricing models and applications for fixed income and inflation trading desks. He holds a M.Sc. in theoretical nuclear physics and a Ph.D. in theoretical condensed matter physics from the University of Milan.

The Interest Rate Market Across The Credit Crunch
- Back to basics: Libor/Euribor/Eonia/Repo interest rates
- Stylized facts and overview of market data
- Interest rate market segmentation after the credit crunch
- Solving the puzzle of interest rate market segmentation
- Counterparty risk and collateral
- From libor to OIS discounting, how the market has changed

Classical Interest Rate Market Practices & Models
- Dimensions and units
- Short rate, Bank account, Zero coupon bond
- Pricing measures and measure change
- Discount/capitalization factors and Deposit contract
- Forward Libor rate and FRA/Futures contract
- Forward Swap Rate, Swap and Basis Swap contract
- Overnight Indexed Swap (OIS) contract
- Fixed and floating rate Bonds
- Cap & Floor/Swaption contracts

- Classical, single curve, pricing & hedging interest rate derivatives

Modern Interest Rate Market Practices & Models
- The multiple-curve market approach
- Restating the problem, basic assumptions and notation revisited
- "Ingenuous" pricing approach: FRAs, Swaps, Caps/Floors, Swaptions
- No arbitrage and forward basis, Foreign-currency analogy approach
- Modern pricing of vanillas: FRAs, Swaps
- Modern pricing of vanilla options: Caps/Floors/ Swaptions, Black's model revisited
- Multiple-curve & Volatility bootstrapping
- Multiple curves, multiple deltas & vegas, multiple hedging

Understanding & Managing Model Risk

Massimo Morini, *Head Of Credit Models & Coordinator Of Model Research*
BANCA IMI
Massimo holds a Ph.D in Mathematics and a MSc in Economics. He is Head of Credit Models and Coordinator of Model Research at IMI Bank. Massimo is Professor of Fixed Income at Bocconi University and was Research Fellow at Cass Business School of London City University. He regularly delivers advanced training on model risk management, credit modelling, interest rate market models and correlation modelling. His papers have appeared in journals including Risk Magazine, Mathematical Finance and the Journal of Derivatives.

- Understanding Model Risk: model uncertainty, consensus changes, accountancy constraints and regulator prescriptions. The role of illiquidity and the lessons from past crises.

- A current example on fundamental risks: how the interest rates market changed with the crisis. Discounting, Funding, Basis spreads and new relationships for forward rates. Analysis and solutions.

- A current example on technical risks: how the crisis broke the foundations of most approximations for Libor Market Model, CMS and SABR. Analysis and Solutions.

- The difference between model risk in pricing and model risk in hedging. An example on Stochastic vs Local Volatility models

- When the payoff is wrong. Examples on credit index options and bilateral counterparty risk.

Latest Innovations In Modelling & Trading Commodities

Helyette Geman, *Director Commodity Finance Centre,* **UNIVERSITY OF LONDON & ESCP EUROPE**
Helyette Geman is the Director of the Commodity Finance Centre and ESCP Europe. She is a graduate of Ecole Normale Superieure in Mathematics, holds a Masters degree in Theoretical Physics and PhDs in Probability and Finance. Professor Geman has been a scientific advisor to major financial institutions, energy and mining companies for the last 16 years, covering the spectrum of interest rates, catastrophic risk, crude oil and energy, as well as metals and agriculturals. She was previously the Head of Research at Caisse des Depots in Paris. Professor Geman was the first president of the Bachelier Finance Society and has published more than 106 papers in top international finance Journals including the Journal of Finance, Mathematical Finance, Journal of Financial Economics. She was named in 1993 Member of Honour of the French Society of Actuaries. Professor Geman's research includes interest rates and catastrophic insurance, asset price and commodity forward curve modeling. Prof Geman was named in 2004 in the Hall of Fame of Energy Risk and received in July 2008 the medal for Sciences of the Institute for Advanced Studies of the University of Bologna for the CGMY model, a pure jump Levy process widely used in finance since 2002. Her book Commodities and Commodity Derivatives: Energy, Metals and Agriculturals published by Wiley Finance in January 2005 is the reference book in the field. Prof Geman is a Member of the Board of the UBS-Bloomberg Commodity Index. She edited in 2008 the book Risk Management in Commodity Markets: from Shipping to Agriculturals and Energy and became in 2010 the first Wilmar-International Invited Professor of Commodities Business at Singapore Management University.

Session 1
- Government and event-driven scarcity as the major risk in commodity markets
- Inventories and spot price volatility
- Theory of storage revisited: is contango the new norm for commodity forward curves?
- Evidence from some major markets. consequences for investing in commodity indexes
- Shipping and locational arbitrage: the example of coal

Session 2
- Industrial metal prices as an indicator of the world economy growth: the case of copper

Left column boxes

- Predicted vs. actual vol matrices for different calibrations
- Dependence of Bermudan price on choice of calibration instruments
- Dependence of hedges on calibration choices
- Conclusions

Adjusters & Risk Migration
- Mis-hedging, mis-pricing, and the need for risk migrators
- Price sharpening via adjusters
- Example: Correcting a Bermudan calibrated to ATM swaptions
- Example: Correcting a Bermudan calibrated to caplets

Pricing & Hedging Callable Range Notes & Accrual Swaps
- Definition of the deal
- Mismatched payoffs & convexity corrections
- Using replication to price non-callable range notes
- LGM model and potential calibration strategies
- Potential misledging of swaption or caplet risks
- Using internal adjusters to correct prices and hedges

- Application to volatility derivatives: links between vanilla option, VIX options and variance options
- Time based vs move based strategies
- Robust hedging: decomposing volatility risk across strikes and maturities

Correlation Basics
- Misconceptions about correlation
- Measures of dependency: correlation, copula and more
- Correlation across assets and time
- Coupling random variables or processes?
- Coupling levels or returns?

Modeling Correlation
- Estimating correlation; asynchronous and incomplete data
- Study of empirical facts
- nD Local Volatility model
- Stochastic covariance matrix modeling

- How to model stochastic correlation
- How to correlate jumps

Pricing With Correlation
- Break-even points in n dimensions
- Correlation skew: basket options and CDO examples
- Spread options and steepeners
- Pricing Mountain Range options
- Hedgeability with options on the components

Correlation Trading
- What can be locked and not locked
- Correlation swaps and options
- Correlation management
- Dispersion and diversification trades and arbitrage

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3. Collateral & The Impact Of Wrong Way Risk
- The impact of CSAs on CVA
- Zero threshold risk
- Impact of wrong way risk

4. Central Counterparties
- Mechanics of central clearing
- Benefits and risks of central clearing
- Central clearing impact on CVA

Introducing Modern Interest Rate Models
- Beyond the Black's model
- Multiple-Curve SABR revisited
- Excel classwork: SABR construction and calibration
- Multiple-Curve short-rate models
- Multiple-Curve LMM models

Moving Towards CSA Discounting
- Revealing CSA discounting on the market
- Pricing derivatives under CSA: CSA chaos, the new ISDA Standard CSA
- Pricing derivatives not under CSA: how to consistently include Credit, Debt and Funding Adjustments (CVA, DVA, FVA)
- Trading, IT, Risk Management, Accounting and Management issues
- The role of quants

Conclusions, Open Issues, Questions & Discussion

- Model Risk in statistical arbitrage: capital structure arbitrage and cap-swaption discrepancies. The difference between uncertainty and arbitrage
- Benchmarking for the quantification of model risk: examples on liquidity, CVA, mapping
- The comparison of models and the

- computation of provisions: model reserves, model limits, quantitative triggers
- A practical scheme on model validation and model risk management with three real-world examples for Equity, Rates and Credit.

- The new outlook in steel and iron ore
- Rare earths as crucial metals in the electronic and aircraft industry. The chinese government intervention to cut or limit supply
- Gold as a numeraire commodity in the context of demonetized currencies
- Silver, platinum and palladium
- Agricultural commodities in a world of land and water scarcity and growing population
- The examples of corn and wheat in the recent period
- The fertilizer market

Main agenda column

08.00 Registration & Coffee

08.40 Chairman's Opening Address

08.45

Guest Economic Address
THE GLOBAL ECONOMIC OUTLOOK
From Breakdown To Breakthrough: A Competitive Outlook For 2012 & Beyond

Stephane Garelli, *Professor*
IMD & UNIVERSITY OF LAUSANNE
Stéphane Garelli - a world authority on competitiveness - has pioneered research in this field for 25 years. Professor at IMD Lausanne, where he heads the World Competitiveness Centre, he is also associate professor at the University of Lausanne. Professor Garelli is closely connected to the world of business. He is, among others, Chairman of the Board of Directors of "Le Temps", the leading French language Swiss newspaper. He was formerly Chairman of the Board of the Sandoz Financial and Banking Holding, and member of the board of the Banque Edouard Constant. For twelve years he was permanent senior adviser to the European management of Hewlett-Packard, and before that Managing Director of the World Economic Forum and of the Davos Symposium for many years. He is a member of a number of institutes, such as: China Enterprise Management Association, Board of the 'Fondation Jean Monet pour l'Europe', The Swiss Academy of Engineering Sciences, the Mexican Council for Competitiveness, etc. He is the author of numerous publications on competitiveness and global business, and in 2006 he published his best-selling book *Top Class Competitors - How Nations, Firms and Individuals Succeed in the New World of Competitiveness* with Wiley.

09.25

Inside Behavioural Finance
Behavioural Risk Management: Understanding & Controlling The Emotional Components Of Risk

Greg B. Davies, *Head Of Behavioural Finance & Quantitative Investment Philosophy*
BARCLAYS WEALTH
Greg heads up Barclays Wealth's global Behavioural Finance and Quantitative Analytics teams, and is responsible for designing and implementing the Barclays Wealth Investment Philosophy globally. Prior to this he gained commercial experience for several years with Oliver, Wyman & Co., a financial services strategy consultancy, and continued consulting throughout his PhD as a Director of Decision Technology, a boutique consultancy which specialises in developing commercial applications from academic decision sciences and behavioural economics. He has authored papers on risk, portfolio theory and investment decision making in multiple disciplines of Economics, Psychology and Decision Theory; guest lectures at UCL, LSE and LBS.

10.05

Guest Academic Address
Predicting The Market

Stephen Ross, *Franco Modigliani Professor Of Financial Economics*, **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**
Stephen A. Ross is the Franco Modigliani Professor of Financial Economics at MIT, Managing Partner of Ross Farrar, and the CEO of Compensation Valuation, Inc. He was previously the Sterling Professor of Economics and Finance at Yale University and, before that, a professor of economics and finance at the Wharton School of the University of Pennsylvania. Professor Ross is the author of more than 100 articles in economics and finance. He received his Ph.D. in economics from Harvard in 1970. He is probably best known for having invented the Arbitrage Pricing Theory and the Theory of Agency, and as the co discoverer of risk neutral pricing and of the binomial model for pricing derivatives. Models developed by him and coworkers are now standards for pricing in major securities trading firms. He has been the recipient of numerous prizes and awards including the Graham and Dodd Award for financial writing, the Pomerance Prize for excellence in the area of options research, the University of Chicago's Leo Melamed Prize for the best research by a business school professor and the 1996 IAFE Financial Engineer of the Year Award. In 2006 he was the first recipient of the CME-MSRI Prize in Innovative Quantitative Application and in 2007 he won the Jean-Jacques Laffont Prize given by the Toulouse School of Economics. A Fellow of the Econometric Society and a member of the American Academy of Arts and Sciences, he currently serves as an Associate Editor of the Journal of Economic Theory. Ross has served as an advisor to government departments such as the U.S. Treasury, the Commerce Department, the Internal Revenue Service and the EXIM Bank. He co-founded and was the co-chairman of Roll and Ross Asset Management Corp., chairman of the American Express Advisory Panel, and a former director of General Re, CREF and Freddie Mac. He is currently Chairman of the Investment Advisory Board of IVC International, Ltd., a director of IV Capital, and a trustee of Caltech where he chairs the investment committee.

10.45 Morning Coffee

> **Stream A:**
> **The Latest Practical Techniques In Funding, Discounting & CVA**

11.15

Pricing In The Absence Of A Risk Free Rate
- Is there a risk-free rate for discounting in the absence of default-free economic agents and institutions?
- The notion of a shadow "risk free" interest rate
- Implications for valuation models in the banking sector
- Implications for the pricing of multi-currency derivatives
- What happened to covered interest rate parity?

Louis Scott, *Managing Director, Co-Head, Quantitative Analytics*
UBS INVESTMENT BANK
Louis Scott is currently a Co-Head of Quantitative Analytics in the Investment Bank at UBS. He began his banking career in Fixed Income Quantitative Research at Morgan Stanley, where he spent 13 years, splitting his time between quantitative research and risk management. In February 2010, he moved to UBS where he joined Investment Bank Risk Control focusing on quantitative risk management. In June 2011, he moved to his current role in which he is responsible for managing a global group of professionals responsible for front office pricing models. Prior to his banking career, he was a finance professor and he published academic research on derivative pricing in the major finance and mathematical finance journals.

11.55

The Benefits & Dangers Of Mitigating CVA
- The problem of CVA
- Historical mitigants to counterparty risk - successes and failures
- Collateral and CSAs
- Central counterparties
- Optimisation of CVA, DVA, funding and regulatory capital

Jon Gregory, *Partner*
SOLUM FINANCIAL PARTNERS
Dr Jon Gregory is a partner at Solum Financial and specialises in counterparty risk and CVA related consulting and advisory projects. He has worked on many aspects of credit risk in his career, being previously with Barclays Capital, BNP Paribas and Citigroup. He is author of the book "Counterparty Credit Risk: The new challenge for global financial markets". Jon holds a PhD from Cambridge University.

12.35 Lunch
Plus Meet The Speaker Lunch Tables

Right column

14.00

DVA: Developing A Unified Framework To Take Into Account One's Own Credit Risk
- DVA and funding
- Relationship of DVA and funding to balance sheet
- Practical implications

Christoph Burgard, *Global Head Of Equity Derivatives, Securitisation Derivatives & Credit-Counterparty Modelling*, **BARCLAYS CAPITAL**
Christoph Burgard is a Managing Director and Global Head of Equity Derivatives, Securitisation Derivatives and Credit-Counterparty Modelling at Barclays Capital. After obtaining a PhD in particle physics from Hamburg University he was a fellow at CERN and DESY before joining Barclays Capital in 1999.

14.40

Counterparty Risk On Interest Rate Derivatives In A Multiple Curve Setup
- Modeling issues
- Cash-flows and strategies
- Martingale pricing approach
- CVA
- Pre-default CVA BSDE modelling
- Extended CIR and Lévy Hull—White specifications

Stéphane Crépey, *Professor, Mathematics Department*, **UNIVERSITY OF EVRY**
Stéphane Crépey is Professor at the Mathematics Department of University of Evry, France. He is director of the MSc Financial Engineering program M2IF at Evry University. His current research interests are Financial Modeling, Counterparty and Credit Risk, Numerical Finance, as well as connected mathematical topics in the fields of Backward Stochastic Differential Equations and PDEs. Stéphane Crépey also had various consulting activities in the banking and financial engineering sector.

15.20

If A Dealer Defaulted, Would Anybody Notice?: Modeling CVA For Systemically Important Counterparties
- For systemically important counterparties, a jump in market risk factors will occur before the positions can be closed out
- The resulting jump in position and collateral value is a major factor affecting PFE and CVA
- Practical use of the model, including calibration and stress testing, is discussed

Alexander Sokol, *Founder*, **NUMERIX & COMPATIBL**
Alexander Sokol is founder of Numerix, a leading derivatives and risk analytics vendor, and CompatibL, a Numerix implementation and custom development partner. Alexander's research interests include CVA and wrong way risk modelling. He is the author of "A Practical Guide to Monte Carlo CVA", published in "Lessons from the Financial Crisis" edited by Arthur M. Berd (Risk Books, 2010). Alexander holds a PhD from the Landau Institute for Theoretical Physics.

16.00 Afternoon Tea

16.30

Overcoming The Challenges Of Modelling Wrong Way Risk In CVA

Dan Rosen, *Chief Executive Officer*, **R2 FINANCIAL TECHNOLOGIES** & *Adjunct Professor* **UNIVERSITY OF TORONTO**
Dr. Dan Rosen is the CEO of R2 FINANCIAL TECHNOLOGIES, as well as an adjunct professor in Mathematical Finance at the University of Toronto. Dr. Rosen acts as an advisor to institutions around the world and lectures extensively on valuation of structured finance and derivatives; counterparty credit risk; risk management; and economic and regulatory capital. He has authored numerous risk management and financial engineering publications, and serves on the editorial board of several industrial and academic journals. Prior to founding R2 in 2006, he was at Algorithmics, where had responsibility for variety of functions including research and financial engineering, strategy and business development, and product marketing. In 2010, Dr. Rosen was inducted a founding a fellow of the Fields Institute for Research in Mathematical Sciences.

17.10

From Funding To Gap Risk: A Consistent Methodology For Computing Credit CVA
- Introduction: collateralization and gap risk for credit portfolios
- Zero-threshold CVA: a jump diffusion problem
- Filtration enlargement: the conditional density approach
- Conditional volatility modelling for wrong-way credit exposures
- Applications

Youssef Elouerkhaoui, *Managing Director, Global Head Of Credit Derivatives Quantitative Research*, **CITI**
Youssef Elouerkhaoui is the Global Head of Credit Derivatives Quantitative Research at Citi. His group supports all aspects of product development and modelling across desks, this covers: credit trading, correlation trading, CDOs, credit exotics and emerging markets. Prior to this, he was a Director in the Fixed Income Derivatives Quantitative Research Group at UBS, where he was in charge of developing and implementing models for the Structured Credit Derivatives Desk. Before joining UBS, Youssef was a Quantitative Research Analyst at Credit Lyonnais supporting the Interest Rates Exotics business. He has also worked as a Senior Consultant in the Risk Analytics and Research Group at Ernst & Young. He is a graduate of Ecole Centrale Paris, and he holds a PhD in Mathematics from Paris-Dauphine University.

17.50

Panel Discussion
Practically Managing CVA, DVA & FVA All Together

Joe Holderness, *Managing Director, Global Head Of Investment Bank Credit Portfolio Group* **JP MORGAN CHASE**
Joseph Holderness is currently Managing Director, Global Head of Investment Bank Credit Portfolio Group for JP Morgan Chase. Prior to joining Chase, he was head of Financial Engineering for Baring Securities in London, and before that held positions in quantitative analysis and arbitrage strategy at County NatWest and BARRA.

Christoph Burgard, *Global Head Of Equity Derivatives, Securitisation Derivatives, Credit-Counterparty Derivatives Modelling & Exposure Analytics*, **BARCLAYS CAPITAL**
Bio available above

Youssef Elouerkhaoui, *Managing Director, Global Head Of Credit Derivatives Quantitative Research*, **CITI**
Bio available above

18.30

Champagne Roundtable Discussion Groups

Stream B:
Innovations In Volatility Modelling, Hedging & Trading

11.15

Variance Curves In Different Risk Regimes: Volatility Of Volatility In A Brave New World

- The global financial system faces significant challenges forward forcing us to theorize how volatility curves may react to entirely new regimes of risk
- Transformations in the volatility of volatility may provide clues as to those expectations, provide a new source of alpha, and/or help traders construct more effective hedges

Christopher Cole, *Managing Partner*
ARTEMIS CAPITAL MANAGEMENT
Christopher R. Cole, CFA founded Artemis Capital Management LLC after working in capital markets and investment banking at Merrill Lynch and Wilshire Associates. During his career in investment banking and pension consulting he structured over $10 billion in derivatives and transactions for many high profile issuers. Mr. Cole has since focused on systematic and quantitative trading of exchange-traded volatility futures and options. His decision to form a fund came after achieving significant proprietary returns during the 2008 financial crash trading volatility futures. His research and volatility commentary has been quoted by publications such as the International Financing Review, CFA Magazine, and Forbes. Mr. Cole holds the Chartered Financial Analyst designation, is an associate member of the NFA, and graduated Magna Cum Laude from the University of Southern California.

11.55

Volatility Interpolation, Extrapolation & Dynamics

Jesper Andreasen, *Global Head Of Quantitative Research,* **DANSKE BANK**
Jesper Andreasen heads the Quantitative Research Department at Danske Bank in Copenhagen. Prior to this, Jesper has held positions in the quantitative research departments of Bank of America, Nordea, and General Re Financial Products. Jesper's research interest include: term structure modeling, volatility smiles, and numerical methods. In 2001 Jesper received Risk Magazine's Quant of the Year award.

12.35   Lunch

Plus Meet The Speaker Lunch Tables

14.00

Advances In Volatility Derivatives

- Constructing a volatility surface from market data
- Favoring historical volvol over implied volvol
- Extracting variance from Business Time Delta hedge
- Use of vanillas: lower bound, optimal hedge
- Better hedge with vanillas than with variance swaps
- Examples with variance calls, vol swaps, VIX options

Bruno Dupire, *Head Of Quantitative Research*
BLOOMBERG
Bruno Dupire is head of Quantitative Research at Bloomberg L.P., which he joined in 2004. Prior to this assignment in NY, he has headed the Derivatives Research teams at Société Générale, Paribas Capital Markets and Nikko Financial Products where he was a Managing Director. He is best known for having pioneered the widely used Local Volatility model (simplest extension of the Black-Scholes-Merton model to fit all option prices) in 1993 and subsequent stochastic volatility extensions. He is a Fellow and Adjunct Professor at NYU and he is in the Risk magazine "Hall of Fame" of the 50 most influential people in the history of Derivatives and Risk Management. He is the recipient of the 2006 "Cutting edge research" award of Wilmott magazine and was voted in 2006 the most contributing practitioner of the 5 previous years in the ICBI Global Derivatives industry survey. He is the recipient of the Risk Magazine "Lifetime Achievement" award for 2008.

15.20

Stochastic Volatility: Estimation Theory & Techniques

- Nonlinear filtering
- Wiener chaos expansion

Alireza Javaheri, *Head Of Equities Quantitative Research Americas,* **J.P. MORGAN**
Alireza Javaheri is the Head of Equities Quantitative Research Americas at J.P. Morgan and Adjunct Professor of Mathematical Finance at the Courant Institute. He has been working since 1994 in the field of derivatives quantitative research in various investment banks including Goldman Sachs and Citigroup. He holds an M.Sc. in Electrical Engineering from Massachusetts Institute of Technology and a Ph.D. in Finance from Ecole des Mines de Paris and is also a CFA charter holder. He has authored several quantitative finance papers on the subject of volatility, including articles with Peter Carr, Paul Wilmott and Espen Haug. His book "Inside Volatility Arbitrage" was elected the quantitative finance book of the year by Wilmott magazine.

16.00   Afternoon Tea

16.30

The Smile Calibration Problem Solved

- The particle method
- How to make it efficient in practice
- Extension to hybrid models
- Local correlation models
- Numerical tests

Julien Guyon, *Senior Quantitative Analyst*
SOCIÉTÉ GÉNÉRALE
Dr. Julien Guyon is a senior quant in the Global Markets Quantitative Research team at Société Générale. He is also a Visiting Professor at Paris VII University and at Ecole des Ponts (Paris). He received his Ph.D. in Probability Theory and Statistics from Ecole des ponts. He graduated from Ecole polytechnique (Paris), Paris VI University, and Ecole des ponts.

17.10

Exploring A New Approach For Efficient Implementation Of Stochastic Volatility

Speaker tbc

17.50

Quantum Local Volatility

Adil Reghai, *Head Of Equity, Commodity & Arbitrage Research*
NATIXIS
Adil Reghai is an alumni of Ecole Polytechnique of Paris and Ecole des Mines of Paris. Adil has worked as a senior quant and head of research in several houses such as BNP Paribas, Merrill Lynch, Dresdner Kleinwort Benson and Calyon. Now Adil is in charge of the Equity and Commodity and Arbitrage Research with Natixis based in Paris.

18.30

Champagne Roundtable Discussion Groups

Stream C:
New Advances In Risk & Portfolio Management Techniques

11.15

Financial Modelling In Times Of Crises: An Introduction Into Non-Equilibrium Finance

- Is the current financial crisis also a crisis of mathematical finance? Why did our (sophisticated) mathematical apparatus not give decisive warning signs of the crisis? Do we need to rethink our most popular paradigms on financial modelling?
- By drawing analogies to statistical physics we examine potential new modelling avenues that may lead to a more realistic description of financial markets
- We introduce the notion of "non-equilibrium finance" and give specific examples by discussing stochastic equity-bond correlations as well as liquidity effects in the European Sovereign Debt market

Alex Langnau, *Global Head Of Quantitative Analytics,*
ALLIANZ INVESTMENT MANAGEMENT
Alex Langnau is Global Head of Quantitative Analytics at Allianz Investment Management. He is also Visiting Scientist at the Ludwig-Maximilian University Munich. Prior to this he held various roles across the industry including Global Head of Quants across asset classes at Dresdner Bank, Global Head of Equity Derivatives Modelling at Merrill Lynch and Global Head of Exotic Equity Derivatives Modelling at Goldman Sachs. He started his career as a member of the Global Analytics team at Bakers Trust/Deutsche Bank. He holds a PhD in Theoretical Physics from the Stanford Linear Accelerator Center and completed his post-doc in the area of Theoretical Particle Physics at Cornell University. His current research interests include dynamic modelling of correlations and high frequency trading strategies.

11.55

Market Impact & Hidden Liquidity

Jean-Philippe Bouchaud, *Chairman & Chief Scientist*
CAPITAL FUND MANAGEMENT
Jean-Philippe Bouchaud became interested in theoretical finance in 1991. He founded the company Science & Finance in 1994 with J.-P. Aguilar, that merged with Capital Fund Management (CFM) in 2000. He now oversees, with Marc Potters, the research team of CFM (35 PhDs) and teaches statistical mechanics and finance at Ecole Polytechnique. He wrote the book Theory of Financial Risk and Derivative Pricing.

12.35   Lunch

Plus Meet The Speaker Lunch Tables

14.00

Panel Discussion
Pricing Beyond Complete Market Theorem: How Can We Incorporate Model & Market Risk Into Pricing?

John Crosby, *Visiting Professor, Centre For Economic & Financial Studies,* **GLASGOW UNIVERSITY** & *Managing Director*
GRIZZLY BEAR CAPITAL
John has developed derivatives pricing models across all asset classes. He is best known for publishing several papers in the area of commodity and hybrid derivatives. He is also a former FX options trader. John is a visiting Professor at Glasgow University and an invited lecturer on the M.Sc. course in Mathematical Finance at Oxford University as well as being a Managing Director at Grizzly Bear Capital.

Joerg Kienitz, *Head Of Quantitative Analysis,*
DEUTSCHE POSTBANK AG
Joerg Kienitz is the Head of Quantitative Analysis at Deutsche Postbank AG. He is primarily involved in the development and implementation of models for pricing structured products, derivatives and asset allocation. He authored a number of quantitative finance papers and his book on Monte Carlo frameworks has been published in 2009 with Wiley. He is member of the editorial board of International Review of Applied Financial Issues and Economics. Joerg holds a Ph.D. in stochastic analysis and probability theory.

Alex Langnau, *Global Head Of Quantitative Analytics*
ALLIANZ INVESTMENT MANAGEMENT
Bio available above

14.40

Enhanced Techniques To Backtest Model & Hedging Performance

Eva Strasser, *Executive Director, Equities Quantitative Research*
JP MORGAN

15.20

Index Option Risk Premiums: Measurement & Trading

- Term structure of asymmetry & fat-tails
- Irreducible hedge slippage
- Option seller-hedger's risk-return
- Option price implied risk-premiums
- Index option risk premium strategy
- Black swan strategy

Vivek Kapoor, *Multi-Asset & Hybrids Trader,* **CITI**
Vivek is responsible for creating systematic investment & hedging strategies spanning multiple asset classes. These strategies include trading directional exposures within a dynamic portfolio allocation approach, and equity & credit volatility & correlation risk-premiums. Vivek has worked in capital markets trading & risk management roles since 2000. He received his PhD from MIT for research on dispersion & uncertainty of transport phenomena in random porous media.

16.00   Afternoon Tea

16.30

Two Of A Kind: Stochastic Volatilities In Risk Management

- Implied versus Realised Volatility
- Predictive Power of Implied Market
- Modelling Realised Volatility
- Stochastic Volatility in Counterparty Exposure Calculation

Nastja Bethke, *Quantitative Analyst,* **BNP PARIBAS**
Nastja Bethke works in the Risk Methodology and Analytics team of BNP Paribas, currently investigating the modelling of stochastic ("realised") volatility for equities. Nastja holds a PhD in Fluid Dynamics and a MEng in Aeronautical Engineering.

Jean-Baptiste Brunac, *Quantitative Analyst,* **BNP PARIBAS**
Jean-Baptiste Brunac works in the Risk Methodology and Analytics team of BNP Paribas, recently taking on the responsibility for the equity derivatives market and counterparty risk model development. Before that he was involved in the modelling of IRC and CRM charges. Prior to joining BNP Paribas, he worked for Credit Suisse on the valuation of equity derivatives. Jean-Baptiste holds a PhD in Engineering Mechanics and a MSc in Physics.

17.10

Managing Model Risk For Valuation & Hedging

- Hedging, simple approaches and advanced techniques
- Identifying and Quantifying model risk
- Does model risk only depend on the model?
- Testing hedge efficiency (hedging costs and hedging error)
- Best fit is equal to best hedge?
- Some case studies on real market data

Joerg Kienitz, *Head Of Quantitative Analysis*
DEUTSCHE POSTBANK AG Bio available to the left

17.50

A Non-Parametric Bayesian Black Swan Model For Financial Markets With Knightian Uncertainty

- Market dynamics under the real-world measure
- Frequentist and Bayesian approaches
- Data-driven non-parametric Bayesian model and the Black Swan
- Implications for option pricing

Igor Halperin, *Executive Director, Quantitative Research,* **JP MORGAN**
Igor Halperin is an Executive Director in Quantitative Research at JP Morgan. His interests include derivatives pricing, incomplete market models, and statistical methods. He is also an adjunct professor at the department of Finance and Risk Engineering at NYU Poly. Igor has a Ph.D. in Theoretical High Energy Physics.

18.30

Champagne Roundtable Discussion Groups

Stream D:
Cutting-Edge FX Pricing, Hedging & Trading Strategies

11.15

Maximising Profitability In FX Options Trading & What The Profits Tell Us About The Market That Generated Them

- Trading strategies in the FX barrier options market
- Trading strategies in the FX vanilla options market
- Relating profits to market volatility and to economic indicators
- The significance of the carry trade

John Crosby, *Visiting Professor, Centre For Economic & Financial Studies,* **GLASGOW UNIVERSITY** & *Managing Director,* **GRIZZLY BEAR CAPITAL**
Bio available to the left

11.55

Valuing With Correlation Smile

- Recently a number of techniques have become available for valuing multi asset options in the presence of correlation smile
- The talk will cover those techniques with applications including quantos, rainbows and baskets

Peter Austing, *Quantitative Analytics*
BARCLAYS CAPITAL
Peter moved from mathematical physics to finance in 2004. He has been in his current role in the quantitative analytics team at Barclays Capital for four years, and is particularly interested in correlation and volatility modelling for foreign exchange derivatives.

12.35   Lunch -

Plus Meet The Speaker Lunch Tables

14.00

Pricing Forex, Cross Currency & Basket Options Under Stochastic Volatility Environment

Akihiko Takahashi
Professor, Graduate School Of Economics
UNIVERSITY OF TOKYO
Graduated from the Faculty of Economics, University of Tokyo. Received his Ph.D.from the Haas School of Business, University of California at Berkeley. After working for the Industrial Bank of Japan and Long Term Capital Management, he started as Associate Professor at the Graduate School of Mathematical Sciences, University of Tokyo and later joined the Graduate School of Economics in 2003. Has been Professor since 2007.

14.40

FX Volatility Modelling With Sovereign & Devaluation Risk

- FX devaluation and the link to sovereign credit risk
- Quanto CDS, survival probabilities and implied devaluation
- Pegged currencies and currency union

David Shelton, *Managing Director, Head Of The Global FX Quantitative Group,* **BANK OF AMERICA MERRILL LYNCH**
Within Quantitative Research David's main interests are pricing and hedging of short and long dated FX derivatives, hybrids, counterparty risk and dynamic models of credit risk. Since 1998 David has worked as a quantitative analyst on FX, hybrid FX interest rate and Credit products. Before that David was a postdoctoral theoretical physicist in Canada and Oxford for 2 years, after receiving a DPhil in Theoretical Physics from the University of Oxford.

15.20

Modelling Of FX Spread Options & Related Two Factor Problems

William McGhee, *Head Of Hybrid Quantitative Research, RBS*
William McGhee is a Managing Director and Head of Hybrid Quantitative Research at the Royal Bank of Scotland Group in London. William started his career at JP Morgan as a member of the Derivatives Research Group focusing on Foreign Exchange. He went on to run the FX Product Development team at Deutsche Bank and the FX Quantitative Strategy group at Citi.

16.00   Afternoon Tea

16.30

Using Lattice Methods For Fast Pricing Of FX Target Redemption Notes

Iain Clark
Head Of FX Quantitative Analysis
UNICREDIT
Prior to his current role, Iain Clark was Head of FX and Commodities Quantitative Analysis at Standard Bank, London. He holds a Ph.D in applied mathematics and has been a front office quant for 12 years, having previously worked at JP Morgan, BNP Paribas, Lehman Brothers and Dresdner Kleinwort. He is the author of Foreign Exchange Option Pricing: A Practitioner's Guide, Wiley Finance, 2010.

17.10

A Fast Analytic Model For Valuing Exotic FX Options Under The Smile

• Model values are accurate and robust to diverse market conditions
• Model values are consistent with the types of traded hedges observed in the market
• Model values are computationally efficient as they are independent of calibration, estimation, optimization, and simulation

Kurt Smith
Programme Director For Derivatives
CURTIN UNIVERSITY
Dr. Kurt Smith is the Programme Director for Derivatives at Curtin University. Prior to this, he was a trader for over ten years, both as a sell-side price-maker and global bookrunner in exotic FX options with a commercial bank; and as a macro proprietary trader with a buy-side fund. Kurt has an M.Phil from the University of Cambridge and a Ph.D from the University of Western Australia. His primary research interest is in modelling exotic and vanilla options from a financial economic, rather than a financial engineering, perspective.

17.50

FX Option Pricing Using Stochastic-Local Volatility Model

• Comparison of different volatility models
• Implementation scheme for calibrating stochastic-local volatility model
• Numerical comparisons for pricing barrier options and reproducing implied volatility surfaces
Based on joint work by Yu Tian (Monash University), Zili Zhu (CSIRO), Julian Cook(GFI FENICS), Fima Klebaner (Monash University) and Kais Hamza (Monash University)

Zili Zhu
Leader For Finance & Risk Stream
CSIRO
Dr Zhu leads the CSIRO (Commonwealth Scientific and Industrial Research Organization of Australia) research team in developing and supporting commercial exotic options pricing system Reditus. He also leads the R&D team in developing Real-option methodologies for optimally selecting power generation technologies under the uncertainty of Carbon price risk. Another CSIRO initiative led by Dr Zhu is the development of a RO framework for determining the optimal mix of growing crops and trees for efficient land-use. Dr Zhu received his first degree in Naval Architecture and then a Master's degree in Marine Propulsion before completing a PhD in Computational Fluid Dynamics. For the past 12 years, his main research focus has been on Financial Engineering.

18.30

Champagne Roundtable Discussion Groups

> **Stream E:**
> **New Approaches To Pricing &**
> **Hedging Credit Derivatives**

11.15

The Future Of Credit Derivatives Trading

Which Products Have Recovered From The Crisis, How Are New Approaches Such As Electronic Trading Impacting Credit Markets & How Might Things Be Traded In The Future?

Alberto Gallo
Senior European Credit Strategist
RBS
Prior to joining RBS, Mr Gallo was a Global Credit Strategist at Goldman Sachs and previously founded and subsequently ran the Global Credit Derivatives Strategy team at Bear Stearns. He began his career in investment banking at Merrill Lynch in London in 2003. He holds an Economics MSc from Bocconi University in Milan and attended the Goizueta Business School at Emory University in Atlanta. Mr Gallo is a CFA charter holder and an alumnus of the F. Morosini Naval Academy in Venice, where he headed the 'Andromeda' class.

11.55

Quanto CDS For Corporate & Sovereign Debt

• Definitions, quoting conventions, occurrences
• Quanto CDS risk breakdown
• Generic Quanto CDS modelling
• Normal hazard modelling and reverse defaults
• Scaling laws and white noise
• Gamma hazard modelling
• Large T approximations
• Negative correlation
• Numerical examples

Peter Jaeckel
Deputy Head Of Quantitative Research
VTB CAPITAL, *& Managing Director*
OTC ANALYTICS
Peter Jaeckel received his D. Phil. in Physics from Oxford University in 1995. After a short period in academic research, he migrated into quantitative analysis and financial modelling in 1997, when he joined Nikko Securities. After Nikko closed down its European operations in 1998, he changed to NatWest, which later became part of the Royal Bank of Scotland group. In 2000, he moved to Commerzbank Securities' product development group, and headed up the team jointly with a co-head from 2003. From September 2004 to May 2008, he was with ABN AMRO as Global Head of Credit, Hybrid, Inflation, and Commodity Derivative Analytics. In June 2008, he started OTC Analytics, and independent consultancy based in London. Since February 2010, he has been the Deputy Head of Quantitative Research at VTB Capital. Peter Jaeckel is the author of the book "Monte Carlo methods in finance" (2002) and a series of articles on financial mathematics and derivatives models some of which can be found at http://www.jaeckel.org.

12.35   Lunch

Plus Meet The Speaker Lunch Tables

14.00

Innovations In Credit Derivative Modelling

Andrei Serjantov, *Head, Flow Credit Research Group,*
BNP PARIBAS
Andrei Serjantov is currently heading up the flow credit research group at BNP Paribas. Prior to this, he was a quantitative analyst in the fixed income research team of BNP Paribas and Advanced Research Centre at State Street Global Advisors. Andrei holds a PhD and MA in Computer Science from the University of Cambridge.

14.40

Pricing & Hedging CLNs & CDS Products: Incorporating Macroeconomic Data In CDS Models To Ensure Plausible Forward Dynamics

Dherminder Kainth, *Head of Quantitative Research Centre,*
ROYAL BANK OF SCOTLAND
Dherminder Kainth is deputy head of the Quantitative Research Centre (QuaRC) at the Royal Bank of Scotland. He joined QuaRC in February 2001 (at the time headed by Riccardo Rebonato). Dherminder has worked across all asset areas and has published a number of papers (primarily work related to Credit Derivatives and modelling rates using the BGM).

> **Stream E:**
> **Latest Advances In Equity Derivatives**

15.20

Improving Equity Modelling: A Perspective Broader Than Just A "Good" Model

• Improving existing models instead of developing new models
• Model engineering process: quality of data, sensitivity reporting
• Trend for price modelling: addressing forward skew sensitive products
• Risk management perspective

Alberto Elices, *Head Of Equity Model Validation,*
SANTANDER
A. Elices earned a PhD in Power Systems Engineering at Pontificia Comillas University (Madrid, Spain) and a Masters in Financial Mathematics at the University of Chicago. He joined Santander after spending two years in a hedge fund in New York. He is currently head of Equity Model Validation of Risk Methodology at Santander in Madrid.

16.00   Afternoon Tea

16.30

Stochastic Dividends: Self-Consistent Models & Their Impact On Derivative Pricing

• Overview of dividend modelling
• Time-consistent "cash and proportional" dividends
• Implementation
• Impact on pricing derivatives

Hans Buehler, *Head of EMEA Equities Quantitative Research*
JP MORGAN
Hans Buehler is Head of EMEA Equities QR at JP Morgan in London, where he moved to after running Asia Equities QR in Hong Kong for two years since 2008. Before that, Hans was Head of Global Equity Derivatives QR at Deutsche Bank where he started his career in 2001. He holds a PhD in Financial Mathematics from TU Berlin and was co-author of "Equity Hybrid Derivatives" in 2006.

17.10

New Strategies & Techniques In Equity Derivatives Trading

Arie Boleslawski
MD & Head Of Structured Equity Trading, Europe,
SOCIÉTÉ GÉNÉRALE
Arie is a Managing Director at Societe Generale Corporate and Investment Banking and runs the Structured Equity Trading in Europe. Graduated from Ecole Polytechnique, he has 12 years experience in the derivatives industry. Previously, he was Head of Exotic Credit at Deutsche Bank, London and was before Global Head of Structured Credit Trading at SGCIB, New York having started his career on the Equity Index Arbitrage desk. In his current position, Arie is responsible of Cross Asset Solutions Trading platform on Equity derivatives, Hybrids, Mutual Funds and Alternative Investment.

17.50

Panel Discussion

Trading Exotic Equity Derivatives: The Latest Challenges & Opportunities Arising From The Recent Market Turmoil

Mike de Vegvar
Managing Director, Equity Derivatives Trading
UBS
Mike de Vegvar is Managing Director and Head of Complex Equity Exotics and Hybrid Trading at UBS in London, where he has been trading exotic equity derivatives since 1997. Mike began trading interest rate derivatives at Bankers Trust and First Chicago. He holds BS and MS degrees in Electrical Engineering from MIT and an MBA from the Wharton School of Business.

Peter van Kleef
Partner
LAKEVIEW CAPITAL MARKET SERVICES
Prior to his role at Lakeview, Peter managed significant hedge fund type investment portfolios and quantitative trading departments for among others Cooper Neff, Salomon Brothers, HypoVereinsbank and Credit Lyonnais. He has over 15 years of experience in the development and running of sophisticated automated trading operations. He holds a MBA degree from the Owen Graduate School at Vanderbilt University, Nashville, USA

Alireza Javaheri
Head Of Equities Quantitative Research Americas
J.P. MORGAN
Bio available on pg. 6

18.30

Champagne Roundtable Discussion Groups

> **Main Conference: Day 2**
> **Wednesday 18 April 2012**

08.30   Registration & Coffee

> **Stream A:**
> **Cutting-Edge Innovations In Interest Rate**
> **Modelling & Curve Construction**

09.00

Revisiting The First Principles Of Interest Rate Modelling

What Assumptions Underlie Yield Curves, Why Do We Have Multiple Curves & How Can We Reconcile Them?

Massimo Morini, *Head Of Credit Models & Coordinator Of Model Research,* **BANCA IMI**
Massimo holds a PhD in Mathematics and a MSc in Economics. He is Head of Credit Models and Coordinator of Model Research at IMI Bank. Massimo is Professor of Fixed Income at Bocconi University and was Research Fellow at Cass Business School of London City University. He regularly delivers advanced training on model risk management, credit modelling, interest rate market models and correlation modelling. His papers have appeared in journals including Risk Magazine, Mathematical Finance and the Journal of Derivatives.

09.40

Using Macro-Finance Models To Build A Simulation Framework For The Interest Rate Curve

• Introducing the concept of risk premium in interest rate curves
• How to use the change of measure to alter the interest rates' diffusion assumptions?
• What are the macro-economic equations driving the interest rate curve?
• Simulating the path of the interest rate term structure depending on the path of inflation and real activity

Sandrine Ungari, *Fixed Income Strategist,*
Cross-Asset Quantitative Research Group
SOCIÉTÉ GÉNÉRALE CORPORATE &
INVESTMENT BANKING
Sandrine Ungari is currently a fixed income strategist in the Cross-asset Quantitative Research group at Société Générale Corporate & Investment Banking in Paris. She joined Société Générale in 2006 after having spent two years in HBOS Treasury as a fixed income quantitative analyst. Sandrine's research has covered topics ranging from exotic interest rate derivatives pricing to statistical relative value and fixed income strategies. She started her carrier as a quantitative analyst in Reech Sungard. She graduated from the ENSTA (Paris) and the Master in quantitative finance at Paris VI University.

10.20

Calibration Of Multi-Curve Models: Why We Need To Model A Stochastic Basis

• Overview of current market practices in interest rate derivatives pricing
• Deterministic vs stochastic basis models
• Simple examples supporting the modelling of a stochastic basis
• A simple multi-curve short rate model: calibration and pricing examples
• A multi-curve LMM with a stochastic basis: calibration and pricing examples

Fabio Mercurio
Head Of Quant Business Managers
BLOOMBERG
Fabio is the head of Quant Business Managers at Bloomberg LP, New York. Previously, he was head of Financial Engineering at Banca IMI, Milan. At Bloomberg Fabio is responsible for the development and implementation of derivative pricing models across all asset classes. He is also teaching at a Master level at NYU. Fabio has jointly authored the book 'Interest rate models: theory and practice' and published extensively in books and international journals, including 10 cutting-edge articles in Risk Magazine. Fabio holds a PhD in Mathematical Finance from the Erasmus University of Rotterdam.

11.00   Morning Coffee

11.30

Geometric Lévy Models With Applications To Interest Rate Dynamics

• Pricing kernel approach to Lévy models for asset pricing
• Investment-grade assets and positive excess rate of return
• On the risk premium associated with Lévy models
• Lévy models for foreign exchange
• Siegel's paradox and volatility bounds
• Lévy models for interest rates
Based on joint work with Dorje Brody (Brunel University) and Ewan Mackie (Imperial College Business School).

Lane Hughston, *Visiting Professor, Department Of Mathematics,* **UNIVERSITY COLLEGE LONDON**
Lane P. Hughston received his doctorate in mathematics from the University of Oxford, where he was a Rhodes Scholar. He has held professorial appointments at Imperial College and at King's College London, and before that was Director of Derivative Product Risk Management at Merrill Lynch, London, where he was responsible for managing the development of pricing and hedging models for interest rate and foreign exchange derivatives. His research interests include a wide range of topics in mathematical finance and its applications to financial economics, including: the pricing and risk management of derivative securities; models for interest rates and foreign exchange; commodity, credit, equity, energy, and inflation derivatives; stochastic volatility; macroeconomic models; and information-based asset pricing. Professor Hughston belongs to the London Mathematical Society, the Bachelier Finance Society, the American Finance Association, and the American Physical Society. He is a Fellow of the Institute of Mathematics and its Applications, and a lifetime member of the American Mathematical Society and the International Society for General Relativity and Gravitation. He has held visiting appointments at the University of Texas at Austin, at King's College London, and at the Perimeter Institute, Ontario, and is currently Visiting Professor in the Department of Mathematics at University College London. Professor Hughston is Editor-in-Chief of International Journal of Theoretical and Applied Finance, and acts as an associate editor for Mathematical Finance, Quantitative Finance, Applied Mathematical Finance, Proceedings of the Royal Society A, and the IMA Journal of Applied Mathematics.

12.10

CMS Convexity With Full Volatility Risk
- Limitations of current models for CMS. Implicit volatility risk aggregation
- New vanilla model with full projection of volatility risk into relevant buckets
- Incorporating stochastic Libor OIS basis

Vladimir Piterbarg, *Global Head Of Quantitative Analytics Group,* **BARCLAYS CAPITAL**
Vladimir Piterbarg is a Managing Director and the Head of Quantitative Analytics at Barclays Capital. Before joining Barclays Capital in March 2005, he was a co-head of quantitative research for Bank of America, where he had worked for 8 years. Vladimir Piterbarg's main areas of expertise are the modelling of exotic interest rate and hybrid derivatives.

12.50 — Lunch

Plus Meet The Speaker Lunch Tables

14.20

The Term Structure Of Interbank Risk
- Providing a model for the term structure of interbank risk
- Studying interbank risk since the onset of the financial crisis
- Decomposing the term structure of interbank risk into default and non-default components
- Providing a unified approach to basis risk management

Damir Filipovic, *Swissquote Chair In Quantitative Finance,* **EPFL**
Damir Filipovic holds the Swissquote Chair in Quantitative Finance at the Ecole Polytechnique Fédérale de Lausanne (EPFL). He is also Swiss Finance Institute Professor, and the head of the Swiss Finance Institute at EPFL. He holds a Ph.D. in mathematics from ETH Zurich and has been a faculty member of the University of Vienna, the University of Munich and Princeton University. He also worked for the Swiss Federal Office of Private Insurance as co-developer of the Swiss Solvency Test. He is editor of the European Actuarial Academy Series, and on the editorial board of six academic journals. His research focus is in quantitative finance and risk management. His papers have been published in a variety of academic journals including the Journal of Financial Economics, Mathematical Finance, Finance and Stochastics, and the Annals of Applied Probability. He is the author of a textbook titled Term-Structure Models.

15.00

Coping With Negative Rates
What Does It Mean For Markets, Can You Trade It & Examining What The Volatility Surface Looks Like

Hans-Peter Schöch, *Director, Structured Rates Trading,* **NOMURA**
Hans-Peter has over ten years of industry experience in trading fixed income derivatives. He is working as a senior trader on the structured rates trading desk at Nomura in London. He is responsible for risk managing the EUR exotic rates trading book. In prior roles he held responsibilities for USD rates exotics and hybrids trading books.

15.40 — Afternoon Tea

16.10

Application Of Forward Induction In Computing CVA/ DVA For Portfolio Of Exotic Derivatives
- Forward induction for computing derivatives future values
- Forward induction for computing CVA/DVA
- Maximum potential CVA

Marat Kramin, *Director, Fixed Income Analytics* **WELLS FARGO SECURITIES**
Marat V. Kramin is a Director with Wells Fargo Securities. Prior to this current role, Marat worked as a Vice President with Wachovia's Corporate and Investment Banking Quantitative Analysis Group within the Fixed Income Department and in the Market Risk Management division in each of model validation and market risk responsibilities. Before joining Wachovia (March 2005), Marat was a Senior Financial Engineer in the Portfolio Analytics Group at Fannie Mae (2001-2005). Marat holds both PhD and MS in Applied Mathematics from Kazan State University, Russia. In addition Marat also holds an MS in Finance from The George Washington University. Marat has published various articles in peer reviewed journals. Marat's research has been in the area of pricing and hedging various exotic interest rate, FX and hybrid derivatives.

16.50

Practical Techniques Of Modelling Replication Sensitive Products In Volatile Markets

Dong Qu, *Global Head Of Quants,* **UNICREDIT**
Dong Qu is the global head of quants at UniCredit. He previously worked at banks including HSBC, Nikko and Santander. His main work has been on the quantitative pricing and hedging models for structured derivative business across mayor asset classes, including equity, fixed income,credit, FX and property. He is also experienced in many practical aspects of the derivative business, in particular sound and efficient management of derivative products within trading and risk infrastructures. He has a PhD in Statistical Optics from Imperial College London, and BSc in Physics from East China Institute of Technology

17.30

Champagne Roundtable Discussion Groups & The Global Derivatives Cocktail Reception

09.00

"The Risk On – Risk Off Phenomenon": Measuring & Tracking Increasing Correlation Between Asset Classes & Understanding The Impact For Pricing, Hedging, Investment Strategies & Financial Stability

Stacy Williams, *Head Of FX Quantitative Strategy* **HSBC**
Stacy Williams is Head of FX Quantitative Strategy at HSBC. He is responsible for quantitative research, advising on the development of currency management programs, and the construction of bespoke hedging strategies. He has a particular focus on model trading, alpha generation and algorithmic execution and works with hedge funds, institutional investors and corporate clients on a range of foreign exchange and multi-asset problems. Stacy has published various academic papers and articles on quantitative modelling and currently supervises doctoral research in collaboration with the University of Oxford Centre for Industrial and Applied Mathematics (OCIAM), where he looks at more academic areas of interest in the field of financial mathematics, specialising in market microstructure.

09.40

Correlation & Decorrelation In Multi-Asset Models
- Instantaneous correlation vs. terminal correlation
- Terminal correlation for a local volatility model
- Extending the heston model for multi-asset simulation
- Monte Carlo discretization in a Heston multi-asset setting
- Terminal correlation for the Heston Model
- Cross-asset variance terms, a means to improvement?

Jürgen Hakala, *Managing Director* **EFG FINANCIAL PRODUCTS**
Jürgen works for EFG Financial Products, the derivatives house of EFG, where he is involved in modelling and financial engineering for all asset classes. His interests are numerical methods in mathematical finance, in particular multi-asset and hybrid modeling. His initial interest was foreign exchange, where he is co-editor of a textbook about FX derivatives.

10.20

Advances In Equity Correlation Modeling: Developing An Improved Model For Correlation Derivatives
- New fundamental results for equity volatility & correlation
- Correlation trading & pricing
- Improved modeling of correlation derivatives

Sebastien Bossu
Sebastien Bossu is currently looking for new opportunities while doing original research. A new edition of his book 'Introduction to Equity Derivatives' is soon to be published by John Wiley & Sons. He has seven years of experience in the financial industry, lastly as Director of Equity Derivatives Structuring for an investment bank in London. A graduate from The University of Chicago, HEC Paris, Columbia University and Université Pierre et Marie Curie, he also worked for J.P. Morgan as an exotic derivatives structurer.

11.00 — Morning Coffee

11.30

Useful & Useless Asymptotic Formulas For Implied Volatility

Alex Lipton, *Co-Head Of Global Quantitative Group,* **BANK OF AMERICA MERRILL LYNCH** *& Visiting Professor,* **IMPERIAL COLLEGE**
Prior to his current roles, Alex was Global Head of Credit Analytics at Merrill Lynch. Earlier, he was a Managing Director and Head of Capital Structure Quantitative Research at Citadel Investment Group in Chicago; he had also worked at Credit Suisse, Deutsche Bank and Bankers Trust. Previously, Alex was a Full Professor of Mathematics at the University of Illinois at Chicago and a Consultant at Los Alamos National Laboratory. His current interests include industrial-strength pricing of derivatives, as well as technical trading strategies. In 2000 Alex was awarded the first Quant of the Year Award by Risk Magazine. Alex is the author of two books ("Magnetohydrodynamics and Spectral Theory" and "Mathematical Methods for Foreign Exchange") and the (co-)editor of four more (including "The Oxford Handbook of Credit Derivatives", OUP, 2011).

12.10

A Regime Switching Model For VIX & Volatility Derivatives
- Co-calibration of SPX options with VIX futures and options in a rich regime switching model
- VIX futures vs. volatility swaps and VIX options vs. options on variance
- Correlated jumps on the SPX and its volatility
- Hedging VIX derivatives with SPX futures and options

Philippe Henrotte, *Co-Founder & Partner,* **ITO33**
Philippe Henrotte is one of the founding partners of ITO33, a company which designs sophisticated derivatives pricing software for financial institutions. He has acted as founder and director of both Russian Opportunities Fund Limited, a hedge fund targeting the Russian capital markets, and ZAO Eurotek, an independent Russian gas producer. Philippe is an Affiliate Professor at the Finance and Economics Department of HEC Paris. He holds a degree in Engineering from Ecole Polytechnique, Paris, and a PhD in Finance from the Graduate School of Business, Stanford University. His research interests focus on risk management and the hedging and pricing of derivatives in incomplete markets.

12.50 — Lunch

Plus Meet The Speaker Lunch Tables

14.20

Localising To Extremes
- Path dependent volatility
- PAY martingales
- Information content of one touches
- Pricing and hedging barrier options

Peter Carr, *Managing Director,* **MORGAN STANLEY**
Dr. Peter Carr is a Managing Director at Morgan Stanley with over 15 years of experience in the derivatives industry. He was also a finance professor for 8 years at Cornell University, after obtaining his PhD from UCLA in 1989. He is presently the Executive Director of the Math Finance program at NYU's Courant Institute, the Treasurer of the Bachelier Finance Society, and a trustee for the Museum of Mathematics in New York. He has over 75 publications in academic and industry-oriented journals and serves as an associate editor for 8 journals related to mathematical finance. He was selected as Quant of the Year by Risk Magazine in 2003 and shared in the ISA Medal for Science in 2008. He is the current holder of IAFE/Sungard Financial Engineer of the Year and was named in Institutional Investor's Tech 50 for 2011.

15.00

Volatility Expansions Based On Laplace's Method
- Tail Wing Formula and some refinements
- Laplace's method in finite dimensions - applications to Heston implied and local volatility
- Laplace's method on path space - applications to the Stein–Stein model

Peter Friz, *Professor In Mathematics,* **TU-BERLIN**
P.K. Friz holds a Master degree from Trinity College, Cambridge (UK), and obtained his PhD under the supervision of S. R. S. Varadhan at the Courant Institute, New York. He is currently Professor at the Technical University Berlin and the Weierstrass Institute for Applied Analysis and Stochastics. Previous professional affiliations include Merrill Lynch, New York, and Cambridge University, UK. He wrote numerous papers in the broad area of quantitative finance, partial differential equations and stochastic analysis. His book "Multidimensional Stochastic Processes as Rough Paths", jointly with N. Victoir, was published by CUP in 2010.

15.40 — Afternoon Tea

16.10

The Riemannian Distance Function & The Small Maturity Limit In Local-Vol Heston Models
- Despite its popularity, the Heston local vol model has, until now, been considered analytically tractable only in the quadratic case, due to the work of Lipton and Andersen. On the other hand the lambda-Sabr model is analytically tractable for all values of beta. The main difference between the two is the Riemannian distance function in the Sabr model is known in closed form.
- Two new approaches to determining this Riemannian distance function quickly and efficiently.
- Determination of the implied volatility and call prices in the small time to expiration limit, using results of Gatheral-Hsu-Laurence-Ouyang-Wang of Paulot, and of Laurence.

Peter Laurence, *Professor Of Mathematics* **UNIVERSITA DI ROMA 1**
Peter Laurence is a Professor of Mathematics at the University of Rome, "La Sapienza" and a visiting scholar at the Courant Institute. He completed his PhD in 1981 in applied mathematics at the University of Wisconsin, Madison after undergraduate courses at the Wharton School of Finance and Commerce. He has published widely in leading international journals in a wide spectrum of areas in applied mathematics and of partial differential equations. In 1997 he became interested in mathematical finance and in 1999 co-authored with Marco Avellaneda a book on option pricing. He has taught mathematical finance at the graduate level at NYU's Courant Institute, Columbia University and at Universities of Rome I and II. In 2001-2002 he was a Director in Standard and Poor's Risk Solutions group where he specialised in Portfolio Credit Risk. He has published articles in Risk Magazine, Mathematical Finance, Applied Mathematical Finance, Quantitative Finance and Insurance Mathematics and Economics. His main research focus has been on pricing and hedging basket options and asymptotic methods for stochastic volatility models.

16.50

Symmetry Methods For The Quadratic Gaussian Libor Model
- Introduction to the Quadratic Gaussian symmetry groups
- The Quadratic Gaussian Libor model
- Results from the modelling of volatility smile dynamics
- Extensions to cross-asset modelling

Paul McCloud, *Head Of Vanilla Interest Rate Quants,* **NOMURA**
Paul McCloud is Head of Vanilla Interest Rate Quants at Nomura in London and has 11 years' experience working as a quant in vanilla and exotic rates and commodities at firms including Lehman Brothers, Merrill Lynch, Rabobank & BP. He has a PhD in Mathematics from Kings' College London, studying advanced symmetry techniques for models of quantum gravity. His current research interests include the application of symmetry to the pricing of interest rate and hybrid derivatives. Paul was also the lead quant in the team at Nomura that identified the CMS triangle arbitrage in 2009.

17.30

Champagne Roundtable Discussion Groups & The Global Derivatives Cocktail Reception

09.00

Future Outlook For Commodities: Evaluating The Impact Of Speculators, Politicians & Regulators On Commodities Markets & Assessing Where The Future Opportunities Are To Be Found
Speaker tbc

09.40

Developing Filtered, Multi-Factor Models To Take Into Account Macro-Economic & Latent Factors For Accurately Pricing Futures & Forwards To Enable Long-Term Forecasts

Michael Dempster, *Founder Of The Centre For Financial Research,* **CAMBRIDGE JUDGE BUSINESS SCHOOL** *& Professor Of Management Studies Emeritus*
Michael A H Dempster is Managing Director of Cambridge Systems Associates Limited and Professor Emeritus, Centre for Financial Research, Department of Pure Mathematics and Statistics, University of Cambridge. Michael has taught and researched in leading universities on both sides of the Atlantic, including Oxford, Cambridge, Stanford, California-Berkeley, Princeton, Toronto and Rome, and is currently founding Editor-in-Chief of Quantitative Finance and an Associate Editor of Stochastics, Computational Finance and the Journal of Risk Management in Financial Institutions. Michael is Editor-in-Chief of the Oxford Handbooks in Finance and Co-Editor of the Chapman & Hall /CRC Mathematical Finance Series. He has been consultant to a number of global financial institutions, corporates and governments and is regularly involved in executive education in financial engineering and risk management around the world. Author of over 100 published research articles in leading international journals; his books include Stochastic Programming, Derivative Securities (with S R Pliska), Risk Management: Value at Risk and Beyond and Quantitative Fund Management (with G Mitra and G Pflug). His work has won several awards and he is an Honorary Fellow of the UK Institute of Actuaries.

10.20

Pricing Agricultural Derivatives In A World Of Land & Water Scarcity & Growing Population

Helyette Geman, *Director Commodity Finance Centre,* **UNIVERSITY OF LONDON & ESCP EUROPE**
Helyette Geman is the Director of the Commodity Finance Centre and ESCP Europe. She is a graduate of Ecole Normale Superieure in Mathematics, holds a Masters degree in Theoretical Physics and PhDs in Probability and Finance. Professor Geman has been a scientific advisor to major financial institutions, energy and mining companies for the last 16 years, covering the spectrum of interest rates, catastrophic risk, crude oil and energy, as well as metals and agriculturals. She was previously the Head of Research at Caisse des Depots in Paris. Professor Geman was the first president of the Bachelier Finance Society and has published more than 106 papers in top international finance Journals including the Journal of Finance, Mathematical Finance, Journal of Financial Economics. She was named in 1993 Member of Honour of the French Society of Actuaries. Professor Geman's research includes interest rates and catastrophic insurance, asset price and commodity forward curve modeling. Prof Geman was named in 2004 in the Hall of Fame of Energy Risk and received in July 2008 the medal for Sciences of the Institute for Advanced Studies of the University of Bologna for the CGMY model, a pure jump Levy process widely used in finance since 2002. Her book Commodities and Commodity Derivatives: Energy, Metals and Agriculturals published by Wiley Finance in January 2005 is the reference book in the field. Prof Geman is a Member of the Board of the UBS-Bloomberg Commodity Index. She edited in 2008 the book Risk Management in Commodity Markets: from Shipping to Agriculturals and Energy and became in 2010 the first Wilmar-International Invited Professor of Commodities Business at Singapore Management University.

11.00 — Morning Coffee

11.30

Financialisation Of Commodities: Oil As An Asset Class

- Evolution of oil investment products
- Net hedging pressure and the roll yield
- WTI / Brent dichotomy
- Oil trading relative to other asset classes

Ilia Bouchouev, *Managing Director, Global Head Of Energy Derivatives,* **KOCH SUPPLY & TRADING**

For the last twelve years Ilia Bouchouev has been managing the global energy derivatives business for Koch Industries, the world second largest privately held company. Koch's energy derivatives group is one of the leading quantitative traders and liquidity providers for corporate end-users, and hedge funds. The group operates globally with trading desks in New York, Houston, Wichita (Kansas), Geneva, and Singapore. This team has pioneered a number of unique energy derivatives instruments and been recognized as a leading quantitative trader in commodities. Ilia has a PhD in Applied Mathematics, and has been a regular speaker at various industry conferences.

12.10

The Impact Of Commodity Prices On Electricity Markets

- Different generation costs and fuels mix in European countries
- Evidence from European spark spreads
- Results of a sensitivity analysis using a fundamental model

Elisa Scarpa, *Head Of Market Analysis & Forecasting,* **EDISON TRADING**

Elisa Scarpa is Head of Market Analysis and Forecasting at Edison Trading S.P.A. Her activities concern the analysis and monitoring of key drivers and the development of econometric models and tools for trading strategies in power, oil and CO2 markets. Before joining Edison Trading, Elisa has been involved for four years in several projects at Fondazione ENI Enrico Mattei in the International Energy Market Unit. She holds a degree in Economics from Bocconi University (Milan) and a master's degree in Energy Finance and Trading from Politecnico of Milan. She is the author of papers on commodity finance and price forecasting.

12.50   Lunch -

Plus Meet The Speaker Lunch Tables

14.20

Extrapolating In Energy Markets

- The need to extrapolate in energy finance
- Extrapolating forward/futures prices
- Extrapolating the Term Structure of Volatilities (TSOV)
- Extrapolating correlations

Ehud I. Ronn
Professor Of Finance
UNIVERSITY OF TEXAS

Ehud I. Ronn is a professor of Finance at the University of Texas at Austin. Between Jan. 2010 and Feb. 2011 he served as practice area manager for Commodity Market Modeling at Morgan Stanley & Co. From 1997 to 2009, Dr. Ronn was director of the Center for Energy Finance Education and Research at the McCombs School of Business. Dr. Ronn obtained his B.Sc. and M.Sc. in Economics at the Technion, the Israel Institute of Technology, and his Ph.D. in Finance from Stanford University. Prior to joining the University of Texas at Austin in July 1988, Dr. Ronn was a faculty member of the business schools at the University of California, Berkeley, and the University of Chicago. From 1991 to '93 he served as Vice President, Trading Research Group at Merrill Lynch & Co., where he was responsible for the valuation and hedging of interest rate-sensitive securities. In Nov. 2004, Dr. Ronn was one of fifty individuals selected by Energy Risk magazine to the "Energy Risk Hall of Fame."

15.00

Commodity Spread Option In Illiquid Markets: Pricing & Risk Management

- Challenges: difficult to assume parametric distributions for the underlying, hard to calibrate correlation, highly desirable to bridge forward prices/ constraints and historical distributions
- Apply a non-parametric approach to resolve the above challenging issues
- Solve for Risk-Neutralized Historical Distribution (RNHD) by "distance" minimization from historical prior distribution
- Use RNHD to price commodity spread options, calculate Greeks and VaR

Joseph Y. Chen
Manager, Quantitative Risk Analysis
TRANSALTA CORPORATION

Joseph has over ten years' experience in illiquid option pricing, quantitative modeling, asset valuation, portfolio optimization, operational risk analytics, and risk management in the commodity industry with products covering gas, oil, power, weather, FX, interest rate, and credit. He has held senior positions in TransAlta Corporation, Duke Energy and Williams Energy. He has a Ph.D. in Management (financial economics) from UCLA, The Anderson School of Management and an M.A. in Physics from the City University of New York. He learned the first quantitative finance course from Harry Markowitz.

15.40   Afternoon Tea

16.10

Developing & Risk Managing Derivatives For The Emissions Market In The Face Of Political Pressure

Speaker tbc

16.50

Calculating Transaction Costs For Commodities Spread Options

- Time and price based hedging strategies
- Transaction costs and hedging error for vanilla ATM
- Transaction costs and hedging error for ATM call spread option

Roza Galeeva
Executive Director
MORGAN STANLEY

Roza Galeeva is an Executive Director at Morgan Stanley. She started her career at MS in 2005 in the Financial Control Group, working on models review and model control process. In 2010 she joined the Commodities Market Modelling Group. Roza Galeeva holds PhD in Mathematical Physics from Moscow State University. She has numerous papers on dynamical systems and applications in financial engineering and broad teaching practice in different universities over the world. She has extensive experience in modelling energy derivatives and risk management.

17.30

Champagne Roundtable Discussion Groups & The Global Derivatives Cocktail Reception

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> **Stream D:**
> **The Latest Developments In Derivatives**
> **Regulation & Capital Requirements**

09.00

OTC Derivatives Market: Issues & Perspectives

Rama Cont, *Director, Centre For Financial Engineering,* **COLUMBIA UNIVERSITY**

Rama Cont is also the Senior Research Scientist in Mathematics at CNRS (Paris) and a founding partner of Finance Concepts, a risk advisory firm based in Paris and New York. His research has focused on computational methods in finance, jump processes and heavy-tailed models of financial risk, credit risk, systemic risk and counterparty networks. He has co-authored several books on quantitative finance including "Financial Modeling with Jump processes" (CRC Press, 2003) and "Frontiers in Quantitative Finance: volatility and credit risk modeling" (Wiley 2008). He is the Editor-in-Chief of the Encyclopedia of Quantitative Finance (Wiley, 2010).

09.40

Examining The Impact Of Proposed Regulatory Changes On Business Models, Market Structure & The Efficiency Of The Industry

Michael Jacobs, *Senior Financial Economist,* **OFFICE OF THE COMPTROLLER OF THE CURRENCY**

Michael Jacobs, Senior Financial Economist, Risk Analysis Division / Credit Risk Modeling Group, joined the OCC in June 2005. He is a researcher in financial economics, specialising recently in empirical studies of wholesale credit risk (loss given default, exposure at default, ratings migrations and PD modeling for large corporate loans and bonds; also risk aggregation, economic capital, correlation forecasting, performance of distressed debt and credit derivatives.), having published several articles in refereed journals (including the Journal of Risk Management in Financial Institutions, Journal of Fixed Income, Journal of Portfolio Management and the Journal of Credit Risk.) He has participated in examinations as a senior advisor in quantitative modeling issues for credit risk rating processes, allowance and economic capital modeling at several large and mid-sized banks. Recently, he has also been involved in projects related to the development of policy and guidance for the Basel capital framework (Pillar I, ICAAP and Basel 3), including the AIGV Research Task Force on vendor models, and serves as a quantitative advisor to the inter-agency Basel II Wholesale Qualification Team. Prior to joining the OCC, Mike was a Vice-President at JP Morgan Chase Risk Methodology for 5 years, leading the empirical research program in credit risk for the wholesale bank, publishing several articles in the RMA Journal; 3 years as a quantitative analyst at Sumitomo-Mitsui Banking Corporation, implementing economic capital and RAROC models; and 5 years as an Instructor and Assistant Professor at Baruch College, lecturing and performing research in financial economics, having several publications in the Journal of Futures Markets; 2 years as a quantitative equity researcher analyst at Value Line, specializing in the financial and insurance industry. Mike holds a Ph.D in Finance from the City University of New York; he is also a Chartered Financial Analyst.

10.20

CCP MASTERCLASS

Session 1: 40 minutes

Understanding The Latest Regulatory Requirements For Central Clearing:

Determining What Has To Be Cleared, Assessing The Impact On Capital Requirements & The Impact Of CSAs On Initial Margin

Speaker tbc

11.00   Morning Coffee

11.40

Session 2: 40 minutes

Central Counterparty Risk

- We quantify the risk a clearing member incurs due to his membership of a CCP
- We show that under reasonable assumptions the risk is not negligible and should be risk managed.
- We provide a simple model that is based only on minimal assumptions on CCP structure

Matthias Arnsdorf, *Executive Director,* **JPMORGAN**

Since 2010, Matthias has been leading the Risk Methodology Group in EMEA. His main interests include economic and regulatory capital calculations, credit modeling and cross-asset risk simulations. Prior to this Matthias has worked 7 years in Credit Derivatives Quantitative Research at JPMorgan and UBS. Matthias holds a PhD in quantum gravity from Imperial College.

12.10

Session 3: 40 minutes

Overcoming The CVA & DVA: CCPs & Margin Lending

- The push toward clearing of OTC derivatives
- Collateral transformation
- Models for margin lending portfolios

Claudio Albanese
Professor
KINGS COLLEGE LONDON

Claudio Albanese holds a PhD from ETH Zurich and pursued an academic career up to achieving the title of professor. He held regular faculty positions at the University of Toronto and Imperial College and currently lectures at King's College London. Claudio's primary occupation is to consult for financial firms about valuation methodologies, risk management and high performance computing.

12.50   Lunch -

Plus Meet The Speaker Lunch Tables

14.20

BASEL MASTERCLASS

Session 1: 40 minutes

Modelling The Comprehensive Risk Measure For Correlation Trading Portfolios

- Description of regulatory requirements
- Categorising the Risk that is taken on
- The advantages of CRM over a standardised approach
- Products eligible under the CRM
- Impact of hedging
- Examination of key challenges
- Considerations for CRM models in order to gain regulatory approval

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Gabriel Medina
Vice President, Regulatory & Risk Analytics
HSBC

Gabriel Medina, FRM is a Vice President in HSBC's Regulatory & Risk Analytics department in London. The team insures the adequacy of the risk models (Market, Counterparty, Wholesale) for risk management as well as regulatory purposes. Before moving to the UK, he had worked for more than 4 years in HSBC's Quantitative Risk and Valuation Group in New York, in charge of the validation of risk and pricing models. Gabriel holds an MSc in Financial Mathematics from Columbia University in New York. He graduated with a Diplome d' Ingenieur from Ecole des Mines - Nancy (France) and an MSc in Applied Mathematics from Paris VI University.

Session 2: 40 minutes

Exploring The Latest Approaches For Calculating CVA VaR Across Global Portfolios

Peter Dobranszky
Head Of Risk Methodology Validation
BNP PARIBAS

Peter manages a team being responsible for the validation of internal risk methodologies related to capital markets. Earlier, he was validating equity, commodity and energy pricing models. As a consultant, he helped banks to develop and implement financial models and pricing engines. As part of his academic research, he focused on credit derivatives, on capturing the asset price and volatility dynamics and on advanced numerical techniques.

15.40   Afternoon Tea

16.10

Session 3: 40 minutes

Examining New Techniques For Validating & Stress Testing IRC

Vivien Brunel
Head Of Economic & Regulatory Capital
SOCIÉTÉ GÉNÉRALE

Vivien Brunel holds a PhD in theoretical physics. He joined Société Générale in 2001 were he was working on the RAROC project. In 2006 he joined SGAM Alternative Investments as a credit structurer. He is now head of Economic and Regulatory Capital at Société Générale; his team is in charge of developing pillar 1 regulatory capital models (IRC and CRM, IAA approach to securitisation, operational risk), pillar 2 models (economic capital, stress testing) and risk appetite methodologies. Vivien is also assistant professor at Ecole des Ponts ParisTech, a top French Grande Ecole.

16.50

Examining The Potential Impact Of Regulatory Proposals To Introduce A Transaction Tax

Speaker tbc

17.30

Champagne Roundtable Discussion Groups & The Global Derivatives Cocktail Reception

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> **Stream E:**
> **New Practical Methods For Improving**
> **Computational Efficiency**

09.00

Adjoint Algorithmic Differentiation

A New Approach for Real Time Risk Management In Monte Carlo

Luca Capriotti
Director, Quantitative Strategies
CREDIT SUISSE

Luca works in Quantitative Strategies (QS) in the New York city office. He is currently focusing on modelling in the areas of Credit, Commodities, Risk Management of a Bank's own credit, Counterparty Credit Risk Management. He is also working on developing efficient and general multiasset Monte Carlo engines supporting fast calculation of Greeks. Previous to this role, he was part of the crossasset modelling R&D group of QS in the London office.

09.40

Combining Numerical & Technological Advances For Fast & Robust Model Calibration via Monte Carlo

- Fundamentals of Monte Carlo calibration
- Speeding up MC calibrations with adjoints and multi layer techniques
- Exploiting GPUs for rapid model calibrations

Jan H. Maruhn
Director, Quantitative Research
UNICREDIT

Jan H. Maruhn is working as a senior quantitative researcher for equities, commodities and funds in the Corporate and Investment Banking division of UniCredit. His scientific interests focus on optimization in finance as well as the pricing and hedging of derivatives. Jan holds a PhD, diploma and Master of Science in mathematics, with emphasis on mathematical finance and numerical analysis.

10.20

A New Monte Carlo Approach To Pricing In Local Volatility Models With Jumps

- Efficient Monte Carlo method
- Vanilla, barrier and accrual-type products
- Jumps (gap risk)
- Local volatility

Martijn Pistorius
Reader In Mathematics
IMPERIAL COLLEGE LONDON

Martijn Pistorius completed his Ph.D. in 2003 at the University of Utrecht. His research expertise lies in applied probability, stochastic processes, and applications of stochastic analysis in mathematical finance. He is Reader at the Department of Mathematics at Imperial College London, and is Programme Director of the MSc in Mathematics and Finance at Imperial. Several of the MSc and PhD students that he has supervised have gone on to forge successful careers in quantitative research in the financial industry.

11.00   Morning Coffee

11.30

Assessing The Latest Advances In High Performance Computing & Their Applications For Finance

- Solid State Disks
- Infiniband
- GPUs
- FPGAs
- Microwave

Peter van Kleef, *Partner*
LAKEVIEW CAPITAL MARKET SERVICES
Prior to his role at Lakeview, Peter managed significant hedge fund type investment portfolios and quantitative trading departments for among others Cooper Neff, Salomon Brothers, HypoVereinsbank and Credit Lyonnais. He has over 15 years of experience in the development and running of sophisticated automated trading operations. He holds a MBA degree from the Owen Graduate School at Vanderbilt University, Nashville, USA.

12.10

Optimal Transport: A Pleasant Ride In Finance

- Calibration of (hybrid) models on market smiles
- Arbitrage-free construction of (illiquid) smiles
- Computation of efficient model-independent bounds for exotic options
- Risk-neutral Weighted Monte-Carlo approach
- New optimal Skorokhod Embedding solutions

Pierre Henry-Labordère, *Senior Quantitative Analyst,*
SOCIÉTÉ GÉNÉRALE
Dr. Pierre Henry-Labordère is a senior quant in the Global Markets Quantitative Research team at Société Générale where he is involved in modeling for all asset classes. Pierre is the author of the book "Analysis, Geometry, and Modeling in Finance: Advanced Methods in Option Pricing" (2008). He holds a PhD in quantum gravity from Ecole Normale Supérieure (Paris).

12.50 Lunch

Plus Meet The Speaker Lunch Tables

14.20

New Techniques For Using GPUs For Derivatives Pricing & Modelling
Speaker tbc

15.00

Combining Historical Returns & Option Prices Through Density Estimation With Constraints

- Density estimation through fluid-like flows, with historical returns as active Lagrangian markers and their log-likelihood as driving force through gradient descent
- Option prices as constraints on the flows, through importance-sampling Monte Carlo
- A bridge between the physical and risk-neutral measures

Esteban Tabak, *Professor Of Mathematics*
COURANT INSTITUTE, NYU
Esteban G. Tabak earned an Engineering degree in hydraulics from the University of Buenos Aires and a PhD. in mathematics from MIT. He held a post-doctoral position in applied mathematics in Princeton, and has been for the last 18 years at NYU's Courant Institute, where he is a professor of mathematics and the chair of the mathematics department. His main areas of interest are data mining and climate science. He has consulted for several companies in the financial industry on applications of data mining as well as on factor-based risk models.

15.40 Afternoon Tea

16.10

On Adjoint Parameter Calibration

- Adjoint algorithmic (also: automatic) differentiation (AD)
- Cheap gradients and projected Hessians for (large-scale) nonlinear optimization#
- AD tool support for models written in C/C++

Uwe Naumann, *Professor, Head Of Group, LuFG Software & Tools For Computational Engineering,*
RWTH AACHEN UNIVERSITY
Uwe Naumann gained his M.Sc. (1996) and Ph.D. (1999) in Applied Mathematics from Technical University Dresden, Germany. Following which he held post-doctoral appointments at INRIA (France, 1999-2000), University of Hertfordshire (UK, 2000-2002) and Argonne National Laboratory (USA, 2002-2004). He was a Professor for Computer Science at RWTH Aachen University since 2004 and became a member of the Numerical Algorithms Group in 2009. He is the author of the book "The Art of Differentiating Computer Programs" published by SIAM in 2011.

16.50

Option Pricing With FFT, CFT, Saddle Point, Etc. - Can We Do It Better?

Andrey Itkin, *Adjunct Professor*
NYU POLY
Dr. Andrey Itkin is an adjunct professor at NYU Poly. He received his PhD in computational physics and degree of Dr. of Science in molecular physics. He used to publish a book and numerous papers in physics before he moved to finance. Prior to his current job, Andrey occupied senior quantitative and managerial positions at some financial companies.

17.30

Champagne Roundtable Discussion Groups & The Global Derivatives Cocktail Reception

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Main Conference: Day 3
Thursday 19 April 2012

08.20 Registration & Coffee

08.40 Chairman's Opening Remarks

08.45

Global Credit Market Outlook

Current Conditions & Outlook For Global Corporate & Sovereign Debt Credit Markets

- Major risks going forward in global credit markets with emphasis on the U.S. economy and the European sovereign risk problem
- What the yield spread and other market indicators are telling us about the future
- Current default rate conditions and outlook from a number of statistical forecasting models
- A novel approach to assessing and forecasting sovereign debt defaults
- Size and scope of the distressed debt markets

Edward I. Altman, *Max L. Heine Professor Of Finance,* **STERN SCHOOL OF BUSINESS, NEW YORK UNIVERSITY**
Edward I. Altman is the Max L. Heine Professor of Finance at the Stern School of Business, New York University. He is the Director of Research in Credit and Debt Markets at the NYU Salomon Center for the Study of Financial Institutions. Prior to serving in his present position, Professor Altman chaired the Stern School's MBA Program for 12 years. He has been a visiting Professor at the Hautes Etudes Commerciales and Universite de Paris-Dauphine in France, at the Pontificia Catolica Universidade in Rio de Janeiro, at the Australian Graduate School of Management and MacQuarie in Sydney, University of Western Australia in Perth, Luigi Bocconi University in Milan and CEMFI in Madrid. Dr. Altman has an international reputation as an expert on corporate bankruptcy, high yield bonds, distressed debt and credit risk analysis. He is currently an advisor to the Centrale dei Bilanci in Italy and to several foreign central banks. Professor Altman is also the Chairman of the Academic Advisory Council of the Turnaround Management Association. He received his MBA and Ph.D. in finance from the University of California, Los Angeles. He was inducted into the Fixed Income Analysts Society Hall of Fame in 2001, President of the Financial Management Association (2003) and a FMA Fellow in 2004 and was amongst the inaugural inductees into the Turnaround Management Association's Hall of Fame in 2008. In 2005, Prof. Altman was named one of the "100 Most Influential People in Finance" by the Treasury & Risk Management magazine. He also received an Honorary Doctorate from Lund University, Sweden in May 2011. Professor Altman was one of the founders and an Executive Editor of the international publication, the Journal of Banking and Finance. He has published or edited two-dozen books and over 150 articles in scholarly finance, accounting and economic journals. He was the editor of the Handbook of Corporate Finance and the Handbook of Financial Markets and Institutions and the author of a number of recent books, including his most recent works on Bankruptcy, Credit Risk and High Yield Junk Bonds (2002), Recovery Risk (2005), Corporate Financial Distress & Bankruptcy (3rd ed., 2006) and Managing Credit Risk (2nd ed. 2008).

09.25

The Age Of Stochastic Calculus

Tom Hyer, *Portfolio Manager,* **BTG PACTUAL**
Tom Hyer received a B.A. from Rice and a Ph.D. from Stanford before beginning his analytics career at Bankers Trust. He joined UBS in 2001, eventually becoming global head of UBS's unified quant group before leaving for BTG in 2011. He is perhaps best known as the author of "It's About Forward Vol", a seminal analysis of calibration techniques for interest rate models, and more recently of the book Derivatives Algorithms. In addition to mathematical modeling, he has long focused on technological and operational issues, especially library and language design. His current focus is on algorithmic prediction and relative-value analysis in macroeconomic markets.

10.05

Panel Discussion
The New Nature Of Quant
How Are, & How Should, We Be Challenging Traditional Assumptions, Re-Examining First Principles & Extending Quantitative Finance Beyond Perfect Market Theory?

Peter Carr, *Managing Director,* **MORGAN STANLEY**
Bio available on pg. 8

Massimo Morini, *Head Of Credit Models & Coordinator Of Model Research,* **BANCA IMI**
Bio available on pg. 7

Attilio Meucci, *Chief Risk Officer,* **KEPOS CAPITAL**
Attilio Meucci is the chief risk officer at Kepos Capital LP. Concurrently he is adjunct professor at the Master' in Financial Engineering - Baruch College - CUNY, where he teaches the intensive Advanced Risk and Portfolio Management bootcamp. Previously, Attilio was the head of research at ALPHA, Bloomberg LP's portfolio analytics and risk platform; a researcher at POINT, Lehman Brothers' portfolio analytics and risk platform; a trader at the hedge fund Relative Value International; and a consultant at Bain & Co, a strategic consulting firm. Concurrently he taught at Columbia, NYU-Courant, and Bocconi University. Attilio is the author of Risk and Asset Allocation – Springer and numerous other publications in practitioners and academic journals. He holds a BA summa cum laude in Physics from the University of Milan, a MA in Economics from Bocconi University, a PhD in Mathematics from the University of Milan and he is CFA chartholder.

10.45 Morning Coffee

11.15

Quantitative Problem Solving Working Groups
This is your chance to set the agenda! Make the most of your time at the conference by putting your specific questions to our expert panel and discussing the key issues impacting your daily work. Email your question in advance to mhoughton@icbi.co.uk

11.45 5 Minute Transfer Break

11.50

The Zeeman Effect In Finance: From CSA Discounting To The CVA/ DVA/ FVA Puzzle

- Interest rates after the credit crunch: risk free rates and risky Libors
- Pricing collateralized derivatives: OIS discounting and classical vs modern formulas

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- Consequences of the new ISDA standard CSA
- Pricing uncollateralized derivatives: how to include counterparty and funding risk under the forthcoming IFRS13
- Practical issues of moving financial institutions to CSA-discounting

Marco Bianchetti, *Senior Quant & Risk Manager,* **BANCA INTESA SANPAOLO**
Marco Bianchetti joined the Market Risk Management, Pricing and Financial Modelling area of Banca Intesa Sanpaolo in 2008. His recent work focuses on model risk management, interest rate modelling and pricing of derivatives. Previously he worked for eight years in the front office Financial Engineering area of Banca Caboto (now Banca IMI), developing pricing models and applications for fixed income and inflation trading desks. He holds a M.Sc. in theoretical nuclear physics and a PhD in theoretical condensed matter physics from the University of Milan.

12.30

Restructuring Counterparty Credit Risk

- CVA and DVA: FVA?
- Closeout conventions
- First to default risk
- Collateral, re-hypothecation and contagion
- Micro and macro approaches to funding
- CVA restructuring: margin lending

Damiano Brigo, *Gilbert Professor Of Mathematical Finance,* **KINGS COLLEGE LONDON**
Damiano Brigo is Gilbert Professor of Mathematical Finance at King's College, London. Formerly Managing Director of Fitch Solutions, during his 14 years in the industry Damiano published more than 50 works in Mathematical Finance, Probability and Statistics, and field reference books in stochastic interest rate and credit modelling. He is Managing Editor of the International Journal of Theoretical and Applied Finance, and is a member of the Fitch Advisory Board and in the Scientific committees for conferences occurring at several academic institutions worldwide. He holds a Ph.D. in stochastic filtering with differential geometry

13.10 Lunch

14.30

Funding Valuation Adjustment: A Consistent Framework Including CVA, DVA, Collateral, Netting Rules & Re-Hypothecation

- ISDA Standard CSA: margining costs and re-hypothecation liquidity risk
- Conditions for collateral discounting
- Funding, hedging and collateralisation
- Impact of close-out amount evaluation on discounting
- Including liquidity policies in pricing
- Bilateral collateralised credit and funding valuation adjusted pricing

Andrea Pallavicini, *Head Of Equity, FX & Commodity Models*
BANCA IMI

15.10

An Objective Estimate Of The Short Term Credit Health Of Firms

Rajan Singenellore, BLOOMBERG

15.50 Afternoon Tea

16.20

Modelling & Valuation Changes Caused By OIS Discounting & Collateral Treatment

- Methodology considerations for OIS discounting
- Introduction of SCSA (Standardised CSA)
- Alternative Termination Events and Replacement Valuation Adjustments
- The implications on CVA and DVA
- Moving to Centralised Counterparties

Faisal Yousaf, *Global Head Of Quantitative Risk & Valuation Group,* **HSBC**
Faisal's PhD, under the supervision of Professor Chris Rogers, examined Probability Theory applied to problems from the Financial Markets. Since 2001 he has held various positions at HSBC Investment Bank based in Canary Wharf London and he took up his current position as Global Head, Quantitative Risk and Valuation Group in June 2009. Faisal has had extensive exposure to modelling and pricing problems within FX, Fixed Income, Credit, Equity and Hybrid Derivatives. His current role spans issues across all of these asset classes.

17.00

Managing FX Risk In Collateral
Modelling The Impact Of Currency Choice & Accurately Pricing The Switching Option
Speaker tbc

17.40 End Of Day 3

11.50

Examining The Latest Advances In Pricing & Hedging Inflation Derivatives

- Breakeven inflation: Examination of the relationship between BE from derivatives and government bonds (divergence, government bond spread, new benchmarks like CPI in UK, etc)
- Vanilla inflation vols: Discussion of the skew for ZC caps and YoY caps in different markets (GBP vs EUR) and ease of fitting; consideration of whether ZC and YoY vols are consistent (e.g. implied mean reversion and/or need for a second factor)
- Term structure models: Consideration of the FX (Jarrow-Yildrim Model) analogy vs inflation rate model (implications for correlations, spot vols, mean reversion, effect of stoch vol), as well as the market model for inflation
- Flow exotics: Pricing LPI via an analytic approximation involving mapping out a common driver of YoY (considerations of skew dynamics)
- Unnatural lags and quantoes: Understanding the correlation between interest rates and inflation in the JY vs inflation rate model (and empirical evidence for certain products)

Chia Tan, *Director, DB Analytics,* **DEUTSCHE BANK**
Chia Chiang Tan is currently a Director within DB Analytics at Deutsche Bank, and an Honorary Lecturer with the Mathematics Department at University College London. He is also the author of Demystifying Exotic Products (Wiley 2010) and Market Practice in Financial Modelling (World Scientific 2012). He has previously held positions at Dresdner Kleinwort, Barclays Capital and CIBC. His work in quantitative research has spanned a myriad of asset classes, including equities, foreign exchange, inflation and interest rates. Chia has an undergraduate degree in Mathematics from University College London and a Master of Mathematical Finance from University of Toronto.

12.30

Overcoming The Challenges To Successfully Modelling Credit/ Inflation-Linked Hybrid Retail Products

Martin Krekel, *Senior Quantitative Analyst,* **UNICREDIT**
Martin Krekel is senior quantitative analyst at UniCredit. Since 2005 he held various positions as quantitative analyst and built amongst others the credit pricing analytics for front and back office. Prior this role, he was the head of the financial mathematics department at the Fraunhofer ITWM research institute. He holds a diploma and a Ph.D. in financial mathematics.

13.10   Lunch

14.30

Understanding The Dynamics Of The US Housing Market, Forecasting Future Prices & The Implications For Mortgage Derivatives
- Capturing the behaviour of housing price volatility
- Applying recent techniques to identify new phenomena in housing price volatility
- Possible explanations for this behaviour of housing price volatility from the point-of-view of an economic theory of leverage
- The impact of housing price volatility on risk management for mortgage derivatives

Paul Thurston
Visiting Professor
CORNELL CFEM
Paul Thurston is a visiting professor at Cornell CFEM. In industry roles, Dr. Thurston specializes in mortgage modeling and analytics. He has held positions as executive director at UBS Securities, head of mortgage analytics at Tower Research Capital, managing director at Agamas Capital, director at Deutsche Bank, and senior vice president at Countrywide. Paul completed a post-doctoral program at Cornell University where he served as H.C. Wang Professor of Mathematics. Paul earned a Ph.D. in Mathematics from the University of Tennessee, and his Ph.D. thesis solved the 4-dimensional Busemann conjecture, a long standing problem in geometry and topology.

15.10

Key Practical Strategies For Hedging Longevity Risk
- Pension buy-ins, buy-outs, and synthetics
- Bespoke vs. indexed longevity swaps
- Collateralization and funding costs in bespoke solutions

Enrico Biffis
Assistant Professor In Actuarial Finance
IMPERIAL COLLEGE LONDON
Enrico Biffis is Assistant Professor in Actuarial Finance at Imperial College Business School. His main research interests lie in the areas of insurance and risk management, with a focus on asset-liability management, valuation of insurance and pension liabilities, and optimal design of risk transfers for long term risks and catastrophe exposures. He has written extensively on market-consistent accounting standards for insurers, longevity risk management and securitization. Prior to joining Imperial College London in 2007, Enrico held positions at Bocconi Milan, Association of British Insurers, and Cass Business School. Enrico holds degrees in Statistics (BSc & MSc), Actuarial Management (MSc), and Mathematics for Economic Decisions (PhD).

15.50   Afternoon Tea

16.20

VARIABLE ANNUITIES MASTERCLASS

Session 1: 40 minutes
How To Price & Hedge Variable Annuities With Unhedgeable Risk
- Risk: the hedgeable, the diversifiable and the unbearable
- The decomposition of surrender risk
- Case study: target volatility fund derivatives
- Case study: basket options

Stefan Jaschke, *Head Of Quantitative Analysis*
MUNICH RE
Stefan Jaschke is heading the Quantitative Methods department within the Financial Solutions division of Munich Re group. His main activities are the model building, the pricing and the structuring of Variable Annuity reinsurance. Stefan has over 12 years experience in the banking and insurance industry, including a stay with the German regulator, designing and negotiating the internal model regulation for Solvency II.

Session 2: 40 minutes
How To Structure Variable Annuities Without Unhedgeable Risk

Yves Lehmann, *Managing Director*
UBS INVESTMENT BANK
Yves oversees the global development of UBS's solutions for Variable Annuities, from reinsurance of existing blocks to new product design for retirement and pensions. Before joining UBS in 2010, Yves had been working with Société Générale since 1995, notably on the Lyxor alternative investment platform, alternative risk transfer, ALM solutions for financial institutions and European Variable Annuities. Yves graduated from Ecole polytechnique and Telecom ParisTech. He started his career with France Telecom and Egis, an international consultancy.

Eric Bensoussan
European Head, Global Equities Structuring
UBS INVESTMENT BANK

17.40   End Of Day 3

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> **Vladimir Lucic,** *Head of Equity Derivatives Quantitative Analytics*
> **BARCLAYS CAPITAL**

Stream C:
Innovations In Quant Investment Strategies & 2nd Generation Volatility Products

11.50

ETF Trading & Volatility

Leveraged ETF Pairs, VIX ETFs & Synthetic Commodity ETFs: Consequences For Markets & Systemic Risk

Marco Avellaneda, *Professor Of Mathematics,* **COURANT INSTITUTE OF MATHEMATICAL SCIENCES, NEW YORK UNIVERSITY** & *Partner,* **FINANCE CONCEPTS**
Marco Avellaneda has been involved in teaching, developing and practicing quantitative Finance for the last 15 years. He worked at Banque Indosuez as consultant in FX derivatives, as a vice-president in fixed-income research at Morgan Stanley, as quant strategist at option marketmaking firm Gargoyle Strategic Investments, as Head of Volatility Arbitrage at the hedge fund Capital Fund Management where he created the Nimbus Fund, and as Portfolio Manager for quant trading at the Galleon Group. His interests are unabashedly focused on quantitative alpha generation. He is known in academic finance as the inventor of the Uncertain Volatility model, for developing model-calibration algorithms using Weighted Monte Carlo/Max Entropy, for the theory behind dispersion trading, and for his more recent works on statistical arbitrage in the US equities market, high-frequency trading and price forecasting. A faculty member at the Courant Institute, he teaches classes in Stochastic Calculus, Risk-management and Portfolio Theory (non-orthodox, yes?), PDEs in finance and Quantitative Investment Strategies. He is in the editorial boards of Communications on Pure and Applied Mathematics (he thinks pure maths rock!), the International Journal for Theoretical and Applied Finance and Quantitative Finance, among others and authored the textbook ``Quantitative Modeling of Derivative Securities``. He was awarded the prize 2010 Quant of the Year by RISK Magazine.

12.30

Achieving Consistent Modelling Of VIX & Equities Derivatives

Artur Sepp, *Vice President,*
Equity Derivatives Analytics, **BANK OF AMERICA MERRILL LYNCH**
Artur Sepp is a Vice President in the equity derivatives analytics at Bank of America Merrill Lynch in London, where he is developing quantitative models for equity volatility and structured products. Prior to joining the equity group in 2009, he worked with the credit derivatives group at Merrill Lynch in New York focusing on quantitative models for multi- and single-name credit derivatives and hybrid products. Between 2006 and 2007, he worked in the equity derivatives group at Bear Stearns in New York. He holds a PhD in Probability and Mathematical Statistics from University of Tartu (Estonia).

13.10   Lunch

14.30

A Simple Model Of Stock Index Volatility

Piotr Karasinski, *Senior Advisor,* **EBRD**
Piotr's career spans more then 25 years and covers all areas of quantitative finance. Educated in physics at Warsaw and Yale universities, he landed on Wall Street by sheer accident. He has worked for a number of leading firms in New York and London and currently is a Senior Advisor at the European Bank for Reconstruction and Development in London.

15.10

From Art To Science: Technology Of Innovation
- "Financial weapons of mass destruction"
- Bayesian lessons for payout structuring
- The origins of safety
- Information as the ultimate asset class

Andrei Soklakov
Vice-President, Model Risk & Analytics
DEUTSCHE BANK
Andrei Soklakov (MSc., PhD. In Theoretical Physics) is a Vice-President of Model Risk and Analytics at Deutsche Bank. Prior to that he worked as a Strategist on the Equity Exotics and Hybrids desk at Goldman Sachs. Before joining Goldmans, Andrei worked for Lombard Risk Systems as a Quant Model Developer while, in his spare time, running a course in financial engineering at the City University. Before starting his career in finance Andrei worked in the Mathematics Department at Royal Holloway, University of London. He has published in a wide range of fields including Quantum Physics, Computer Science, Bioinformatics and Finance.

15.50   Afternoon Tea

16.20

Macro Volatility Strategies: Going Beyond The Equities & VIX
- Volatility as a hedge vs volatility as a source of alpha
- The search for cheap volatility and convexity
- Building efficient multi-asset volatility portfolios
- Drawdown control and other risk considerations

Arthur M. Berd, *Editor-in-Chief,* **JOURNAL OF INVESTMENT STRATEGIES** & *Managing Principal,* **BERD LLC**
Dr. Arthur Berd most recently was responsible for directional volatility strategies across variety of underlying asset classes at CFM, a quantitative multi-strategy hedge fund in Paris. Previously he was the head of quantitative market strategies at BlueMountain Capital Management, a credit hedge fund in New York. Earlier, Arthur was a Senior Vice President at Lehman Brothers, and a Vice President at Goldman Sachs Asset Management. Arthur holds a PhD in physics from Stanford University. He is the founding Editor-in-Chief of the Journal of Investment Strategies (launching in December 2011), and the coordinator of the advisory committee for arXiv.org/q-fin, a global electronic research repository for quantitative finance. He also recently edited the bestselling book on the "Lessons from the Financial Crisis" (RiskBooks, 2010).

17.00

Using VIX Futures & Options For Hedging & Risk Management

Alexey Polishchuk
Quantitative Analyst
BLOOMBERG
Alexey Polishchuk is a Quant Analyst in the Quantitative Financial Research Group at Bloomberg L.P. Prior to joining Bloomberg Mr. Polishchuk worked at Goldman Sachs & Co. in the Equity Volatility Strategies Group, New York, developing pricing and risk management tools for the Index flow desk. Alexey Polishchuk holds a PhD in Theoretical Physics from Steklov Mathematical Institute and a Masters Degree in Financial Mathematics from Columbia University. His current research is focused on modeling and hedging of various Equity and Fixed Income derivative products.

17.40   End Of Day 3

Stream D:
New Approaches To Modelling Hybrid & Structured Products

11.50

Closed-Form Pricing Of Equity Quanto Options In The Presence Of Stochastic Volatility
- Impact of increased equity/FX correlations and FX volatilities on equity quanto options
- Closed-form pricing of equity quanto forward and quanto option in the presence of stochastic volatility
- Calibration to benchmark instruments
- Impact of the FX smile on equity quanto options

Alexander Giese, *Managing Director, Head Of The Equities & Commodities Quantitative Product Group,* **UNICREDIT**
Alexander Giese is a Managing Director and the Head of the Equities & Commodities Quantitative Product Group at UniCredit which he joined in 2002. He graduated in Financial Mathematics at the Technical University of Berlin and also holds an MSc in Financial Mathematics from Florida State University. His main research interests include stochastic volatility models, hybrid models and static hedging.

12.30

Hybrid Derivatives & Extension Of Pricing Models For CVA
- Definitions of CVA, and relation to credit linked hybrids
- Pricing and calibration of long dated multi-asset products
- Use and extensions of Mixed Volatility Dynamics (MVD) model
- Local and Stochastic Vol mixtures, correlated SV processes in multi-underlying products
- Inclusion of correlated creditprocesses
- Examples for CVA, DVA, and WWR

Han Lee, *Global Head Of Quantitative Research, Global Banking & Markets,* **RBS**
Han Lee is currently Global Head of Quantitative Research at RBS Global Banking and Markets, responsible for front office quant analytics and development across all asset classes. This covers derivative products, algorithmic solutions, and CVA analytics. Previously at Numerix software company NumeriX, he headed the firm's European subsidiary and was also global head of quantitative research. Prior to that he was head of quant research for Global Fixed Income Structured Products at Commerzbank, and before that at Tokyo-Mitsubishi International (TMI) he headed the quant desk for the Exotics Derivatives Group. While at TMI he also managed an exotics trading book. He started as a quantitative analyst at NatWest Markets in interest rate derivatives. Han received his Ph.D. in Theoretical Physics from the University of Cambridge.

13.10   Lunch

14.30

The Latest Approaches For Risk Managing & Modelling Synthetic ETFs

Christos Costandinides
European Head Of ETF Research & Strategy
DEUTSCHE BANK

15.10

Structuring & Pricing Structured Products To Ensure Transparency & Fair Distribution Of Risk & Reward
Speaker tbc

15.50   Afternoon Tea

16.20

Multi-Factor Models For Convertible Bonds: Capturing Multiple Sources Of Risk
I will give a short overview of the models used industry-wide to price and hedge convertible bonds. The main point will be an overview of the multi-factor character of convertible bonds in practice and how to address this from a valuation perspective. The convertible bond price levels went through a "perfect" storm in 2008 and rose like a phoenix from the ashes in 2009. The ideal laboratory to test pricing models.

Jan de Spiegeleer
Head Of Risk Management
JABRE CAPITAL PARTNERS
Jan De Spiegeleer is head of risk management at Jabre Capital Partners, a Geneva-based hedge fund. He earned an extensive knowledge of derivatives pricing, hedging and trading while working for KBC Financial Products in London, where he was managing director of the equity derivatives desk. He also ran his own market neutral statistical arbitrage hedge fund (EQM Europe) after founding Erasmus capital in 2004. Prior to his financial career, Jan has spent ten years in the Belgian Army during which he also served in Iraq. He holds a Msc. in Civil Engineering (Royal Military Academy, Brussels) and an MBA (University of Leuven). Together with Wim Schoutens, he has authored The Handbook of Convertible Bonds (Wiley 2011) and Contingent Convertible (CoCo) Notes (Euromoney 2011).

17.00

Pricing & Risk Management Of CoCos
- An update on contingent capital
- Standard pricing models for CoCo bonds
- Exploring the effect of jumps and stochastic volatility in the pricing of CoCos
- Risk managment of CoCos and death-spiral solutions

Wim Schoutens
Research Professor
CATHOLIC UNIVERSITY OF LEUVEN
Wim Schoutens is a research professor in financial engineering in the Department of Mathematics at the Catholic University of Leuven, Belgium. He has extensive practical experience of model implementation and is well known for his consulting work to the banking industry and other institutions. He is an expert advisor to the European Commission (DG-Competition) on "State aid assessment of valuation of impaired assets and of asset relief measures". Wim is author of the Wiley books "Lévy Processes in Finance: Pricing Financial Derivatives" and "Lévy Processes in Credit Risk". Wim is the author of Lévy Processes in Finance, Lévy Processes in Credit Risk and The Handbook of Convertible Bonds: Pricing, Strategies and Risk Management and is co-editor of Exotic Option Pricing and Advanced Lévy Models all published by Wiley. He is Managing Editor of the International Journal of Theoretical and Applied Finance and Associate Editor of Mathematical Finance, Quantitative Finance and Review of Derivatives Research.

17.40   End Of Day 3

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