

Curriculum Vitae Damiano Brigo

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1 Imperial College: Chair and co-Head of Mathematical Finance (2012-current)

Appointed in August 2012 as Chair of Mathematical Finance and co-Head of the Mathematical Finance Research Group at Imperial College, London. Imperial College is consistently ranked by Times Higher Education and QS among the top ten universities in the world.

- Leading research in financial modeling with stochastic models: Modeling of counterparty credit risk, collateral and funding costs, modeling multiple interest rate curves including credit and funding effects, multivariate dynamics for the volatility smile of indices and portfolios, liquidity adjusted risk measures, dynamics of dependence of default times, top down and bottom up models for multi-name credit risk, optimal trade execution and algorithmic trading. Tools from probability and statistics include Stochastic Differential Equations, Multivariate diffusion processes with non-diagonal state dependent diffusion matrix, dynamical mixtures of distributions, Jump diffusion models, Levy Processes, Characterization of lack of memory in multivariate arrival times and Marshall Olkin distribution, HJB approaches, Backward Stochastic Differential Equations and nonlinear Feynman Kac.
- Leading research in signal processing: Stochastic filtering with differential geometric methods based on exponential families and mixture distributions. Mathematical tools used here include projection of infinite dimensional stochastic partial differential equations in Fisher or Direct L2 metric onto finite dimensional manifolds of densities (typically exponential families or mixture families).
- Teaching of Core Master Courses "Interest Rate Modeling under credit and funding liquidity risk", "Financial Engineering".
- Teaching the PhD Course (London Graduate School in Mathematical Finance) Counterparty Credit Risk, Collateral and Funding Costs with Arbitrage-free Models,
- Responsible for the Research Excellence Framework (REF) assessment for the Mathematical Finance Research Group.
- Invited and Plenary speaker at a number of important academic and industry venues, see attachments for the details.
- Interviewed by press and industry magazines both in relation to academic research and to research work done through Imperial Consultants, see attachments for the details,
- Author of several academic journal publications and also monographs, see attachments,
- Editor in Chief, Managing Editor and Editorial Board of several academic journals for World Scientific and Routledge, see attachments,
- Scientific Committee of the Credit Conference 2013 in Venice, Italy, and Scientific Committee of the Quant Congress Europe 2013, London.
- Supervision of 5 PhD students,
- Group representative for the London Graduate School of Mathematical Finance.

2 Capco: Director of the Capco Institute (2012-current)

Director of the Capco Research Institute from October 2012.

- Designed the methodology for the creation of the CEPIX Euro Exit probability index, see press releases in the attachments.
- Strategic Research and Thought Leadership
- Organizing three Finance conferences a year in London, NY and Euro area
- Providing methodology leadership and support in particularly sensitive projects
- Editor in Chief of the Capco Journal of Financial Transformation

3 King's College, London: Gilbert Professor of Financial Mathematics (2010-2012)

Appointed Gilbert Chair of Financial Mathematics at the dept. of Mathematics at King's College, London, in August 2010. King's College has been ranked among the top 25 universities worldwide in 2009 and has been awarded the title of University of the Year by the Sunday Times in 2010. Main roles as Gilbert Chair:

- Head of the Financial Mathematics Research Group at the Dept. of Mathematics
- Master Programme Director for the Master in Financial Mathematics.
- Lecturing two master courses: FM07 "Interest Rates and Foreign Exchange Dynamics" and FM10 "Credit Risk Management".
- Lecturing the PhD course for the London Graduate School of Mathematical Finance: "Arbitrage free pricing of Credit Valuation Adjustment".
- Hired three new colleagues at Lecturer, Reader and Professor level, bringing the size of the group to seven.
- Helped reform the "Mathematics with Management" programme.
- Provided Impact by having one of the publications being quoted as a technical support in a sentence in the court of law in Novara, Italy
- Authored several publications in top journals and books
- Interviews with newspapers and industry magazines.
- Invited Plenary speaker at several key industry conferences and networking events (Royal Society, Royal Stock Exchange)
- Advisory board of NumeriX
- Co-originated a grant applications for the creation and three years funding of a joint research center RISC (Risk In the Social Contract) comprising King's College Financial Mathematics, King's College Geography, King's College European Law and Imperial College Business School.

4 Fitch Solutions: Global Head of Quantitative Analytics, Managing Director (2008-2010)

Managing Director and Global Head of the Quantitative Analytics team, reporting directly to the Head of Fitch Solutions, in the period January 2008 - July 2010. The team consisted of 9 quantitative analysts in London and New York.

- Refining the design of a trading liquidity scoring model for the CDS pricing service, based on the CDS contributors data, using inactivity, bid offer and dispersion measures.
- Design of a trading liquidity model for extracting a liquidity spread in basis points from CDS contribution, consistently with the liquidity scores.
- Pricing of multi-currency CDS. Relationship between CDS spreads on the same name when protection is offered in different currencies.
- Pricing of first to default baskets in emerging markets.
- Bond-CDS basis analysis, sovereign CDS analysis.
- Pricing prototypes for bilateral counterparty risk in Interest Rates and Credit Default swap payoffs.
- Pricing of Contingent CDS and counterparty risk for interest rate, credit and commodity products under correlation between default and the underlying assets. Analysis of wrong way risk profiles.
- Pricing of Credit Index Options and analysis during the subprime crisis.
- Inflation, FX and hybrids modeling for both valuation and risk management.
- Valuation of deals involving Collateralized Obligations (CDO) on corporates, residential mortgages (RMBS), commercial mortgages (CMBS), and corporate loans (CLOs).
- Development of a new dynamic loss model for correlation products and CDOs on corporates with consistent calibration of index tranches across maturities and consistency with single names and cluster defaults.
- Research defending the quantitative analysts work before and during the crisis, culminating in a monograph for Wiley entitled "Credit Models and the Crisis".
- Recruiting new team members. from Analyst to Director level, to replace team analysts on leave.

5 DerivativeFitch: Global Head of Quantitative Innovation, Managing Director (2007)

Managing Director and Global Head of the Quantitative Innovation team, comprising **10 quantitative analysts in London, New York and Hong Kong**, July - December 2007.

- Quantitative analysis of risk and ratings in deals involving Collateralized Obligations on Credit (CDO), commodities (CCO), funds (CFO), exchange rates (CFXO), equity (CDO of EDS), Constant Proportion Debt Obligations CPDO, CPDO's on tranche spreads, CMS CPDO.
- Analysis of Ratings for quantitative strategies for pension funds, FX carry trades, Credit Fund Notes
- Investigation of alternative dependence structures for the Vector framework changes project, aiming at redesigning the rating procedures for CDOs and structured products while taking into account dependence dynamics, extreme events, systemic risk and the economic cycle. This included analysis of stochastic recovery rates, alternative copula functions, stochastic intensity models, dynamic loss models.

6 Banca IMI: Head of Credit and formerly Interest Rate Models (1998-2007)

The work done in Banca IMI went from October 1998 to July 2007, first as head of Interest-rate models and from 2002 on as head of Credit Models and Counterparty risk models. The modelling activity has involved at different stages also equity derivatives modelling in presence of volatility smile, basket derivatives, cross currency derivatives. There has also been active involvement in Risk Measurement models, procedures and decisions. This work consisted also in managing a group of three junior analysts.

The main activities carried out in Banca IMI can be summarized as follows:

- **Credit Derivatives Models (2002-2006)**. Design of proprietary and industry credit models for valuation of single name and multi-name credit derivatives. In particular, Stochastic intensity/interest-rate models and calibration to Credit Default Swaps (CDS). Closed form formulas for CDS options. Market models for CDS options and defaultable floaters. First to default, CDO, CDO squared and Basket credit derivatives valuation with copulas and deterministic intensities. A new dynamic loss model for correlation products with consistent calibration of index tranches across maturities. Implementation and customization of the "Perfect Copula" approach by Hull and White. Tractable structural model calibrated to the CDS term structure and pricing of hybrid products such as equity return swaps with counterparty risk. Counterparty risk valuation in general. Counterparty risk for portfolios of swaps in presence of netting and for non-standard swaps: derivation of an analytical approximation and monte-carlo approach.
- **Risk Management (2002)**. Comparative study of different risk measurement formulations, and design of a prototype for value at risk calculations based on historical simulation.
- **LIBOR market model (1998-2002)**. Design and testing of different formulations for instantaneous covariance parameterization in the LIBOR (BGM) market model for interest rate

derivatives valuation. Study of possibly joint caps/swaptions calibration, terminal correlation configuration, and volatility term structure diagnostics. Monte Carlo simulations of the model.

- **Smile modelling (1998-2004)**. Design and prototype implementation of proprietary models for volatility smile modelling, including the “lognormal mixture dynamics” and its uncertain parameters generalizations and extensions.
- **Basket derivatives (1998-2001)**. Monte Carlo pricing of basket options through approximated dynamics involving the first two or three moments of the basket.
- **Short interest-rate models (1999-2005)**. Design and prototype implementation for calibration and pricing of proprietary and standard instantaneous short-interest-rate models such as CIR++, Extended Exponential Vasicek, G2++ (Hull White), SSRD, Black Karasinski, and others.
- **Cross-currency and Quanto derivatives (1998-2001)**. Monte-Carlo pricing with two-factor Hull White model of Quanto Constant maturity swaps with optional components, and cross currency interest rate derivatives in general, including correlation between interest rate curves of different currencies.

7 Banca Intesa: Quantitative Analyst (1997-1998)

Quantitative Analyst from February 1997 to October 1998 at the Risk Management department of Banca Intesa on the following projects:

- Italian floating rate notes (CCT) analysis based on short rate models (Hull and White) and presentation of the results at “riunione degli operatori telematici al Ministero del Tesoro.”
- Value at risk calculations for different interest rate swap portfolios.
- Analysis of the total market risk of the bank as implied by the operational limits through a delta-normal value-at-risk model.
- Single name and basket exotic equity option pricing through Monte Carlo simulation.
- Codes for Garch estimation of volatility through maximum likelihood estimation.
- Pricing opportunities for LIBOR-Rendistato swaps through the Hull and White model.

8 Further Academic, Advisory and Editor appointments (1987-Current)

Here a summary is given for academic appointments beside the full time roles as professor at King's College and Imperial College London. Full details are available in attachments B, C and D below.

- **(2012-current) Editorial Board** of “Applied Mathematical Finance”, Routledge.
- **(2012-current) Editorial Board** of “Global Credit Review”, World Scientific.
- **(2012-current) Editor in Chief** of the “Journal of Financial Transformation”, Capco.
- **(2007-current) Managing Editor** of the “International Journal of Theoretical and Applied Finance”, World Scientific.
- **(2008-2010) Visiting Professor** at the Dept. of Mathematics at Imperial College, London.
- **(2008-2009) Adjunct Professor** at Essex University, CCFEA, for the advanced Course “CF907-7-SP: Fixed-Income Asset Pricing, Default Risk, and Credit Ratings, 2008/09”.
- **(2007-2010) Included in the ”Fitch Academic Advisory Board”** upon joining Fitch Ratings.
- **(2005-2007) “Professore a contratto”** for the CLEFIN fixed income course at the Bocconi University. Master level teaching on interest rate models for Bocconi's international students of the advanced Laurea. The course covered interest rate modelling, from short rate models to the LIBOR market model, looking also at the market payout structure and at the rigorous change of measure and stochastic processes theory involved.
- **(2003-current) Teaching of Professional training courses** for Interest rate, Credit derivatives and Counterparty Risk modelling (Risk Magazine Training, Marcus Evans, Concentric, GARP, PRMIA, Bank of Italy, among others)
- **(2003-current) Scientific committee** of the Italian Workshops of Quantitative Finance (2003-2006), 2011, of the FEA (**Financial Engineering and Applications**) **2004 and 2006 Conference held at MIT**, Cambridge, Massachusetts, and of the Numerical Methods in Finance conference held at the Institute for Numerical and Computational Analysis, Dublin, 2006 and 2008. Scientific Committee of the 2nd International Financial Research Forum, “Risk Management and Financial Crisis”, Paris, March 19 -20, 2009, and of the conference “Recent Advancements in the Theory and Practice of Credit Derivatives”, Sept. 28-30, 2009, Nice, France. Advisory Board for the Quant Congress Europe 2010, 2011, 2012, 2013, Scientific Committee for the C.R.E.D.I.T. Conference in Venice, 2010 and 2013.
- **(2002-2006) Teaching of Master courses** of Interest rate models and Credit derivatives Models at the FINARM master of the Bicocca University in Milan, at the master of the Bologna University, at advanced courses of the ABI (“Associazione Bancaria Italiana”) association, the Bank of Italy, and at the post-university school “Scuola Avanzata di Formazione Integrata” of the Institute of Advanced Studies in Pavia.

- **(1997-current) Tutor, advisor or supervisor of undergraduate, master and PhD students** and/or Banca Intesa/IMI trainees from universities (including Bocconi, Stanford, Sorbonne, Ecole Polytechnique, ENPC, Ghent University, New York University, Pavia University, Milano Bicocca University).
- **(1995-current)** More than 200 presentations at **invited seminars, workshop, conferences and congresses** all over the world (See Attachments “B” and “D” for the details).
- **(1995-current)** Referee for a number of leading journals and magazines in the Mathematical finance/ Financial Engineering/ Systems and Control / Probability communities, and Book reviews for Wiley, Academic Press and Risk Books.
- (1987-1993) High school teacher of Mathematics, Physics and Computer Science at different high schools during the university studies (1987-1990) and subsequently from January 1991 to August 1993, with a break due to military service.

9 Citations, H-index, Most cited Risk author, Press interviews (2005-current)

H-index

Output through google scholar <http://code.google.com/p/citations-gadget/> as of November 2011: **H-Index for brigo d: 24**

Most Cited author Worldwide in Risk Magazine

2012		2010		2006	
Brigo D	9	Brigo D	7	Brigo D	8
Pallavicini A	6	Glasserman	6	Hull J	7
Piterbarg V	6	Brody D	5	Martin R	7
Bergomi L	4	Gregory J	5	Mercurio F	7
Glasserman	4	Lipton A	5	Piterbarg V	6
Hagan	4	Hughston L	5	Andersen L	5
Labordere	4	Madan D	5	Black F	5
				Frye J	5
				Litterman R	5
				Thomson K	5

Table 1: Authors and number of citations in Risk Magazine in 2012, 2010 and 2006, from Risk Magazine, December issues, 2012, 2010 and 2006. Brigo is the most cited authors in these years

Damiano has been listed as the second top author by number of citation in Risk Magazine in 2008, and as the third in 2009. He has also been listed as the third most published author in 1994-2009 (Risk Magazine, Dec. 2009).

Press and general media

- Interview and Profile published in the leading investment banking magazine, Risk Magazine, with the title “The risk-free myth”, March 2011 issue
- Financial Times: Interviewed by “The Banker”, the Financial Times monthly international financial affairs publication. It is read in 150 countries around the world. The Banker prides itself on being the key source of data and analysis for the finance industry. Interviewed in the article “Has Basel got its numbers wrong?”, June 21 2011.
- Press interview in the leading investment banking magazine, Risk Magazine, in the article “Adjustment anxiety”, Sept 2011 issue.
- Risk Magazine: “Quants call for Isda to clarify close-out values”, interview and quotes, published online in Dec 2011.
- Risk Magazine: “Risk Annual Summit: DVA hedging creates systemic risk, says Brigo”, published online in March 2012.
- Mentioned and quoted in the article “Traders v. theorists”, Risk Magazine, Sept 2012 issue.
- Risk Magazine: quoted in the article “Banks will struggle to fill top quant roles”, published online in July 2012.
- Financial Times: quoted in the FT blog “Alphaville”, July 2012.
- Risk Magazine: “FVA ends platonic price, says Brigo”, interview and quotes, published online in Oct 2012.
- Interview in Waters Technology, Jan 2013 issue, “Credit Valuation Challenge”, pp 22-25.
- Press releases on the CEPIX index, designed by Brigo, by both Imperial Consultants and Capco, March 2013.
- Interview by Reuters on the CEPIX index, published online, “Euro zone crisis exposes poor quality of risk and regulatory risk information”, June 6, 2013.

10 Publications (1995-on)

More than 70 journal publications in mathematical finance, probability, statistics and systems theory (both journal publications and volume chapters/contributions) in journals such as *Mathematical Finance*, *Finance and Stochastics*, *Bernoulli*, *IEEE Transactions on Automatic Control*, *Systems and Control Letters*, *Insurance Mathematics and Economics*, *Statistics and Probability Letters*, *Communications in Statistics: Theory and Methods*, *Quantitative Finance*, *International Journal of Theoretical and applied finance*, *European Journal of Operations Research*, and the more industry oriented *Risk Magazine*, *Journal of Derivatives*, *Journal of Risk Management in Financial Institutions*. One book entitled “Interest Rate Models: Theory and Practice” for Springer Verlag that has become the main international field reference, used in several PhD courses and on trading floors of top financial institutions across the world. A

book on “Credit Models and The Crisis” for Wiley that focuses on Credit Derivatives models before and during the crisis. Co-Editor of the volume “Credit Risk Frontiers: Subprime crisis, Pricing, Hedging, CVA, MBS, Ratings and Liquidity” for Wiley/Bloomberg Press. Finally, leading author of the influential volume “Counterparty Credit Risk, Collateral and Funding, with pricing cases for all asset classes”, Wiley, 2013, the first monograph to deal in detail with the theory of funding costs from an advanced mathematical point of view. For the detailed list of publications see attachment “A” below.

11 Ph.D. in Probability and Stochastic Systems theory (1993-1997)

The Ph.D. program (September 1993 - February 1997) occurred under the supervision of Prof. J.H. van Schuppen of the Center for Mathematics and Computer Science (CWI) of Amsterdam, and under the tutorship of Dr. Bernard Hanzon of the Department of Econometric of the Free University of Amsterdam. A second tutor was Dr. François Le Gland at the French Institute of Computer Science and Stochastic Systems (IRISA/INRIA) in Rennes, France, where the candidate worked for one year. Some parts of the program occurred at the CNR institute “LADSEB” in Padua and at the Mathematics department of the University of Padua. The PhD thesis “Filtering By Projection on the Manifold of Exponential Densities” was successfully defended against an international committee featuring among others Prof. O.E. Barndorff-Nielsen (Theoretical Statistics, University of Aarhus, Denmark), Prof. G.B. Di Masi (Mathematics, Padua), Prof. J. Schumacher (CWI, Amsterdam), Dr. F. LeGland (IRISA, Rennes), Dr. P.J.C. Spreij (VU, Amsterdam). The research carried out during the PhD program led to several scientific results that were later published on journals of the Systems and Control Theoretical community, of the Mathematical Finance community and of the Probability community.

12 Grant Applications and Funding

PhD studies, 1993-1997

The PhD project was financed and supported by several institutions, including:

- **European Union:**
 - SCIENCE Project System Identification (contract number SC1*-CT92-0779);
 - HCM Network Statistical Inference for Stochastic Processes (contract number SC1*-CT92-0779);
 - Individual fellowship of the program Training and Mobility of Researchers (contract number FMBICT960791);
- **U.S. Army** (contract number DAAH04-95-1-0164);
- **The “INDAM” Italian Institute for Advanced Mathematics**, with a Senior fellowship;
- **The University of Padua**, with an eighteen months individual fellowship of the foreign-studies program.

- **CNR:** The candidate was also elected for a CNR fellowship for foreign studies in 1996, but had to give up the fellowship given that the TMR fellowship above was not compatible with the CNR one.

Recent Grant Applications, 2010 on

Given the years spent in the industry (1997-2010), the grant application activity started in 2010.

Having been approached at King's College by the Geography Dept. for help with originating a Grant Application for the creation and three-years funding of a new research center called RISC (Risk In the Social Contract), the candidate approached the Imperial College Business School and helped originating a proposal involving King's Financial Mathematics, King's Geography, King's European Law and the Imperial College Business School.

13 Military Service (1991-1992)

from may 1991 to may 1992 at the Missile artillery division.

14 Laurea degree in Mathematics (1985-1990)

at the University of Padua on November 21, 1990, with honors (110/110 e lode)

ATTACHMENTS

Attachment A: List of Publications

References

[BOOKS]

- [1] D. Brigo, F. Mercurio: *Interest-Rate Models: Theory and Practice*, Springer-Verlag, 2001. This book has quickly become one of the main international references for interest rate derivatives pricing and is being used in PhD courses and teaching, as well as in trading floors, all over the world. The second edition (2006) with 400 more pages (for a total of 1000 pages) includes credit derivatives, counterparty risk, inflation and extensive smile modelling.
- [2] D. Brigo, A. Pallavicini and R. Torresetti: *Credit Models and the Crisis: A journey into CDOs, Copulas, Correlations and Dynamic Models*, Wiley, 2010.
- [3] T. Bielecki, D. Brigo, and F. Patras (Editors) (2011). *Credit Risk Frontiers: Subprime crisis, Pricing and Hedging, CVA, MBS, Ratings and Liquidity*. Wiley/ Bloomberg Press.
- [4] Brigo D., Morini, M., and Pallavicini, A. (2013). *Counterparty Credit Risk, Collateral and Funding*, with Pricing cases for all asset classes, Wiley and sons, Chichester.

[JOURNAL PUBLICATIONS IN MATHEMATICAL FINANCE]

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- [18] Brigo, D., Mercurio, F., Rapisarda, F., Smile con volatilità incerta, *Risk Italia*, (2004), October issue (Italian version of the previous reference).
- [19] Brigo, D., Market Models for CDS Options and Callable Floaters, *Risk*, (2005), January issue.
- [20] Brigo, D., Alfonsi, A., Credit Default Swap Calibration and Derivatives Pricing with the SSRD Stochastic Intensity Model, *Finance and Stochastic* (2005), Vol. 9, N. 1.
- [21] D. Brigo, F. Mercurio, and M. Morini, The Libor Model Dynamics: Approximations, Calibration and Diagnostics, *European Journal of Operation Research*, 163 (2005), pp 30-41.
- [22] Brigo, D., Market Models for CDS Options and Callable Floaters, *Risk*, (2005), January issue.
- [23] Brigo, D., Modelli di Mercato per opzioni CDS e obbligazioni a tasso variabile defaultabili "callable". *Risk Italia*, (2005), October issue. Italian version of the preceding paper.
- [24] Brigo D., and Liinev J., On the distributional difference between the Libor and the Swap market models. *Quantitative Finance*, Vol 5, n. 5, 2005.
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- [142] D. Brigo, "Problemi di Filtraggio non Lineare: Analisi asintotica e soluzione per sistemi lineari a tratti", Laurea dissertation, University of Padua, 1990
- [143] D. Brigo, *Filtering by Projection on the Manifold of Exponential Densities*, PhD Thesis, Free University of Amsterdam, 1996. This thesis includes the published references [53], [54] [55] [56] [72] [73] above and elements from a few others.

Attachment B: List of Academic Talks, Lectures and Panels.

The following list includes some of the conference talks, invited seminars and presentations given since 1995. Seminars and talks given by coauthors of joint papers are omitted.

1. *The Projection filter: Simulations for the cubic sensor*, third workshop of the *European Network System Identification* (ERNSI) Noordwijkerhout, The Netherlands, 23 Sept 1994.
2. *A Differential Geometric approach to nonlinear filtering: the projection filter*, seminar at the Department of Mathematics of the University of Padua, 19 Dec 1994.
3. *On the relationship between the Assumed Density Filter and the Projection Filter*, seminar at the research institute LADSEB of CNR in Padua, 22 Dec 1994.
4. Presentation of the paper [91] at the *Workshop Statistical Inference for Stochastic Processes*, Tinbergen Institute of Amsterdam, 5–7 Apr 1995.
5. Presentation of the paper [91] at the annual meeting of the “*Gruppo Nazionale Analisi Matematica e Applicazioni*” (GNAMF-CNR, “gruppo di studio di finanza matematica”), Perugia, 25–27 May 1995.
6. Presentation of the paper [91] at the fourth Workshop of the *European Network on System Identification* (ERNSI), Padua, 7–9 giugno 1995.
7. *A differential geometric approach to nonlinear filtering: the projection filter*, seminar at the National Research Institute on Computer Science and Automatica (INRIA), Sophia Antipolis, France, 21 Jul 1995.
8. *A differential geometric approach to nonlinear filtering : the projection filter. New developments*, seminar at IRISA/INRIA, Rennes, France, 19 Oct 1995.
9. *A differential geometric approach to nonlinear filtering : the projection filter. New developments*, seminar at the Department of Mathematics of the Milan University, 6 Dec 1995.
10. *A differential geometric approach to nonlinear filtering : the projection filter. New developments*, seminar at the “Politecnico di Torino”, Department of Mathematics, 13 Dec 1995.
11. *On the existence of one dimensional diffusions with prescribed diffusion coefficients whose laws evolve in a prescribed exponential family*, seminar at the Department of Mathematics of the University of Padua, 23 Jan 1996.
12. *Filtering by projection on the manifold of exponential densities*, seminar at the Department of Theoretical Statistics of the Århus University, Denmark, Seminar invited by Prof. O.E. Barndorff-Nielsen, 26 Apr 1996.
13. Presentation of the results appeared later in Chapter 7 of the Thesis [143] at the *Workshop Statistical Inference for Stochastic Processes 1996*, Sandbjerg, Denmark, 30 Apr 1996.

14. *Diffusion processes, manifolds of exponential densities and nonlinear filtering*, seminar at the *Center for Mathematics and Computer Science (CWI)*, Amsterdam, 11 June 1996.
15. Presentation of the paper [72] at the conference *Conference on Stochastic differential and difference equations*, Győr, Hungary, 21–24 Aug 1996.
16. Presentation of the paper [73], invited by Professor O.E. Barndorff-Nielsen, at the conference *Geometry in Present Day Science*, held at the *Mathematical Research Centre of the University of Aarhus (MCAA)*, 16–18 Jan 1997.
17. Invited presentation of the paper [5] *On some filtering problems arising in mathematical finance* at the *International Workshop on The Interplay between Insurance, Finance and Control, Mathematical Research Centre of the University of Aarhus (MCAA)*, 25 Feb - 1 Mar 1997.
18. Presentation of the paper [5] at the *Third Italian conference on Mathematical Finance*, Trento, 26 - 30 May 1997.
19. Invited seminar at the *Department of Econometrics* of the Free University of Amsterdam, 19-22 Nov 1997: *Option Pricing Impact of Alternative Continuous–Time Dynamics for Discretely–Observed Stock Prices* [7].
20. Presentation of the paper [10] *A deterministic–shift extension of analitically tractable and time–homogeneous short–rate models* at the International Conference on Mathematical Finance, Hammamet, Tunisia, 14–18 June 1999.
21. Invited seminar (Prof. Cassese) *Option Pricing Impact of Alternative Continuous–Time Dynamics for Discretely–Observed Stock Prices* [7] at the IGIER Institute of the Bocconi University in Milan, 19 oct 1999.
22. Invited seminar (Prof. Barone Adesi) *Option Pricing Impact of Alternative Continuous–Time Dynamics for Discretely–Observed Stock Prices* [7] at the “Università della Svizzera Italiana” in Lugano, 10 Nov 1999.
23. Presentation of *Option Pricing Impact of Alternative Continuous–Time Dynamics for Discretely–Observed Stock Prices* [7] at the Workshop on Mathematical Finance held at the “Facoltà di Economia dell’Università D’Annunzio di Pescara”, 28-29 Jan 2000.
24. Seminar “Theory and Practice of the lognormal forward Libor and swap market models” at the Dept. of Mathematics of the University of Padua, 26 May 2000.
25. Presentation of *Discrete Time vs Continuous Time Stock-price Dynamics and implications for Option Pricing* at “Mathematical Finance - First Bachelier World Congress”, Paris, June 28 - July 1, 2000.
26. Presentation of the paper “The CIR++ Model and other deterministic-shift extensions of short rate models” at the Columbia-JAFEE International Conference of Mathematical Finance, Tokyo, 16-17 Dec 2000.
27. Seminar “La nuova generazione dei modelli di tasso d’interesse: Il Libor market model” for students of the “Scuola per le Applicazioni della Matematica all’Industria” (SAMI) at the Dept. of Mathematics of the Bicocca University in Milan, 23 May 2001.

28. Presentation of the work “On the joint calibration of the LIBOR market model to caps and swaptions data” to the “Annual Research Conference in Financial Risk”, Budapest, 12-14 July 2001.
29. Seminar “Mixture-Diffusion Stochastic Differential Equations and Volatility-Smile Modelling” at the Dept. of Mathematics of the University of Padua, 26 Oct 2001.
30. Invited presentation (Prof. Fusai) of the work “The new generation of interest-rate derivatives models: The LIBOR and Swap market models” at the “WORKSHOP ON INTEREST RATE MODELLING: RECENT ISSUES”, Novara, Dept. of Economic Sciences and Quantitative Methods of the “Università del Piemonte Orientale”, 20 Dec 2001.
31. Presentation of the work “Different covariance parameterizations of the Libor market model and joint caps/swaptions calibration” at the conference “Quantitative Methods in Finance”, Sydney, Dec 2001.
32. Invited presentation of “Volatility-Smile Modelling with Mixture-Diffusion Stochastic Differential Equations” at the Hitotsubashi University, Tokyo, 19-20 March 2002.
33. Invited presentation of “The new generation of interest-rate derivatives models: The LIBOR and Swap market models” at the plenary session of the “30-th Euro Working Group for Financial Modelling”, Capri, 2-4 May 2002.
34. Invited presentation for students of the “Università G. D’Annunzio” of Chieti, as part of the day “Invito alla finanza matematica”: “The volatility smile and diffusion mixture dynamics”, Chieti, 6-7 June 2002.
35. Presentation of “LIBOR-dynamics calibration to market volatilities and swap-rate distributional distance from the lognormal family” at the “Second World Congress” of the “Bachelier Finance Society”, Crete, 12-15 June 2002.
36. 2002: Eight hours lecture (4 + 4) “Interest rate models: theory and practice” for the FINARM Master students of the Milano-Bicocca University, 4 - 9 July 2002.
37. Invited presentation of “Moment-matching and multivariate diffusion mixture dynamics for basket-options valuation” at the seminar series “Petit déjeuner de la finance” of the “Ecole Polytechnique”, Paris, 25 Sept 2002.
38. Invited presentation of “Volatility-Smile Modelling with Mixture-Diffusion Stochastic Differential Equations” at the conference “Quantitative Finance”, Risk Magazine, London, 25-26 Nov 2002.
39. Invited presentation of “Volatility-Smile Modelling with Mixture-Diffusion Stochastic Differential Equations” at the “Winter School in Mathematical Finance” (Kasteel Oud Poelgeest, Oestgeest, Amsterdam, 16-18 Dec 2002);
40. Invited presentation of “A two-dimensional shifted square-root diffusion model for credit derivatives with calibration to credit default swaps” at the “Università della Svizzera Italiana”, Lugano, 15 Jan 2003.

41. 2003: Four hours lecture (2 + 2) “How modeling is born and evolves: Interest rate modeling”, at the post-university school “Scuola Avanzata di Formazione Integrata” of the Institute of Advanced Studies in Pavia, 4 - 5 Feb 2003.
42. Invited presentation of “A two-dimensional CIR++ shifted diffusion model with automatic calibration to credit default swaps and interest rate derivatives data” at the “6-th Columbia=JAFEE International Conference”, Tokyo, 15-16 March 2003.
43. Invited presentation of “A two-dimensional shifted square-root diffusion model for credit derivatives: Calibration, pricing and the impact of correlation” at the conference “Risk Europe 2003”, Risk Magazine, Paris, 8-9 April 2003.
44. Invited presentation of “Introduction to the mixture dynamics for volatility-smile modelling” and “Modelling the smile in the LIBOR market model” at the congress “Risk Italia”, Risk Magazine, Milan, 14-15 March 2003.
45. 2003: Sixteen hours lecture (4×4) “Interest rate models: theory and practice” for the FINARM Master students of the Milano-Bicocca University, 25-26 June and 1-2 July 2003.
46. Invited seminar (Prof. Carol Alexander) at the ISMA Center of Reading: Calibration of Credit Default Swaps and Valuation of Related Derivatives with a Tractable Intensity Model, 29 Oct 2003.
47. Invited seminar “Frontiere della ricerca” (research frontiers) for ASSIOM, 19 Nov 2003, Milan.
48. Invited presentation of “Candidate Market Models and the Calibrated CIR++ Stochastic Intensity Model for Credit Default Swap Options and Callable Floaters” at the 4-th ICS conference on Financial Engineering and Statistical Finance, Hitotsubashi University, Tokyo, 18-19 March 2004.
49. Invited presentation at the ASSIOM day “Il Merito Creditizio e La Valutazione della Probabilità di Default delle Società” of the work “Derivati Sul Credito: Calibrazione e Valutazione con Modelli Strutturali e a Intensità”, Milan, 19 May 2004
50. 2004: Invited two hours lecture (Prof. Corielli) “Interest rate models calibration to market data: The LIBOR MODEL” at the Bocconi Master for Quantitative Finance, May 26, 2004.
51. 2004: Invited three hours lecture (Prof. Szego) “Candidate Market Models and the Calibrated CIR++ Stochastic Intensity Model for Credit Default Swap Options and Callable Floaters”, at the “Summer School in Risk Measurement and Control”, La Sapienza University, Rome, 9 June 2004.
52. 2004: Sixteen hours lecture (4×4) “Interest rate models: theory and practice” for the FINARM Master students of the Milano-Bicocca University, June/July 2004.
53. Presentation (by coauthors Morini and Cousot) of “An empirically efficient cascade calibration of the LIBOR Market Model based only on directly quoted swaption data” and “A comparison between the SSRD model and a market model for CDS options pricing”

- at the “BACHELIER FINANCE SOCIETY Third World Congress”, Chicago, 21-24 July 2004.
54. Invited seminar (Prof. Ortu) at the Bocconi University of Milan, Institute of Quantitative Methods, 19 Oct 2004, “Credit Default Swap Calibration and Derivatives pricing with tractable Stochastic Intensity, Structural and Market Models”
 55. Invited presentation of “CREDIT DEFAULT SWAP CALIBRATION WITH A TRACTABLE STRUCTURAL MODEL” at “The 2nd IASTED International Conference on FINANCIAL ENGINEERING AND APPLICATIONS”, FEA 2004, November 8-10, 2004, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA
 56. 2005: Invited four hours lecture “Stochastic Dynamical Models for interest rate and credit derivatives and Volatility smile, with calibration to market data” at the Master “Corso di alta formazione in Finanza matematica”, 16 Feb 2005, University of Bologna.
 57. Invited seminar (Prof. Pistone) at the Dept. of Mathematics of the “Politecnico di Torino”, “Tractable first-passage-time diffusion models for hybrid products with exact calibration to credit default swaps”, 30 April 2005.
 58. 2005: Invited three hours lecture (Prof. Szego) “Credit Default Swap Calibration and Hybrid products Valuation with new tractable First Passage Structural Models”, at the “Summer School in Risk Measurement and Control”, La Sapienza University, Rome, 13 June 2005.
 59. 2005: Sixteen hours lecture (4×4) “Interest rate *and Credit Derivatives* models: theory and practice” for the FINARM Master students of the Milano-Bicocca University, June/July 2005.
 60. Invited talks “CDS Calibration and counterparty risk pricing with tractable structural models” and “Constant Maturity Credit Default Swap pricing with Market models” at the Summer School in Financial Derivatives, Institute of Mathematical Sciences, Imperial College, London, 22 May 2006.
 61. Invited talk (Prof. Miller, Institute for Numerical Computation and Analysis) “Risk neutral valuation of counterparty risk in risk neutral and equity payoffs”, at the “Numerical Methods for Finance Conference” held in Dublin, June 7-9, 2006.
 62. Invited lecture (Prof. Szego and D’Ecclesia) “Risk Neutral Pricing of Counterparty Risk”, at the “Summer School in Risk Measurement and Control”, La Sapienza University, Rome, 20 June 2006.
 63. Invited seminar (Marco Avellaneda and Peter Carr) “Risk Neutral Valuation Under Counterparty Risk” at Courant Institute, NY University, Oct 19, 2006.
 64. Invited Seminar (Tomasz Bielecki) “Consistent Calibration of CDO tranches with the Generalized-Poisson Loss Dynamical model”, Illinois Institute of Technology, Chicago, October 23, 2006.
 65. Invited Seminar (Roger Lee and Per Mykland) “Consistent Calibration of CDO tranches with the Generalized-Poisson Loss Dynamical model”, University of Chicago, Dept. of Mathematics, October 26, 2006.

66. Invited speaker at the "Mathematics Day" at the University of Padua, March 23, 2007. "Mathematics in Finance and Filtering: The Triumph of Stochastic Differential Equations".
67. Invited speaker "Default Correlation, Cluster Dynamics and Single Names: The GPCL Dynamical Loss Model", 2007 C.R.E.D.I.T. conference, Venice, Sept 27-28 2007.
68. **Invited speaker "Default Correlation, Cluster Dynamics and Single Names: The GPCL Dynamical Loss Model", Credit Conference, Stevanovich Center, University of Chicago, Oct 19-20 2007.**
69. **Invited seminar (Emanuel Derman and Rama Cont), "Interest Rate Models: paradigm shifts in recent years", Columbia University, New York, Nov 5, 2007.**
70. Invited speaker "Default Correlation, Cluster Dynamics and Single Names: The GPCL Dynamical Loss Model", The 14th Annual Center for Applied Probability Workshop on Derivative Securities and Risk Management, Columbia University, Nov 9, 2007.
71. 2007: Invited Seminar "Interest Rate Models: paradigm shifts in the last thirty years", University of Venice, Dec 20, 2007.
72. 2008: Invited speaker, **"Credit Index Options: the no-armedgeddon pricing measure and the role of correlation after the subprime crisis", Second Princeton Credit Risk Conference: The Mathematics of Defaultable Securities, May 23-24, 2008; University of Princeton, NJ**
73. 2009: Invited seminar, "Credit Index Options: the no-armedgeddon pricing measure and the role of correlation after the subprime crisis", Dept. of Mathematics, King's College, London, 20 Jan 2009.
74. 2009. Invited plenary lecture, "Credit index options: the no-armedgeddon pricing measure and the credit crisis", AFMathConf 2009, Actuarial and Financial Mathematics Conference 2009, February 8, Brussels.
75. 2009: Invited seminar, "Counterparty Risk with Stochastic Dynamical Models: Impact of Volatilities and Correlations", Dept. of Mathematics, Imperial College, London, 11 Feb 2009.
76. 2009: Invited talk, "Crisis times five: Politics, Regulation, Products, Data, Models?" CCFEA - Univ. of Essex, February 25, 2009.
77. 2009: Invited speaker, "Credit derivatives pre- and in crisis: dynamical models implying armedgeddon scenarios and extreme losses", Conference on Numerical Methods in Finance, CERMICS, ENPC, Paris, April 17, 2009.
78. 2009. Invited speaker. "Credit derivatives pre- and in crisis: dynamical models implying armedgeddon scenarios and extreme losses", Derivatives Technology Foundation Symposium, Amsterdam, June 11, 2009.
79. 2009. Invited seminar. "Counterparty risk valuation under dynamical models in the presence of wrong way risk". Cass Business School, Nov 19, 2009, London.

80. 2010. Invited speaker at the EUROPLACE Annual Conference, Paris, March 25-26, 2010: “Credit derivatives pre- and in crisis: The importance of properly accounting for extreme scenarios in valuation”.
81. 2010. Panelist in the panel “Challenges of complex products ” at the third annual conference of the Cass-Capco Institute Paper Series on Risk, April 19th, 2010, London.
82. 2010. Invited presentation: “Liquidity’s Lessons: Interpreting Relationships between CDS and Bond Markets”, 2010 Spring General Meeting of the International Association of Credit Portfolio Managers, IACPM, London, May 6th, 2010.
83. 2010. Invited speaker at the Milan Polytechnic Business School, for the event “Le sfide della Crisi per la Finanza Quantitativa”, presenting the talk “Modelli di Credito prima e durante la crisi: Fatti e miti sulla matematica nel caso dei CDO”, June 16, 2010
84. 2010. Invited lecture at the Summer School in Risk Measurement and Control, Rome, July 5–9, 2010. Credit Models pre- and in-Crisis: Past and future roles of Mathematics in Credit Pricing Models.
85. 2010. Invited speaker at the 4th Risk Management Institute Conference, University of Singapore, Singapore, July 15-17, 2010. ”Credit Models pre- and in- Crisis: The importance of including stress scenarios into valuation”
86. 2010. Invited speaker at the C.R.E.D.I.T. conference 2010, “Credit Models pre- and in-Crisis: Impact of Default Clusters and Extreme Events on Valuation”, Sept 30 - Oct 1, 2010, Venice.
87. 2010. Invited speaker at the INAUGURAL MEETING of the SCOTTISH FINANCIAL RISK ACADEMY, Edinburgh, Nov 4, 2010: “Credit Models Pre- and In-Crisis: Extreme Scenarios and Systemic Risk in Valuation”.
88. 2010. Invited Speaker at the Panel “BASEL III AGREEMENT: Methodological challenges”, moderated by Bloomberg journalist Simon Clarke, Bloomberg, London, Nov 26 2011.
89. 2011. Invited Seminar at Brunel University, 12 Jan 2011. Credit Models and the Crisis: The importance of extreme scenarios and systemic risk for valuation.
90. 2011, 5 February. Invited Speaker at the Panel “Market Psychology, Methodology and Basel III”, Imperial Finance Society, London.
91. **2011, 25 Feb. Invited Seminar at the Dept. of Mathematics and the Man Institute at the Univ. of Oxford.** Credit Models and the Crisis: The importance of extreme scenarios and systemic risk for valuation.
92. 2011, 18 March. **Randomness and the Future. Stochastic Differential Equations in finance. Invited talk at the Italian Festival of Science and Arts “Infinitamente”, Verona, Italy.**
93. 2011, 31 March. Invited Discussant for Paul Embrechts at the day “Extreme Weather Events: Risk Management and Modelling Implications”, Imperial Risk Management Laboratory and the Grantham Institute for Climate Change, London.

94. 2011, Plenary speaker at the RiskLab 2011 Conference, Madrid, May 12, "Credit Models and the Crisis: The importance of systemic risk and extreme scenarios in valuation"
95. 2011. Invited speaker at the "Computational Finance and Derivatives, Frontiers of Finance", Warwick Finance Research Institute, Warwick Business School. July 7. Arbitrage free Credit Valuation Adjustment: Impact of closeout conventions, first to default risk, collateral modelling and dynamics.
96. 2011. Invited at a **Dinner at the Royal Society, London**, Oct 27, organized by Terry Lyons (Oxford), for a discussion on the future of Risk Management and of methodology in the Financial Industry, with executives and officials from Morgan Stanley, Nomura, Barcap, JP Morgan, Lloyds TSB, FSA, HM Treasury, Bank of England.
97. 2011. Invited Seminar at City's University, Dept. of Economics, London, Nov 2, "Credit Models and the Crisis: The importance of extreme scenarios and systemic risk in valuation".
98. 2012. Invited Seminar at Imperial College, Dept. of Mathematics, London, February 22. Advanced arbitrage-free valuation of counterparty credit risk.
99. 2012. Invited Seminar at Milan Politecnico, Prof. Barucci, "Advanced counterparty risk pricing and restructuring: CVA, DVA, Closeout, Netting, Collateral, Basel III, systemic risk and Margin Lending". March 29.
100. 2012. Invited speech at the celebration of the International Center for Mathematical Sciences (ICMS), Edinburgh, "Randomness and the future: Mathematics and Stochastic Differential Equations in Finance", 21th Anniversary Speech.
101. 2012. Invited talk at the conference Counterparty Risk Frontiers: Collateral damages, Paris, 4 May 2012 (LES RENCONTRES DES CHAIRES FBF). "Next Generation CVA: From Funding Liquidity to Margin Lending".
102. 2012. Aarhus University short PhD Course, 8 + 8 hours. May 24-25, 2012. Credit Modeling and Counterparty Risk Pricing and Restructuring.
103. **2012. Invited talk at Data Assimilation Workshop, 24-28 Sept 2012, Oxford University. "The Mixture Projection Stochastic Filter in L2 Metrics".**
104. 2013, 23 Jan, Cass Business school conference, invited speaker on Funding Costs valuation.
105. **2013, 28 Mar, Invited lecture at the Newton Institute, Cambridge: Counterparty credit risk, collateral and funding – next generation valuation models under interconnected risks.**
106. **2013, 25 Apr: Cass Business School: Chair and main organizer of the Cass-Capco conference 2013 on Risk in Finance, London**
107. **2013, 28-31 May: Plenary speaker at the 30th French Finance Association conference, Lyon (with Nober Laureate Robert Engle).** Counterparty Credit Risk, Collateral and Funding: The new theory of valuation.

108. 2013, 3-4 June: Invited speaker at the 1st UK Conference on Mathematical Finance, held at King's College London. Optimal trade execution for displaced diffusions.
109. **2013, 10-13 June: Warsaw, plenary speaker at the 2013 AMAMEF conference, Banach center. Credit risk and funding costs with non-linear Feynman Kac methods.**
110. 2013, 18-21 June: Invited lecture on counterparty credit risk and funding costs at the Barcelona Summer School in Financial Engineering.
111. 2013, 9-11 Sept, Technical University of Munich. Invited speaker at the Conference "Risk Management Reloaded". Liquidity inclusive risk measures.
112. **2013, Oct 16, Pisa, Scuola Normale Superiore, invited special lecture for "Colloqui della classe di Scienze"**

Attachment C: Honorary, PhD Students, Scientific Committees, Editor, Boards

1. **Students supervision, 1997–present:** Bsc (Laurea), Master/internship and PhD students tutorship and thesis advisor, including Marco Salcoacci (Bocconi University, Bsc, 1997), Demetrio Maffei (University of Pavia, Internship at Banca Intesa and Master Thesis, 1998), Cristina Capitani (1999, Master thesis from University Milano Bicocca with internship in Banca IMI), Aurelien Alfonsi (ENPC and Ecole Polytechnique, PhD co-supervision, internship at Banca IMI, 2001-2002, co-authored 2 publications), Laurent Cousot (NY University and Ecole Polytechnique, PhD co-supervision, internship at Banca IMI, 1 publication), Eymen Errais (Stanford University, PhD co-supervision, Internship at Banca IMI, 1 publication), Jan Liinev (University of Ghent, cooperation on PhD thesis, 1 publication), Massimo Morini (Master Thesis, University of Pavia, and full PhD supervision, University of Milano Bicocca, 2005, co-authored several publications), Naoufel El-Bachir (2005, University of Reading, internship at Banca IMI, PhD co-supervision, co-authored 1 publication), Marco Avogaro (Master Thesis, Bocconi University, 2006). **Currently supervising 5 PhD students:** Qing Liu (King's College London 2011, then transferred to Imperial College London in 2012), Nicola Pede (King's College London 2012, then transferred to Imperial College London later in 2012), Gabriele Sarais (2013 on), Alexander Gyandzhuntsev (2013 on), Cyril Durand (2013 on).
2. **Scientific Committees:**
3. 2003: Scientific committee of the IV Italian Workshop of Quantitative Finance, Turin, 30-31 January 2003.
4. 2004: Scientific committee of the V Italian Workshop of Quantitative Finance, Siena, 29-30 January 2004.
5. 2004: Scientific Committee of "The 2nd IASTED International Conference on FINANCIAL ENGINEERING AND APPLICATIONS", FEA 2004, November 8-10, 2004, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA.
6. 2005: Scientific committee of the VI Italian Workshop of Quantitative Finance, Milan, 27-28 January 2004.
7. 2006: Scientific committee of the VII Italian Workshop of Quantitative Finance, Perugia, 26-27 January 2006.
8. 2006: Scientific Committee of "The 2nd IASTED International Conference on FINANCIAL ENGINEERING AND APPLICATIONS", FEA 2006, October 9-11, 2006, Massachusetts Institute of Technology (MIT), Cambridge, MA, USA.
9. 2006: Scientific committee of the "Numerical methods for Finance" conference, Institute for Numerical Computation and Analysis, June 7-9, Dublin.
10. 2008: Scientific committee of the "Numerical methods for Finance" conference, Institute for Numerical Computation and Analysis, June 4-6, Dublin.

11. 2009: Scientific committee of the 2nd International Financial Research Forum, “Risk Management and Financial Crisis”, Paris, March 19 -20, 2009.
12. 2009: Scientific committee of the conference “Recent Advancements in the Theory and Practice of Credit Derivatives”, Sept. 28-30, 2009, Nice, France.
13. 2010: Scientific committee of the 2010 C.R.E.D.I.T. Conference, Venice, 29-30 Sept. 2010.
14. 2010: Advisory Board for the Quant Congress Europe 2010, London, November 9-10, 2010.
15. 2011: Advisory Board for the Quant Congress Europe 2011, London.
16. 2011: Scientific Committee of the Annual Italian Workshop in Mathematical Finance, Italy, Universita de L’Aquila.
17. 2012: Advisory Board for the Quant Congress Europe 2012, London
18. 2013: Advisory Board for the Quant Congress Europe 2013, London
19. 2013: Scientific committee of the 2013 C.R.E.D.I.T. Conference, Venice, 26-27 Sept. 2013.
20. **Adjunct and Visiting Professor Roles**
21. 2005-2007: “Professore a contratto” at the Bocconi University for the advanced course “Fixed Income” of the CLEFIN group.
22. January 2008 - July 2010: Visiting Professor at the department of Mathematics at Imperial College, London.
23. January 2009: Adjunct Professor at Essex University, CCFEA, for the advanced Course “CF907-7-SP: Fixed-Income Asset Pricing, Default Risk, and Credit Ratings 2008/09”.
24. **Industry boards and appointments:**
25. (2007-2010) Included in the ”Fitch Academic Advisory Board” upon joining Fitch Ratings. Presented a talk on counterparty risk at the 2007 annual FAAB meeting.
26. 2012-current: Director of the Capco Institute, Capco.
27. **Editorial appointments**
28. (1995-current) Referee for a number of leading journals and magazines in the Mathematical finance/ Financial Engineering/ Systems and Control / Probability communities, including IEEE Transactions on Automatic Control, Systems and Control Letters, Automatica, Finance & Stochastics, Mathematical Finance, Risk Magazine, Quantitative Finance, International Journal of Theoretical and Applied Finance, and Book reviews for Wiley, Academic Press and Risk Books.
29. (2007-on) Managing Editor of the “International Journal of Theoretical and Applied Finance”, World Scientific, with choice of referees, monitoring of the refereeing process, and decision responsibility on acceptance and rejection of submitted manuscripts.

30. 2012-current: Editorial Board of “Applied Mathematical Finance”, Routledge.
31. 2012-current: Editorial Board of “Global Credit Review”, World Scientific.
32. 2012-current: Editor in Chief of the “Journal of Financial Transformation”, Capco.

Attachment D: Lectures for Industry and non-academic Institutions

1. 2002: Six hours lecture (3 + 3) “The new generation of interest rate derivatives models: Calibration of the LIBOR model to market data” and “Volatility smile modelling with the density mixture dynamics: Introduction and Calibration” at the ABI association (“Associazione Bancaria Italiana”), “Corsi del Piano Formativo in Risk Management”, 12 Dec 2002.
2. 2003: Invited lecture at the course “INTEREST RATE MODELLING: Practical calibration and implementation techniques”, Risk Magazine Training Courses, London, 19-20 May 2003.
3. 2003: Three hour lecture “The new generation of interest rate derivatives models: Calibration of the LIBOR model to market data” at the ABI association, “Corsi del Piano Formativo in Risk Management”, 22-23 October 2003.
4. 2003: Sixteen hours (8 + 8) two-days course on “BGM and LIBOR Market Models: Latest Developments and Applications for Enhanced Exotics Pricing”, Marcus Evans Financial Training, London, 27-28 Oct 2003.
5. 2004: Sixteen hours (8 + 8) two-days course on “BGM and LIBOR Market Models: Latest Developments and Applications for Enhanced Exotics Pricing”, Marcus Evans Financial Training, London, 5-6 Apr 2004.
6. 2004: Round table discussion and Invited presentation “CDS calibration and related option pricing: Tractable intensity model and Market models” at the “WBS (World Business Strategy): The Inaugural Fixed Income Conference”, Prague, Czech Republic, 15 -17 Sept 2004
7. 2004: Invited presentation of “New Research In Pricing Credit Default Swaps: The CDS-calibrated SSRD Model and Candidate Market Models for CDS Options” at the 11th Annual Risk Management Forum “New Horizons and Advances In Risk Management, Measurement, Modelling and Capital Allocation” 7-10 Dec 2004, Geneve.
8. 2004: Sixteen hours (8 + 8) two-days course on “BGM and LIBOR Market Models: Latest Developments and Applications for Enhanced Exotics Pricing”, Marcus Evans Financial Training, London, 25-26 Nov 2004.
9. 2005: Invited presentation of “Credit Default Swap Calibration and Equity Swap Valuation under Counterparty Risk with tractable First Passage Structural Models” at the “Equity / Credit Hybrid Products Workshop”, WBS, London, 14-15 March 2005.
10. 2005: Twenty-four hours (8 + 8 + 8) three-days course on “BGM and LIBOR Market Models: Latest Developments and Applications for Enhanced Exotics Pricing”, Marcus Evans Financial Training, London, 13-15 Apr 2005.
11. 2005: Sixteen hours (8 + 8) two-days course on “Advanced Credit Derivatives Models”, Marcus Evans Financial Training, London, 19-20 May 2005.

12. 2005: Invited talk at “ICBI: Global Derivatives and Risk Management 2005”, Paris, 23-25 May 2005. “New Advances In Hybrid Products Pricing. An Extended Black-Cox Type Structural Model Calibrated Exactly To Credit Default Swaps For Hybrid Products Valuation”.
13. 2005: Round Table and Invited presentation “Hybrid Credit/Equity products and Counterparty Risk pricing: Enriching Structural Models Calibration to CDS” and “The uncertain volatility/default barrier first passage time model and its calibration to credit default swaps data” at the second Fixed Income Conference, Prague, 14 -16 Sept 2005.
14. 2005: Invited presentation (Prof. Alan White, head of the scientific committee) of “Credit Default Swap Calibration and Counterparty Risk Pricing with Tractable First Passage Structural Models ” at the Credit Conference “Counterparty Credit Risk”, GRETA Consulting, Venice 22-23 Sept. 2005.
15. 2005: Invited presentation of “Constant maturity credit default swap pricing with market models” at the “Credit Risk Summit Europe”, Risk Magazine, London, 3-5 Oct 2005.
16. 2005: Twenty-four hours (8 + 8 + 8) three-days course on “BGM and LIBOR Market Models: Latest Developments and Applications for Enhanced Exotics Pricing”, Marcus Evans Financial Training, Milan, 2-5 nov 2005.
17. 2005: Invited presentation of “Credit Default Swap Calibration and Equity Swap Valuation with a time varying Black-Cox type Structural Model” at “Equity / Credit Hybrid Products Workshop”, WBS, London, 17-18 Nov 2005.
18. Sixteen hours (8 + 8) two-days course on “Advanced Credit Derivatives Models”, Marcus Evans Financial Training, Milan, 16-17 Feb 2006.
19. Invited lecture (PierPaolo Montana) at the Bank of Italy on “Valuation and Risk Management of Credit Derivatives”, Rome, Feb 22, 2006.
20. Invited presentation of “Risk Neutral pricing of Counterparty Risk” at “Equity / Credit Hybrid Products Workshop”, WBS, Lonon, 6-7 Apr 2006.
21. Twenty-four hours (8 + 8 + 8) three-days course on “BGM and LIBOR Market Models: Latest Developments and Applications for Enhanced Exotics Pricing”, Marcus Evans Financial Training, Milan, 3-5 May 2006.
22. Invited talk at “ICBI: Global Derivatives and Risk Management 2006”, Paris, 9-11 May 2006. “Risk Neutral Valuation under Counterparty Risk”.
23. 2006: Invited presentation “Consistent Calibration of CDO tranches with the GPL dynamical model”, Third Fixed Income Conference, WBS, Amsterdam, 20 -22 Sept 2006.
24. 2006: Invited presentation (Alex Lipton and Andrew Rennie), “Consistent Calibration of CDO tranches with the GPL dynamical model” at “Credit Correlation: Life after Copulas”, Sept. 30 2006, Merrill Lynch, London.
25. Sixteen hours (8 + 8) two-days course on “Credit Derivatives Pricing Models”, Concentric, Borsa Italiana (Italian Stock Exchange), Milan, October 9-10, 2006.

26. Seminar “Risk Neutral Valuation Under Counterparty Risk” at Citigroup Fixed Income Seminar, NY, Oct 17, 2006.
27. Seminar “Risk Neutral Valuation Under Counterparty Risk” at Lehman Brothers, NY, Oct 17, 2006.
28. Seminar “LIBOR Market Model: Calibration, Diagnostics and Approximations” at Bloomberg, NY, Oct 18, 2006.
29. Invited Seminar “Consistent Calibration of CDO tranches with the GPL dynamical model” at the Credit Risk Summit, Standard and Poors and Finance Concepts, NY, October 20, 2006.
30. Invited seminar “Credit Derivatives Products and Models: An Overview”, Quantitative Risk Management, Chicago, Oct 24, 2006.
31. Four hours lecture “Credit Derivatives and Market Models”, London Financial Studies, London, Nov 24, 2006.
32. One day course for World Business Strategies, ”Credit Correlation: Interpolation, extrapolation and dynamics”. London, March 29, 2007.
33. Invited speaker, with two Nobel prizes (Merton and Phelps) at the Third Conference of the Brazilian Mercantile and Futures Exchange, ”Interest Rate Models: paradigm shifts in recent years”, Campos de Jordao, August 22-26, 2007.
34. One day course for World Business Strategies, ”Credit Correlation: Interpolation, extrapolation and dynamics”. London, September 19, 2007.
35. 2007: Invited presentation “Counterparty Risk and Contingent CDS pricing under correlation between default and interest rates”, Fourth Fixed Income Conference, WBS, Amsterdam, 20 -22 Sept 2007.
36. 2007: Invited presentation “Counterparty Risk and Contingent CDS pricing under correlation between default and interest rates”, second Fitch Academic Advisory Board meeting, London, 11 -12 Oct 2007.
37. 2008: Invited presentation “Default Correlation, Cluster Dynamics and Single Names: the GPCL Dynamical loss model”, BundesBank, Frankfurt, Feb 4, 2008.
38. 2008: Invited presentation “Interest Rate Models: paradigm shifts in the last thirty years”, European Central Bank, Frankfurt, Feb 6, 2008.
39. 2008: Two hours lecture on CDS, CDS Options, CMCDS and Contingent CDS pricing with intensity and structural credit models. Incisive Media, Risk Magazine Training Course ”Credit risk modeling for tomorrows market”, London, March 10.
40. 2008: Two hours lecture on Risk neutral valuation of counterparty risk and Contingent CDS as hedging instruments. Incisive Media, Risk Magazine Training Course ”Counterparty Credit Risk Management in OTC Derivatives”, London, April 22.

41. 2008: Two hours lecture on Risk neutral valuation of hybrid interest-rate credit derivatives including counterparty risk and Contingent CDS. Incisive Media, Risk Magazine Training Course Practical Calibration and Implementation Techniques for Interest Rate Modelling, London, June 10.
42. 2008: Invited presentation “Counterparty Risk with Stochastic Dynamical Models: Impact of Volatilities and Correlations”, Fifth Fixed Income Conference, WBS, Budapest, 26 Sept 2008.
43. 2009: Invited lecture “Counterparty Risk with Stochastic Dynamical Models: Impact of Volatilities and Correlations ”, Incisive Media, Risk Magazine Training Course Interest Rate Modeling in a low rate environment”, May 12, 2009, London.
44. 2009: Invited lecture “PRICING OF INFLATION-INDEXED DERIVATIVES”, Incisive Media, Risk Magazine Training Course Interest Rate Modeling in a low rate environment”, May 12, 2009, London.
45. 2009. Sixteen hours (8 + 8) two-days course on “Credit Derivatives: Products and Models”, Concentric, Milan, June 18-19, 2009.
46. 2009: Invited plenary lecture “Bilateral counterparty risk valuation with hybrid models across classes: impacts of volatilities and correlations”, Quant Congress Europe 2009, Incisive Media, Risk Magazine Conference, Nov 4, 2009, London.
47. 2010. Invited lecture on Counterparty Risk valuation and wrong way risk at the “Counterparty Credit Risk: Credit Valuation Adjustment, Stress Testing & Modelling” Workshop, WBS, London, 22nd - 24th March 2010
48. 2010. Invited speaker at the 6th Fixed Income Conference, WBS, Madrid, Sept. 23-24, 2010. “Credit Models and the Crisis or: How I learned to stop worrying and love the CVA and CDOs”
49. 2010. Panel Moderator at the 6th Fixed Income Conference, WBS, Madrid, Sept. 23-24, 2010. Panel: “Credit Models and the Crisis: CVA, CDOs, FX Effects, Liquidity and Hybrid Models”.
50. 2010. Sixteen hours (8 + 8) two-days course on “Credit Default and Counterparty Risk Models for Valuation and Risk Management”, Concentric, Milan, October 4-5, 2010.
51. 2010. Invited (plenary) speaker at Credit Risk Summit 2010, Incisive Media, London. “A survey of liquidity modelling in the CDS market”. October 14, 2010, London.
52. 2010. 1-day training course (8 hours) at the Credit Risk Summit 2010: “Credit Models and Counterparty Risk Valuation in Crisis ”, October 15, 2010, London.
53. 2010. Invited (plenary) speaker at the Quant Congress, London: “Credit models pre- and in- crisis: the importance of extreme scenarios in valuation”. November 9, 2010, London.
54. 2010. Quant Congress London: Champagne Roundtable Speaker, Credit Models table, Nov 10, 2010, London.

55. 2011. One Day training course for Marcus Evans. Counterparty Risk Valuation: Bilateral CVA, Netting, Collateral and Wrong Way Risk. London, 26 Jan 2011.
56. 2011. Invited Speaker at the 2nd Annual Marcus Evans CVA Conference held in London on Jan 28, 2010. "Arbitrage-free valuation of Counterparty Risk across asset classes: interest rates, commodities and credit"
57. 2011. Invited speaker at the Global Derivatives 2011 Conference, Paris, April 14. Liquidity Modelling For Credit Default Swaps and Bonds.
58. 2011. One day Full Day Training Masterclass "Counterparty Valuation Adjustment (CVA) and Credit Models In Crisis" at the Global Derivatives 2011 Conference, Paris, April 15.
59. 2011. Two days training course for World Business Strategies in Frankfurt, "Credit Modelling and Counterparty Valuation Adjustment after the Credit Crunch", June 9-10.
60. 2011. Invited Speaker at the 2011 WBS Fixed Income Conference, Berlin, "Second Generation Credit Valuation Adjustment", October 6.
61. 2011. CVA and Securitization Panel Moderator at the 2011 WBS Fixed Income Conference, Berlin, October 7.
62. 2011. Quant Congress Europe, One day training course on "CVA and Counterparty Risk: New challenges", Nov 7.
63. 2011. Quant Congress Europe, Plenary Talk. "New Generation CVA", Nov 8.
64. 2011. Invited at an industry dinner on CVA organized by SunGard at the Royal Stock Exchange, London, Nov 9, together with Executives from BNP Paribas, Royal Bank of Scotland, Barcap, UBS, Nomura, Unicredit, Commerzbank, WestLB.
65. 2011. Invited at an industry dinner organized by NumeriX, Chicago, Nov 15, together with Executives from Morgan Stanley, NumeriX, Bloomberg.
66. 2011. Invited Speaker at the Inaugural Global Derivatives USA Conference, Chicago, Nov 15, "New Generation CVA: Closeout, First to Default Risk, Collateral, Re-hypothecation and Funding".
67. 2012. Invited Seminar at UniCredit Bank, London: Second Generation Valuation Adjustments, January 12, 2012.
68. 2012. Invited plenary talk at the Risk Annual Summit, London, March 22. Second Generation CVA Modelling.
69. 2012. Invited moderator for the roundtable at the WBS-CVA Conference, March 22: Implementation, Trading, Liquidity, Modeling and Funding.
70. 2012. One day training course at the WBS-CVA Conference: New Generation Counterparty Risk modeling, March 21-23.
71. 2012. Invited talk at Global Derivatives, ICBI, Barcelona. Restructuring Counterparty Credit Risk. April 19.

72. 2012. Invited Chair at Infoline Conference Panel, London, May 15-18 2012. "Valuation of Financial Instruments: Counterparty Credit Risk".
73. 2012. Two days training course, 8+8 hours, Concentric 2012: 17-18 May 2012, Milan. Counterparty Credit Risk and CVA Pricing: a risk neutral evaluation framework.
74. 2012. Invited one day training course, Risk Minds USA Conference, June 8, 2012, Boston. "Innovations in CVA Modeling".
75. 2012. Two-days training course for the Professional Risk Management Association, PRMIA, June 21-22, 2012, Munich. "CVA: Credit Models and Advanced Counterparty Risk Pricing and Restructuring".
76. 2012. Invited talk at Marcus Evans, 2nd Conference on Derivatives Funding and Valuation. "Closeout and Restructuring in Counterparty Risk with Funding". London, Sept 18.
77. 2012. Plenary talk at the 2013 Quant Congress Europe, "A critique of funding and counterparty risk valuation: new challenges", London, Oct 9, 2012.
78. 2012. Invited plenary talk at the "OIS Discounting" Infoline conference, London, "Overcoming the Challenge of Funding and the Interaction with Valuation", London, 24 Oct.
79. 2013, 10-11 Jan, Invited seminar at Natixis Bank on Counterparty Credit Risk, Collateral and Funding, Paris.
80. **2013, 31 Jan, Invited Seminar on Liquidity Risk at the Bank of England, Liquidity adjusted risk measure with random holding period**
81. 2013, 7-8 Feb, CVA trading panel at Marcus Evans CVA conference, London
82. 2013, 21 Feb, CVA Collateral and Funding Panel, Bloomberg, London.
83. 2013, 20 March: The 2nd CVA Conference: The FVA Debate, Capital Charges, Computation, CCR & Regulations. London
84. 2013, 15-19 Apr: Global Derivatives, Amsterdam. Invited talk on Consistent modeling of Funding Costs, Credit and Collateral.
85. 2013, 15-19 Apr: Global Derivatives, Amsterdam. 1 day training course on CVA, DVA, FVA and beyond: towards consistent global valuation.
86. 2013, 14-15 May: Infoline conference, Valuation of financial instruments, London. Plenary talk on "Credit Collateral and Funding: A consistent non-separable approach".