Curriculum Vitae Serge Goossens

Executive Summary

Serge Goossens is a senior quantitative analyst working on credit derivatives and correlation modelling in the Front Office of Dexia Bank. Currently he focuses on mark to model of hard to value distressed assets and on restructuring the capital structure of large portfolios. Serge holds a M.Sc. in Engineering and a Ph.D. from the Faculty of Engineering of the K.U.Leuven and a Master of Financial and Actuarial Engineering degree obtained from the Leuven School of Business and Economics. He has published a number of papers and he has presented at conferences worldwide. Serge has written the Wiley Finance book “The Art of Credit Derivatives Demystifying the Black Swan” together with João Garcia. Some of his recent work can be consulted on www.sergeandjoao.com.

Personalia

- Name: Serge E. L. Goossens
- E-mail: Serge.Goossens@gmail.com
- Nationality: citizen of Belgium
- Gender: male

Education: Faculty of Engineering, K.U.Leuven

- Master of Science in Engineering, Computer Science, Numerical Analysis & Applied Mathematics: magna cum laude (June 1995)
    - S. Goossens. Computation of Compressible Flows: Parallelisation and Preconditioning. Master's thesis, Department of Computer Science, Faculty of Engineering, K.U.Leuven, Leuven, Belgium, June 1995.
- Ph.D. in Computer Science: summa cum laude (June 2000)
    - S. Goossens. Krylov Convergence Acceleration and Domain Decomposition Methods for Nonmatching Grids. Ph.D. thesis, Department of Computer Science, Faculty of Engineering, K.U.Leuven, Leuven, Belgium, June 2000.

Education: Leuven School of Business and Economics

- Master of Financial and Actuarial Engineering: summa cum laude (June 2008)
    - S. Goossens. One Factor Models for Credit Derivatives: from iTraxx to TABX. M.F.A.E. thesis, Leuven School of Business and Economics, K.U.Leuven, Leuven, Belgium, June 2008.

Language Skills

- Dutch: mother tongue
- English: high proficiency (since age 13, working language)
- French: fluent (since age 10, 3 years at university, working language)
- German: basic conversation skills (2 years in high school)
- Spanish: basic conversation skills (2 years at university)

Professional Experience: Dexia

- Dexia Bank Belgium, Treasury and Financial Markets Front Office, Credit and Correlation Desk: Senior Quantitative Analyst since September 2006
- Credit Derivatives Modelling, Research & Development, Evaluation and Pricing
- Trading strategies & Hedging analysis and feasibility
- Due diligence studies
- Mark to Model of hard to value distressed assets
- Restructuring the capital structure of large portfolios
- Dexia Workshops
    - Interest Rate and Inflation Modelling (Mercurio & Moroni), April 2006
    - Monte Carlo (Glasserman), May 2007
    - Trading Volatility in Equity Markets: A Quantitative Approach (Avellaneda), May 2008
    - A Practical Guide to run a Fixed Income (swaps) Business (Hagan), May 2009

Book

- Garcia, J. and Goossens, S. The Art of Credit Derivatives. Demystifying the Black Swan, Wiley Finance, October 2009 (ISBN-10: 0470747358; ISBN-13: 978-0470747353)

Publications

- Garcia, J. and Goossens, S. Explaining the Lévy base correlation smile, Risk, July 2008: 84-88
- Garcia, J., Goossens, S. and Schoutens, W. Let's jump together: pricing credit derivatives, Risk, September 2008: 130-133
- Garcia, J., Goossens, S. and Schoutens, W. Lévy Base Correlation, Wilmott Journal, 1(2), April 2009
- Lévy Base Correlation Explained
- One Factor Models for TABX
- Dynamic Credit Portfolio Management: Linking Credit Risk Systems, Securitization and Standardised Credit Indices
- Lévy Base Correlation Mapping
- Correlation from Collateral to Tranches

Conference Presentations

- Risk: USA Conference (05/11/2007)
    - Lévy Models for Credit Derivatives: Dynamic Models for Credit CPPI and CPDO & Lévy Base Correlation for CDOs and TABX
- Risk: Europe Conference (22/04/2008)
    - Standard Gaussian vs. Lévy models for Credit Derivatives from iTraxx to TABX (with J. Garcia)
- ICBI: Global Derivatives Conference (22/05/2008)
    - Pricing TABX for the ABS Correlation Market (with J. Garcia)
- Risk: Quant Congress USA (08/07/2008)
    - Lévy Base Correlation smiling from iTraxx to TABX (with J. Garcia)
- Marcus Evans: 12th Annual Capital Allocation Conference (09/09/2008)
    - Active Credit Portfolio Management and the Securitisation Business Model (with J. Garcia)
- WBS: 5th Fixed Income Conference (25/09/2008)
    - Elements for a Successful Securitization Business Model (with J.Garcia)

- Marcus Evans: 4th Annual Structured Products in Private Banking Industry (10/10/2008)
    - Dynamic Credit Exposure and Portfolio Management (with J. Garcia)
- Jacob Fleming: 2nd Annual Collateral Management Conference (10/10/2008)
    - Dynamic Credit Exposure and Portfolio Management (with J. Garcia)
- Risk: Credit Risk 2008 (28/10/2008)
    - Dynamic Credit Exposure and Portfolio Management (with J. Garcia)
- Marcus Evans: Mitigating Pricing Model Risk (28/11/2008)
    - Lévy Models for Credit Derivatives (with J. Garcia)
- GARP: Annual Risk Management Convention (10/02/2009)
    - The Future and Risks of the Banking Model (with J. Garcia)
- Jacob Fleming: 5th Annual CEE Credit Risk Management & Debt Collection (20/03/2009)
    - Dynamic Credit Portfolio Management and the Securitization Business Model (with J. Garcia)
- Risk: Europe Conference (04/06/2008)
    - Standardised Credit Indices and Credit Derivatives for Corporates (with J. Garcia)
- Marcus Evans: 2nd Annual Credit Risk Portfolio Management (26/06/2009)
    - Credit risk models: Practical implementation (with J. Garcia)
- ICBI: Ri$kCapital 2009 (01/07/2009)
    - Counterparty Risk (with J. Garcia)
    - Dynamic Credit Portfolio Management (with J. Garcia)
- Risk: Quant Congress USA (15/07/2009)
    - Pricing distressed CDOs and portfolios (with J. Garcia)
- Marcus Evans: Capital Management and Allocation (08/09/2009)
    - Dynamic Credit Portfolio Management (with J. Garcia)
- Risk: Credit Risk 2009 (14-16/10/2009)
    - Correlation from Collateral to Tranches (with J. Garcia)

Conference Workshop

- Risk: Europe Conference (24/04/2008)
    - Credit ALM and Standard Credit Indices: the missing link between the securitisation activity and the credit crunch (with J. Garcia)
- GARP: European Risk Congress (18/05/2009)
    - Super Models? The changing role of quantitative techniques in the new financial world. (with J. Garcia)
- ICBI: Ri$kCapital 2009 (03/07/2009)
    - Risk Management of Credit Portfolios (with J. Garcia)

Training Course Presentations

- Risk: Advanced Techniques for Pricing and Hedging Credit Derivatives and Credit Hybrids (16-18/04/2007)
    - Single Name Credit Modeling (with J. Garcia)
    - Building Models for Pricing CDOs using the Standard Market Approach and Lévy Models (with J. Garcia)
- Risk: Correlation Trading and Risk Management (01/06/2007)
    - Lévy vs Gaussian for CPPI (with J. Garcia)
- Marcus Evans: Pricing and Valuation of Structured Credit (21/06/2007)

    - Lévy Base Correlation (with J. Garcia)
    - Lévy Models for CPPI & CPDO (with J. Garcia)
- Risk: Pricing and Modeling of CDOs & Structured Credit Products (04/09/2007)
    - Dynamic Models for Spreads (with J. Garcia)
    - Development of the ABS and Loan Markets: ABX and LevX/LCDX (with J. Garcia)
- Risk: Pricing and Risk Management of Synthetic ABS (30/10/2007)
    - Single Name Credit Modeling (with J. Garcia)
    - Synthetic Indices: comparing Gaussian versus Lévy for ABX and TABX (with J. Garcia)
    - Synthetic Indices: ABX, CMBX and TABX (with J. Garcia)
- Risk: Credit Risk Modeling for Tomorrow's Market (11/03/2008)
    - From Credit Risk Systems to Stress Tests and Credit ALM: On the heart of the Credit Crunch (with J. Garcia)
    - Implying Market Correlations from Credit Derivatives Indices (with J. Garcia)
- WBS: Latest Developments: After the Credit Crunch: Credit Derivatives Pricing, Hedging, Modelling Trading Techniques (18/03/2008)
    - One-factor models for Credit Derivatives: from iTraxx to TABX
- Risk: Effective Pricing and Structuring of Loan CDS (16/06/2008)
    - LevX and LCDX indices (with J.Garcia)
- Marcus Evans: 2nd Annual Pricing and Valuation of Structured Credit (17/06/2008)
    - Insights in Correlation implied from Standard Credit Indices (with J.Garcia)
- Risk: Valuing Mortgage Backed Securities (18/07/2008)
    - ABX, TABX and portfolios of MBS's (with J.Garcia)
- Risk: Measuring and Mitigating Counterparty Credit Risk (13/07/2009)
    - Calculating economic and regulatory capital (with J.Garcia)
    - Using Credit Default Swaps to hedge counterparty risk (with J.Garcia)
- Risk: Valuing Assets in Illiquid Markets (25/09/2009)
    - Market overview: challenges faced by institutions in Europe (with J. Garcia)

Event Attendance

- Tower Group: Governance, Risk Management & Compliance (13-15/05/2009)

Referee Activities

Int. Journal: Referee for Risk Magazine

Addendum CV Serge Goossens

Professional Experience: CoWare

- CoWare, Strategic Core Technologies, Senior Staff Research Engineer: 01/09/2000 - 31/08/2006
- New Product Definition Development & Project Management
- Technology Partnership Agreements with Customers & Investors
- Pre-sales Technology Evaluation
- OSCI System C Language Reference Manual (IEEE P1666)
- Workshops
    - VHDL Training Course, IMEC, Belgium, September 2000
    - Chip Synthesis Course, Synopsys, UK, May 2001
    - Formal Verification, Esterel Technologies, France, September 2001

Conferences & Exhibitions

- Design Automation Conference (DAC), June 2001
- Design Automation and Testing in Europe (DATE), February 2004
- Design Automation and Testing in Europe (DATE), March 2006

U.S. Patents

- USSN: 10/700,600 Method of Protocol Conversion (Sole inventor, 3 Nov. 2003)
- USSN: 10/976,402 Transaction Level Model Synthesis (Sole inventor, 28 Oct. 2004)

Publications

- T. Kogel, M. Doerper, A. Wieferink, R. Leupers, G. Ascheid, H. Meyr and S. Goossens. A Modular Simulation Framework for Architectural Exploration of On-Chip Interconnection Networks. The First IEEE/ACM/IFIP International Conference on HW/SW Codesign and System Synthesis. CODES+ISSS 2003, October 1-3, 2003, Newport Beach, CA, USA.

Professional Experience: K.U.Leuven

- Katholieke Universiteit Leuven, Department of Computer Science, Ph.D. researcher & teaching assistant numerical analysis: 01/09/1995 - 31/08/2000
- Scholarship: Flemish Institute for the Promotion of Scientific and Technological Research in Industry (IWT, Brussels, Belgium)
- Large Scale Parallel Numerical Simulation of Fluid Flow Euler/Navier-Stokes (air), Shallow Water Equations (water)
- Workshops
    - Introduction to Computational Fluid Dynamics, VKI LS 1996
    - 27th Computational Fluid Dynamics, VKI LS 1996-06
    - Domain Decomposition Methods (B. Smith), December 1996
    - Stochastic Calculus (T. Mikosch), May 1998

Collaborations

- Interuniversity Microelectronics Center (IMEC, Belgium) C code for finite automata (Aug. 1993)
- von Karman Institute (VKI, Belgium) C code for Euler/Navier-Stokes fluid flow (Aug. - Sep. 1994)
- WL Delft Hydraulics (The Netherlands) Fortran code for Shallow Water Equations fluid flow (Apr. - Jun. 1996)
- Dept. Computer Science, University of Colorado at Boulder (U.S.A.) C code for numerical solution of partial differential equations on nonmatching grids (Aug. 1997)
- Dept. Computer Science, University of Colorado at Boulder (Sep. 1998)
- Dept. Computer Science, University of Colorado at Boulder (Aug. 1999)

Publications

- S. Goossens, K. Tan, and D. Roose. A Krylov-Schwarz iterative solver for the Shallow Water Equations. Physics and Chemistry of the Earth, 23(5/6):485-490, 1998.
- S. Goossens and D. Roose. Ritz and Harmonic Ritz Values and the Convergence of FOM and GMRES. Numerical Linear Algebra with Applications, 6(4):281-293, 1999.
- S. Goossens, E. Issman, G. Degrez, and D. Roose. Block ILPU(0) Preconditioning for a GMRES based Euler/Navier-Stokes solver. In H. Liddell, A. Colbrook, B. Herzberger, and P. Sloot, editors, High Performance Computing and Networking '96, Lecture Notes in Computer Science 1067, pages 619-626. Springer-Verlag, 1996.
- S. Goossens, K. Tan, and D. Roose. An efficient FGMRES solver for the Shallow Water Equations based on Domain Decomposition. In P. Bjorstad, M. Espedal, and D. Keyes, editors, Domain Decomposition Methods in Sciences and Engineering: 9th International Conference, pages 350-358. Domain Decomposition Press, 1998.
- S. Goossens and D. Roose. Harmonic Ritz Values and the Convergence of GMRES. In J. Wang, M. B. Allen, B. M. Chen and T. Mathew, editors, Iterative Methods in Scientific Computation: Third IMACS International Symposium on Iterative Methods in Scientific Computation, Jackson Hole, Wyoming, USA, pages 33-38. IMACS, 1998.
- S. Goossens, X.-C. Cai, and D. Roose. Overlapping Nonmatching Grids Method: some Preliminary Studies. In J. Mandel, Ch. Farhat, and X.-C. Cai, editors, Domain Decomposition Methods 10, Contemporary Mathematics, pages 254-261. AMS, 1998
- S. Goossens and X.-C. Cai. Lower Dimensional Interpolation in Overlapping Composite Mesh Difference Methods. In C.-H. Lai, P. Bjorstad, M. Cross, and O.

Widlund, editors, Domain Decomposition Methods in Sciences and Engineering: 11th International Conference, pages 248-255. Domain Decomposition Press, 1999.

- S. Goossens and X.-C. Cai. Mortar Projection in Overlapping Composite Mesh Difference Methods. In T. Chan, T. Kako, H. Kawarada, and O. Pironneau, editors, Domain Decomposition Methods in Sciences and Engineering: 12th International Conference, pages 117-124. Domain Decomposition Press, 2000.

Conference Presentations

- High Performance Computing and Networking: June 1996
- 9th Conference on Domain Decomposition Methods: June 1996
- NATO Advanced Study Institute: "Algorithms for Sparse Large Scale Linear Algebraic Systems: State of the Art and Applications in Science and Engineering": July 1996
- 3rd IMACS International Symposium on Iterative Methods in Scientific Computation: July 1997
- 10th Conference on Domain Decomposition Methods: August 1997
- Copper Mountain Conference on Iterative Methods: April 1998
- 11th Conference on Domain Decomposition Methods: July 1998
- Copper Mountain Conference on Multigrid Methods: April 1999
- International Conference on Preconditioning Techniques for Large Sparse Matrix Problems in Industrial Applications: June 1999
- 5th US National Congres On Computational Mechanics: August 1999
- 12th Conference on Domain Decomposition Methods: October 1999
- Copper Mountain Conference on Iterative Methods: April 2000

Invited Talks

- University of Colorado at Boulder: July 1997 (X.-C. Cai)
- NASA ICASE: July 1999 (D. Keyes)
- Old Dominion University: July 1999 (D. Keyes)

Conference Attendance

- A Numerical Analysis Conference in Honour of Olof B. Widlund on the Occasion of his 60th birthday: January 1998
- NATO Advanced Study Institute: "Error Control and Adaptivity in Scientific Computing": August 1998

Referee Activities

- Referee for Journal of Computational and Applied Mathematics
- Referee for SIAM Journal on Scientific Computing
- Referee for Proceedings of International Conference on Domain Decomposition Methods