

FRANCESCA BIAGINI

Citizenship: Italian, German; Marital Status: Married, 1 Child

Languages: Italian, English, French, German

Date of Birth: 31.7.1973

Department of Mathematics, Ludwig-Maximilians-Universität

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CURRENT RESEARCH INTERESTS

Model uncertainty for financial and insurance markets, mathematical foundations for application of machine learning in financial mathematics, mathematical models for insurance markets, mathematical modeling of asset price bubbles.

ACADEMIC CAREER

Since November 2009: Full professor in Applied Mathematics (Chair, W3-Professorin in angewandter Mathematik), at the University of Munich (Ludwig-Maximilians Universität, LMU), Germany.

December 2016: Offer of the Chair in Financial Mathematics (Ruf auf eine W3-Professur in Finanzmathematik), from the University of Wien, Austria. Refused.

April 2008: Offer of the Chair in Financial and Insurance Mathematics (Ruf auf eine W3-Professur in Versicherungs- und Finanzmathematik), from the Leibniz Universität Hannover, Germany. Refused.

October 2005 - October 2009: Associate Professor in Applied Mathematics (W2-Professorin in Angewandter Mathematik), Department of Mathematics, Ludwig-Maximilians-Universität München (LMU), Germany.

January 1999 - September 2005: Ricercatore (Assistant Professor) in Probability and Statistics, Department of Mathematics, University of Bologna.

EDUCATION

November 2001: PhD, Perfezionamento in Mathematical Finance (mark: 70/70 cum laude) Scuola Normale Superiore of Pisa, Italy. Thesis title: *Quadratic hedging approach for interest rate models with stochastic volatility*. Thesis adviser: Prof. Maurizio Pratelli.

October 1997: Degree in Mathematics from Scuola Normale Superiore of Pisa (mark: 70/70 cum laude), Italy.

October 1996: Laurea in Mathematics (mark: 110/110 cum laude) University of Pisa, Italy. Thesis title: *Toric Varieties*. Thesis adviser: Prof. Margherita Galbiati.

July 1992: Diploma of Liceo Scientifico (mark: 60/60), High School Pistoia, Italy.

SELECTED SERVICES at LMU

Since 2025: Coordinator of the Erasmus Mundus Programm joint Master programme “Greening energy market and finance”.

Since 2011: Coordinator of several exchange programs (Double Degree in Financial and Insurance Mathematics, Double Degree in Green Finance, some Erasmus exchanges) at the Department of Mathematics of the University of Munich.

since 2011: Head of the examination boards (Prüfungsausschuss) for the Bachelor/Master study program in Financial and Insurance Mathematics.

Since 2007: DAV (Deutscher Aktuar Verein, German Actuarial Association) korrespondentin.

2007 - 2019: Mentorin for the Faculty of Mathematics, Statistics and Informatics of the University of Munich: supervisor and coach of a group of mostly talented young female researchers.

2007 - 2019: Member of the Committee for Scientific Control of the University of Munich.

GOVERNANCE

October 1, 2019 - September 30, 2025: Vice-President of LMU for International Affairs and Diversity.

June 2011 - January 2017, October 2018 - September 2019: Head of the Department of Mathematics.

HONOURS

Since 2019: Member of the **Kuratorium of the Max Planck Institutes** for Biological Intelligence, for Physics and for Psychiatry.

January 1, 2022 - December 31, 2023: **Past President** of the **Bachelier Finance Society**.

January 1, 2020 - December 31, 2021: **President** of the **Bachelier Finance Society**.

January 1, 2018 - December 31, 2019: **Vice-President** of the **Bachelier Finance Society**.

January 1, 2017 - December 31, 2019: **Secretary** of the **SIAM Activity Group on Financial Mathematics and Engineering**.

June 2010 - July 2013, September 2015 - September 2018: **Professor II at the Center for Mathematics and Applications (CMA)**, University of Oslo, Norway.

2015: Member of the **scientific committee** of the 9th World Congress of the Bachelier Finance Society.

January 2013 -December 2014: I have been appointed by the Italian Ministry of Research as foreign member in the Committee for the National Scientific Qualification for the scientific sector Mathematical Methods in Economics and in Financial and Actuarial Sciences.

January 2012 - December 2015: Member of the **Council of the Bachelier Finance Society**.

Since Spring 2010: Member of the **Executive Board of the Munich Risk and Insurance Center (MRIC)** at the University of Munich.

AWARDS

2024: **Cavaliere della Stella d'Italia**, from the **President of the Italian Republic**.

2019: **Prinzessin Therese von Bayern Preis 2019**.

2016: **Zonta Clubpreis 2015 für herausragendes Management von Karriere und Familie**, Zonta Club München.

2011: **Bruti-Liberati Visiting Fellowship**, University of Technology, Sydney, Australia.

ACADEMIC ACTIVITIES

CONFERENCES ORGANIZED

*July 2025: **Frontiers in Mathematical Finance: between Theory and Applications.*** Meet and greet event for students and practitioners, in collaboration with the Italian Consulate.

*October 2023: **Conference Celebrations for the 200th anniversary of Enrico Betti.*** In collaboration with the Scuola Normale Superiore of Pisa, Italy.

*October 2023: **Oberwolfach workshop New Challenges in the Interplay between Finance and Insurance.*** In collaboration with Thorsten Schmidt, Hans-Jörg Albrecher, Beatrice Acciaio.

*November 2022: **Oberwolfach workshop New Challenges in the Interplay between Finance and Insurance.*** Online Version. In collaboration with Thorsten Schmidt, Monique Jeanblanc, Hans-Jörg Albrecher.

*August 2022: **2022 Gene Golub SIAM Summer School.*** In collaboration with Agostino Capponi, Sebastian Jaimungal, Stefan Sturm.

*June 4 - 7, 2019: **SIAM Conference on Financial Mathematics and Engineering (FM19),*** part of the organising committee.

*September 27 - 29, 2017: **First GSSI Workshop on Mathematical Finance,*** Gran Sasso Science Institute (GSSI). In collaboration with J. Fouque, M. Frittelli, P. Guasoni, P. Protter, M. Soner and GSSI.

*June 23, 2017: **Recent Advances in Model Uncertainty,*** LMU, Munich. In collaboration with T. Meyer-Brandis, C. Schmalzing.

*October 5 - 7, 2016: **International Workshop: Whats new in networks? Building bridges between computational, mathematical and statistical network analysis,*** Center of Advanced Studies, LMU, Munich. In collaboration with G. Kauermann, C. Schmalzing, T. Seidl, R. Zimmer.

*May 24, 2013: **Workshop on Financial Bubbles,*** LMU, Munich. Invited lecturers: H. Föllmer, D. Hobson, P. Protter, J. Scheinkman. In collaboration with H. Föllmer and P. Protter.

*October 27-28, 2011: **Autumn School 2011: Mathematical methods in finance and insurance,*** LMU, Munich. Invited lecturers: H. Albrecher, J. Teichmann. In collaboration with T. Meyer-Brandis and G. Svindland.

*October 21-22, 2010: **Autumn School 2010: Mathematical methods in risk management and finance,*** LMU, Munich. Invited lecturers: R. Cont, H. Föllmer. In collaboration with T. Meyer-Brandis.

*February 13, 2009: **Winter School 2009: Modeling risk in electricity and other energy markets,*** LMU, Munich. Invited lecturers: R. Carmona, T. Meyer-Brandis.

July 5-6, 2007: Summer School 2007: Quantitative Risk Management, LMU, Munich. Invited lecturers: P. Embrechts, R. Frey.

June 29-30, 2006: Summer School 2006: Risk Measurement and Optimal Investment, LMU, Munich. Invited lecturers: F. Delbaen, C. Rogers. In collaboration with D. Filipović.

SELECTED TALKS AT UNIVERSITIES and CONFERENCES

Conference in honor of the 80th Birthday of Prof. Bernt Øksendal, **University of Oslo**, August 2025: “When defaults cannot be hedged: an actuarial approach to XVA calculations via Local Risk-Minimization”, *invited speaker*.

Bachelier Finance Society World Congress, July 2024, Rio de Janeiro: “Deep learning for asset price bubbles detection”, *plenary speaker and opening of the Congress*.

Conference Stochastic optimal control in Economics, Finance, and Learning theory. **ETH Zurich**, June 2023: “Deep learning for superhedging prices approximation and asset price bubbles detection”, *plenary speaker*.

Risk and Uncertainty meeting, **University of Oxford** (virtual), March 2021: “Reduced-form setting under model uncertainty with non-linear affine intensities”.

SIAG/FME virtual seminars series, October 29, 2020: “Reduced-form setting under model uncertainty with non-linear affine intensities”.

International Workshop on Applied Probability, IWAP 2018 Budapest, June 20, 2018: “Reduced-form framework under model uncertainty”, *invited speaker*.

University of Southern California, Los Angeles, USA, February 2018: “Financial Asset Bubbles under Model Uncertainty”.

Final Conference - Stochastic Dynamical Models in Mathematical Finance, Econometrics, and Actuarial Sciences, Lausanne, May 30, 2017: “Financial Asset Bubbles under Model Uncertainty”, *invited speaker*.

Workshop “Young Researchers in Robust Mathematical Finance”, **ETH Zurich**, April 27, 2017: “Financial Asset Bubbles under Model Uncertainty”, *invited speaker*.

SIAM Conference on Financial Mathematics & Engineering, Austin, USA, November 2016: “Mathematical models for financial asset bubbles”, *plenary speaker*.

INdAM (Istituto Nazionale di Alta Matematica) Day, University of Perugia, Italy, June 8, 2016: “Mathematical models for financial asset bubbles”, *invited speaker*.

7th General AMaMeF and Swissquote Conference, Lausanne, Switzerland, September 2015: “The long-term swap rate and a general analysis of long-term interest rates”, *plenary speaker*.

Labex Louis Bachelier - **SIAM-SMAI Conference on Financial Mathematics**: Advanced Modeling and Numerical Methods, Paris, France, June 2014: “Mathematical models for the formation of financial bubbles”, *invited speaker*.

Columbia University, New York, USA, December 2013: “Mathematical models for the formation of financial bubbles”.

QMF 2012 Conference, Cairns, Australia, June 2012: “Hedging and valuation in hybrid markets” **Bruti-Liberati Lecture**.

EDITORIAL ACTIVITY

Since August 2013: Associate Editor for the journal *Stochastic Analysis and Applications*.

Since 2017: Associate Editor for the journal *Rendiconti di Matematica*.

Since 2018: Associate Editor for the journal *Review of Derivatives Research (REDR)*. **Associate Editor** for the book series **Springer Finance**.

Since 2020: Associate Editor for the journal **Mathematical Finance**.

Since 2022: Associate Editor for the journal *Decisions in Economics and Finance*.

REFEREE FOR PEER REVIEWED JOURNALS

I have been reviewer for the following journals: *Annals of Probability, Annals of Applied Probability, Applied Mathematics and Optimization, Bernoulli, Decisions in Economics and Finance, Economic Dynamics and Control I, Finance and Stochastics, Journal of Multivariate Analysis, Mathematical Finance, Mathematics of Operations Research, Operations Research, Quantitative Finance, Rendiconti per gli studi economici quantitativi, Statistics and Probability Letters, Stochastics and Stochastics Reports, Stochastics, Stochastic Processes and their Applications*.

REVIEWER ACTIVITIES

I have been member in evaluating committees or reviewer for the following institutions: *University of Lyon 1, University of Milano, ETH in Zurich, KTH in Stockholm, London School of Economics, International Selection Panel for the ARETÉ Junior Chair* - a program of the African Institute for Mathematical Sciences (AIMS) in collaboration with the Robert Bosch Stiftung, *Evaluation Panel Land Hessen, Swiss National Science Foundation, Deutsche Forschung Gemeinschaft, Stockholm University, Portuguese Evaluation Panel*.

SOME SELECTED RESEARCH VISITS

August 2013 - April 2014, January - March 2015, August 2017 - March 2018, March -April 2019, March -April 2020, September- December 2022, March 2024: UCSB, California, USA.

2004, 2008, 2010, 2011, 2013, 2016: Center of Mathematics and Applications (CMA), University of Oslo, Norway.

2008: University of Evry, Paris, France.

2002: University of Singapore.

1999, 2001: Stockholm School of Economics "Handelshogskolan".

SUPERVISION OF STUDENTS

PHD STUDENTS

- (1) Niklas Walter, PhD thesis: *Neural Network Approximations and Randomised Path Signatures in Mathematical Finance*, 2025.
- (2) Katharina Oberpriller, PhD thesis: *Topics on model uncertainty*, 2022.
- (3) Thomas Reitsam, PhD thesis: *Asset price bubbles and dynamic super-replication under transaction costs*, 2021.
- (4) Andrea Mazzon, PhD thesis: *Asset price bubbles in financial networks*, 2018, in collaboration with T. Meyer-Brandis.
- (5) Yinglin Zhang, PhD thesis: *Insurance modeling in continuous time*, 2018.
- (6) Jacopo Mancin, PhD thesis: *Topics in mathematical finance under uncertainty*, 2017.
- (7) Maximilian Härtel, PhD thesis: *Long term interest rates modeling*, 2015.
- (8) Sorin Nedelcu, PhD thesis: *Mathematical models for bubble generation on financial markets*, 2014.
- (9) Jan Widenmann, PhD thesis: *Pricing of unemployment insurance products*, 2013.
- (10) Irene Schreiber, PhD thesis: *Risk minimization for life insurance liabilities*, 2012.
- (11) Yuliya Bregman, PhD thesis: *Pricing in new markets: an application to insurance and electricity products*, 2009, in collaboration with T. Meyer-Brandis.
- (12) Cretarola Alessandra, PhD thesis: *Quadratic Hedging for Credit Risk*, 2006.
- (13) Fuschini Serena, PhD thesis: *Discrete Approximation of Stochastic Integrals with respect to Fractional Brownian Motion*, 2005, in collaboration with M. Campanino.
- (14) Masetti Massimo, PhD thesis: *Computational Procedures For Quadratic Hedging*, 2004.

POSTDOCTORAL STUDENTS

- (1) Dr. Andreas Groll (now W3 - Professor at the TU Dortmund)
- (2) Dr. Alessandro Gnoatto (now W3 - Professor at the University of Verona, Italy)
- (3) Dr. Andrea Mazzon (now W2 - Professor at the University of Verona, Italy)

BACHELOR AND MASTER STUDENTS

Master/Bachelor Students: I have advised around 210 master students, also in collaboration with Allianz, Bayern LB, Europe Assistance, Generali, Hypovereinsbank, MunichRe, Siemens AG, Swiss Life, SwissRe.

FUNDS

December 2024: 600.000 Euro financed by the European Union for the Erasmus Mundus joint Master programme “Greening energy market and finance” (in collaboration with T. Meyer-Brandis).

January 2025: 20.000 Euro financed by VR meine Raiffeisenbank eG Altötting to support the activity of the Chair.

January 2018: Professorship **Stiftungsprofessur Computational Financial and Insurance Mathematics**, financed by BayernLB for 5 years. Volume of funds: 310.00 Euro (in collaboration with T. Meyer-Brandis).

March 2017: 50.000 Euro by BayernLB to finance one year of the Professorship **Stiftungsprofessur Quantitative Financial Mathematics**, halbe Stelle.

January 2017: 20.000 Euro financed by VR meine Raiffeisenbank eG Altötting to support the activity of the Chair.

Since 2010 - : PhD grants financed by the Verein zur Förderung der Versicherungswissenschaft in München e.V. for (Funds obtained until date: circa 213.000 Euro).

September 2014: one Phd grant from Allianz: circa 60.000 Euro.

December 2013/2015/2017: I am one of the **founder of the Quantitative and Computational Systems Science Center, an interdisciplinary center to promote the interaction between Mathematics, Statistics and Informatics with other sciences (Biology, Chemistry, Medicine, Genetics, Physics, Economics)**. Funds obtained from the LMU: 300.000 Euro.

July 2013: I am part of the faculty of the project Financial Mathematics Post Crisis: Systemic Risk, that has been selected and financed by the Innovationsfond of the LMU Excellence Initiative (Funds obtained: 100.000 Euro).

2009: DAAD grant of 3.980 euro for Andrei Obukhovskii.

2008: Professorship **Stiftungsprofessur Quantitative Financial Mathematics**, halbe Stelle, financed by Allianz for 5 years. Volume of funds: 316.250 euro (63.250 per year).

2008: **PhD position** (halbe Stelle) financed by **SwissLife** to be established at the Mathematics Department for 3 years. Volume of funds: 120.000 (40.000 per year).

2007: **PI** of the **Visiting Professorship for Quantitative Finance and Insurance** from the **Excellence Program of the University of Munich (LMU) (Dritte Förderlinie der LMUexcellent)**. Volume of funds: 300.000 (100.000 per year).

PUBLICATIONS

PUBLISHED PAPERS

- (1) Biagini, F., Doldi, A., Fouque, J.P., Frittelli, M., Meyer-Brandis, T., (2025) *Collective Arbitrage and the Value of Cooperation*, accepted on Finance and Stochastics.
- (2) Biagini, F., Mazzon, A., Oberpriller, K., (2025) *Multi-dimensional Fractional Brownian motion in the G-setting*, Journal of Mathematical Analysis and Applications 548 (1).
- (3) Biagini, F., Gonon, L., Mazzon, A., Meyer -Brandis, T., (2025) *Detecting asset price bubbles using deep learning*, Mathematical Finance 5 (1), 74 - 110.
- (4) Biagini, F., Gonon, L., Walter, N. (2024) *Approximation Rates for Deep Calibration of (Rough) Stochastic Volatility Models*, SIAM Journal on Financial Mathematics 15 (3).
- (5) Biagini, F., Mazzon, A., Meyer -Brandis, T., Oberpriller, K., (2023) *Liquidity based modeling of asset price bubbles via random matching*, SIAM J. Financial Math. 14 (4), 1304 - 1342.
- (6) Biagini, F., Mazzon, A., Perkkiö, A.-P., (2023) *Optional projection under equivalent local martingale measures*, Finance and Stochastics 27 (2), 435-465 .
- (7) Biagini, F., Bollweg, G. , Oberpriller, K., (2023) *Non-linear Affine Processes with Jumps*, Probability, Uncertainty and Quantitative Risk 8 (2).
- (8) Akhtari, B., Biagini, F., Mazzon, A., Oberpriller, K., (2023) *Generalized Feynman-Kac Formula under volatility uncertainty*, Stochastic Processes and their Applications 166.
- (9) Biagini, F., Mazzon, A., Oberpriller, K., (2023) *Reduced-form framework for multiple default times under model uncertainty*, Stochastic Processes and their Applications 156, 1 -43.
- (10) Biagini, F., Gonon, L., Reitsam, T., (2022) *Neural network approximation for superhedging prices*, Mathematical Finance 00, 1 - 39. <https://doi.org/10.1111/mafi.12363>.
- (11) Biagini, F., Reitsam, T., (2022) *Asset Price Bubbles in market models with proportional transaction costs* Frontiers of Mathematical Finance 1(3), 397 - 424.

- (12) Biagini, F., Zhang , Y. (2022) *Extended reduced-form framework for non-life insurance*, Advances in Applied Probability, 1-29, doi:10.1017/apr.2021.60.
- (13) Biagini, F., Reitsam, T., (2021) *A dynamic version of the super-replication theorem under proportional transaction costs*, Stochastic Analysis and Applications, 1- 22, DOI: 10.1080/07362994.2021.1990083.
- (14) Biagini, F., Oberpriller, K., (2021) *Reduced-form setting under model uncertainty with non-linear affine intensities*, Probability, Uncertainty and Quantitative Risk, 6 (3), 159-188.
- (15) Biagini F., Gnoatto A., Oliva I. (2021) *A unified approach to xVA with CSA discounting and initial margin*, SIAM J. Financial Math. 12(3), 1013-1053.
- (16) Biagini, F., Huber, T., Jaspersen, J.G., Mazzon, A. (2020) *Estimating Extreme Cancellation Rates in Life Insurance*, Journal of Risk and Insurance 88 (4), 971-1000.
- (17) Biagini, F. , Doldi, A. , Fouque, J.P. , Frittelli, M. , Meyer-Brandis, T. , (2020) *Systemic Optimal Risk Transfer Equilibrium*, Mathematics and Financial Economics 15, 233 - 274.
- (18) Biagini F., Gnoatto A. and Härtel M. (2020) *The long-term swap rate and a general analysis of long-term interest rates*, International Journal of Applied and Theoretical Finance, 23(1).
- (19) Biagini, F., Fouque, J.P., Frittelli, M., Meyer-Brandis, T. (2020) *On fairness of systemic risk measures*, Finance and Stochastics, 24, 513 - 564.
- (20) Biagini, F. , Zhang , Y. (2019) *Reduced-form framework under model uncertainty*, The Annals of Applied Probability, 29(4):2481-2522.
- (21) Biagini, F., Mazzon, A., Meyer-Brandis, T. (2019) *Financial asset bubbles in banking networks*, SIAM Journal on Financial Mathematics, 10(2), 430-465.
- (22) Biagini, F., Mancin, J., Meyer-Brandis, T. (2019) *Robust Mean-Variance Hedging via G-Expectation*, Stochastic Processes and their Applications, 129(4), 1287-1325.
- (23) Biagini, F., Fouque, J.P., Frittelli, M., Meyer-Brandis, T. (2019) *A unified approach to systemic risk measures via acceptance sets*, Mathematical Finance, 29 (1), 329-367.

- (24) Biagini F., Meyer-Brandis T., Øksendal B. and Paczka K. (2018) *Optimal control with delayed information flow of systems driven by G-Brownian motion*, Probability, Uncertainty and Quantitative Risk, 3(4).
- (25) Biagini, F., Mazzon, A., Meyer-Brandis, T. (2018) *Liquidity induced asset bubbles via flows of ELMMs*, SIAM Journal on Financial Mathematics 9 (2).
- (26) Biagini, F. and Mancin, J. (2017) *Financial Asset Bubbles under Uncertainty*, Probability, Uncertainty and Quantitative Risk 2 (14).
- (27) Biagini F., Botero C. and Schreiber I. (2017) *Risk-minimization for life insurance liabilities with dependent mortality risk*, Mathematical Finance 27 (2), 505 - 533.
- (28) Biagini, F. and Zhang, Y. (2016) *Polynomial Preserving Diffusion Models for Life Insurance Liabilities*, Insurance: Mathematics and Economics 71, 114 - 129.
- (29) Biagini F., Gnoatto A. and Härtel M. (2018) *Affine HJM framework on S_d^+ and long-term yield*, Applied Mathematics and Optimization 77(3), 405-441.
- (30) Biagini F., Groll A. and Widenmann J. (2016) *Risk minimization for insurance products via F-doubly stochastic Markov chains*, Risks 4 (3), Article number 23.
- (31) Biagini F. , Rheinländer T. and Schreiber I. (2016) *Risk-minimization for life insurance liabilities with basis risk*, Mathematics and Financial Economics 10 (2), 151-178.
- (32) Biagini F. and Nedelcu S. (2015) *The formation of financial bubbles in defaultable markets*, SIAM Journal on Financial Mathematics 6 (1), 530-558.
- (33) Biagini F., Bregman Y., Meyer-Brandis T. (2015) *Electricity futures price modeling with Lévy term structure models*, International Journal of Theoretical and Applied Finance 18 (1).
- (34) Biagini F. and Härtel M. (2014) *Behaviour of Long-Term Yields in a Lévy Term Structure*, International Journal of Theoretical and Applied Finance 17 (3), 1 - 24.
- (35) Biagini F., Cretarola A. and Platen E. (2014) *Local risk minimization via benchmark approach*, Mathematics and Financial Economics 8 (2), 109-134.

- (36) Biagini F., Föllmer H. and Nedelcu S. (2014) *Shifting martingale measures and the slow birth of a bubble*, Finance and Stochastics 18 (2), 297-326.
- (37) Biagini, F., Groll, A. and Widenmann J. (2013) *Intensity based premium evaluation for unemployment insurance products*, Insurance: Mathematics and Economics 53, 302 - 316.
- (38) Biagini F., Fink H. and Klüppelberg C. (2013) *A fractional credit model with long range dependent default rate*, Stochastic Processes and their Applications 123, 1319 - 1347.
- (39) Biagini F. and Schreiber I. (2013) *Risk-minimization for life insurance liabilities*, SIAM Journal on Financial Mathematics 4, 243 - 264.
- (40) Biagini, F., Rheinländer T. and Widenmann J. (2013) *Hedging mortality claims with longevity bonds*, ASTIN Bulletin 43 (2), 123 - 157.
- (41) Biagini F. (2013) *Evaluating hybrid products: the interplay between financial and insurance markets*, in Stochastic analysis, random fields and applications VII. Progress in Probability 67, R. Dalang, M. Dozzi, F. Russo (Editors), Birkhäuser Verlag 2013.
- (42) Biagini F. and Widenmann J. (2012) *Pricing of unemployment insurance products with doubly stochastic Markov chains*, International Journal of Theoretical and Applied Finance 15 (4), 1 - 32.
- (43) Biagini F., Hu Y., Meyer-Brandis T. and Øksendal B. (2012) *Insider trading equilibrium in a market with memory*, Mathematics and Financial Economics 6 (3), 229 - 247.
- (44) Biagini F. and Cretarola A. (2012) *Local risk-minimization with recovery process*, Applied Mathematics and Optimization 65 (3), 293 - 314.
- (45) Biagini F., Fuschini S. and Klüppelberg C. (2011) *Credit contagion with long range dependent macroeconomic factor processes*, Advanced Mathematical Methods for Finance, Di Nunno G. and Øksendal B. editors, Springer.
- (46) Biagini F. and Cretarola A. (2009) *Local risk-minimization for defaultable markets*, Mathematical Finance 19, 669 - 689.
- (47) Biagini F. and Ulmer S. (2009) *Asymptotics for operational risk quantified with expected shortfall*, Astin Bulletin 39, 735 - 752.

- (48) Biagini F., Bregman Y. and Meyer-Brandis T. (2008) *Pricing of catastrophe insurance options under immediate loss reestimation*, Journal of Applied Probability 45, 831 - 845.
- (49) Biagini F., Bregman Y. and Meyer-Brandis T. (2008) *Pricing of catastrophe insurance options written on a loss index with reestimation*, Insurance: Mathematics and Economics 43, 214 - 232.
- (50) Biagini F. and Øksendal B. (2008) *Forward integrals and an Itô formula for fractional Brownian motion*, Infinite Dimensional Analysis, Quantum Probability and Related Topics 11, 157 - 177.
- (51) Biagini F., Campanino M. and Fuschini S. (2008) *Discrete approximations for stochastic integrals with respect to fractional Brownian motion with Hurst index $H > 1/2$* , Stochastics 80, 407 - 426.
- (52) Biagini F. and Cretarola A. (2007) *Quadratic hedging methods for defaultable claims*, Applied Mathematics and Optimization 56, 425 - 443.
- (53) Biagini F. and Björk T. (2007) *On the Timing Option in a Futures Contract*, Mathematical Finance 17 (2), 267 - 283.
- (54) Biagini F. and Øksendal B. (2006) *Minimal Variance Hedging for Insider Trading*, International Journal of Theoretical and Applied Finance (IJTAF) 9, 1351 - 1375.
- (55) Biagini F. and Øksendal B. (2005) *A stochastic calculus approach to insider trading*, Applied Mathematics and Optimization 52, 167 - 181.
- (56) Biagini F., Øksendal B., Sulem A. and Wallner N. (2004) *An introduction to White noise theory and Malliavin calculus for fractional Brownian motion*, The Proceedings of the Royal Society, 460, 347 - 372.
- (57) Biagini F. and Øksendal B. (2003) *Minimal hedging for fractional Brownian motion*, Methods and Applications of Analysis 10, 347 - 362.
- (58) Biagini F., Hu Y., Øksendal B. and Sulem A. (2002) *A stochastic maximum principle for processes driven by fractional Brownian motion*, Stochastic Processes and their Applications 100, 233 - 253.
- (59) Biagini F. (2002) *Mean-Variance Hedging for Interest Rate Models with Stochastic Volatility*, Decisions in Economics and Finance 25, 1-17.

- (60) Biagini F. and Guasoni P. (2002) *Mean-Variance Hedging with Random Volatility Jumps*, Stochastic Analysis and Applications 20 (3), 471 - 494.
- (61) Biagini F. (2001) *A Quadratic Approach for Interest Rates Models in Incomplete Markets*, Proceedings of Workshop on Mathematical Finance, Konstanz, Germany, October 2000.
- (62) Biagini F., Guasoni P. and Pratelli M. (2000) *Mean-Variance Hedging for Stochastic Volatility Models*, Mathematical Finance 10 (2), 109 - 123.
- (63) Biagini F. and Pratelli M. (1999) *Local Risk Minimization and Numéraire*, Journal of Applied Probability 36 (4), 1 - 14.

BOOK CHAPTERS

- (1) Biagini F., Meyer-Brandis T. and Svindland G. (2014) *The Mathematical Concept of Measuring Risk*, Risk - A Multidisciplinary Introduction, Klüppelberg C. , Straub D., and Welpel I.M. (Eds.), Springer.
- (2) Biagini F. and Rost D. (2010) *Money out of nothing? - Prinzipien und Grundlagen der Finanzmathematik*, Beitrage zum Mathematikunterricht 2010, Lindmeier, A. & Ufer, St. (Hrsg.), WTM-Verlag Münster, 41 - 48.
- (3) Biagini F. (2010) *The second fundamental asset pricing theorem*, Encyclopedia of Quantitative Finance, Cont R. (Ed.) John Wiley & Sons Ltd. Chichester, UK, 1623 - 1628.

BOOKS

- (1) Biagini F. and Campanino M. (2016) *Elements of Probability and Statistics*, Introduction to Probability with the De Finetti's Approach and to Bayesian Statistics, Springer. English translation of the Italian version, see below.
- (2) Biagini F., Hu Y., Øksendal B., Zhang T. (2008) *Stochastic Calculus for Fractional Brownian Motion and applications*, Springer.
- (3) Biagini F. and Campanino M. (2005) *Elementi di Probabilità e Statistica*, Introduction to Probability and Statistics with solved exercises in Italian, Springer.

EDITORIAL ACTIVITY

- (1) Biagini F. , Richter A., Schlesinger H. (Eds.), *Risk Measures and Attitudes*, EAA Series, Springer, 2012.
- (2) Biagini F. , Kauermann G., Meyer-Brandis T. (Eds.), *Network Science, An Aerial View*. Springer, 2019.

PhD THESIS

Quadratic Hedging Approaches For Interest Rate Models With Stochastic Volatility, Tesi di Perfezionamento, Scuola Normale Superiore, 2001.

PREPRINTS

- (1) Biagini F., Mazzon A., Meyer-Brandis T., Oberpriller K. (2023): Supplement to Liquidity based modeling of asset price bubbles via random matching, Preprint LMU Munich.
- (2) Biagini, F., Gonon, L., Walter, N. (2024) *Universal randomised signatures for generative time series modelling*, Preprint LMU Munich and Imperial College London.
- (3) Biagini, F., Gnoatto, A., Oberpriller, K. (2025) *When defaults cannot be hedged: an actuarial approach to xVA calculations via local risk-minimization*, Preprint LMU Munich and University of Verona, Italy.