CURRICULUM VITAE OF JOSEF TEICHMANN (EMPHASIS ON LAST FIVE YEARS)

1. Curriculum

Born in Lienz, Austria on August 27, 1972. Austrian Citizen. Three children.

1.1. Education.

- DEA in Mathematics at Université de Franche Comte in Besançon from September 1994 to June 1995 supervised by Wolfgang Arendt and Peter Imkeller. *Mémoire "Quelques méthodes et idées de la théorie de semi-groupes linéaires"*.
- Master in Mathematics at the Universität Graz from September 1995 to June 1996. *Diploma Thesis "Hopf's decomposition and recurrent Semi-groups"* supervised by Wilhelm Schappacher.
- Ph.D. in Mathematics at the University of Vienna from September 1996 to May 1999 supervised by Peter Michor. *Ph.D.-Thesis "Infinite dimensional Lie Groups with a view towards Functional Analysis"*.

1.2. Professional Activities.

- Civil Service at ESRA (Jewish community of Vienna) from June 1999 to May 2000.
- **Post-doc-position** at the Institute of Financial and Actuarial Mathematics, University of Technology Vienna from June 2000 to July 2001.
- **Assistant Professor (Universitätsassistent)** at the Institute of Financial and Actuarial Mathematics from August 2001 to February 2003.
- **Habilitation (Venia docendi) in Mathematics** on October 9, 2002.
- **Visiting Professor at Université Paris 6 and at CREST** in February and March 2003.
- **Associate Professor (Universitätsdozent)** at the Institute of Financial and Actuarial Mathematics from March 2003 until May 2009.
- **Leader of the START-project from 2007–2009** at TU Wien from 2006 to 2009.
- **Professor for mathematical Finance at the Department of mathematics at ETH Zürich** since June 2009.
- **Executive Secretary of the Bachelier Finance Society** since July 2016.

1.3. Editorial Activities.

- **Associate Editor** of Finance and Stochastics since January 1, 2007.
- **Associate Editor** of the newly founded Journal of Geometric Mechanics since January 1, 2008 (inaugural issue in 2009, Juan-Pablo Ortega is one of the managing editors).
- **Associate Editor** of Stochastic Processes and their Applications since January 1, 2011.

- **Associate Editor** of Bernoulli, since January 2013.

1.4. Awards.

- **Studienpreis 2000** of the ÖMG (Austrian Mathematical Society) for the Ph.D.-Thesis.
- **Prix Jeune Chercheur 2003 de l'Institut Europlace** for the work on Geometry of Interest Rates (joint with Peter Bank and Damir Filipović).
- **Förderungspreis 2005** of the ÖMG (Austrian Mathematical Society).
- **START-Prize 2006** awarded in September 2006 by the Austrian Ministry of Science.
- **Prix Louis Bachelier de la Fondation Natixis pour la recherche quantitative et de la SMAI 2014** awarded by Academie des Sciences.

1.5. Successful (Co-)application for Research Projects – last five years.

- A list of all SNF projects can be found `http://p3.snf.ch/person-576071-Teichmann-Josef#`
- **SNF-Project "Mathematical Finance in the light of Machine Learning"** a research project for two Post-Doc and two Doc researchers for 4 years, 2018 – 2021.
- **SNF-Project "Regularity Structures in mathematical Finance"** A research project for one Post-Doc, 2015 – 2017.
- **SNF-Project "Prediction Theory of term structure models" together with Mario Wüthrich** A research project for one Post-Doc and one Pre-Doc researcher, 2013-2016.
- **SCIEX-Project 2012-13** Support of one year of Post-Doc-research within a research framework between ETHZ and Ljubljana University on affine processes on symmetric cones.
- **SCIEX-Project 2011-12** Support of one year of Post-Doc-research within a research framework between ETHZ and Ljubljana University on algebraic structures of extrapolation techniques.
- **SNF-Project "Functional analytic aspects of Robust calibration for affine models"** A research project for one Post-Doc researcher for 2 years, 2012–2014.
- **Prodoc "Stochastic Models of Complex Systems and their Applications"** A joint teaching module between eight research groups at ETHZ and UZH including several research modules (one research module is financing one of my PhD-students) 2011–2014.

1.6. Supervision of PhD students (last seven years).

(1) Chong Liu, "A tale of two minimization problems: semimartingale transportation and rough paths lifts", ETH Zürich 2019.
(2) Lukas Gonon, "Calibration, filtering and hedging: non-linear information processing in mathematical finance", ETH Zürich 2018.
(3) Thomas Krabichler, "Term structure modelling beyond classical paradigms", ETH Zürich 2017.
(4) Ozan Akdogan, "Variance Swap Curves – Modelling and Calibration", ETH Zürich 2016.
(5) Georg Grafendorfer, "Infinite dimensional affine processes", ETH Zürich 2016.

(6) David Stefanovits, joint supervision with Mario Wüthrich, “Robust calibration in yield modeling”, ETH Zürich 2016.
(7) Blanka Horvath, joint supervision with Johannes Muhle-Karbe, “Geometric and asymptotic properties of multivariate models in finance”, ETH Zürich 2015.
(8) Nicoletta Gabrielli, “Affine processes from the perspective of path space valued Levy processes”, ETH Zürich 2014.
(9) Currently I supervise Matteo Gambara, Jakob Heiss, Calypso Herrera, Florian Krach, Hanna Wutte, Syang Zhou.

1.7. **Organization of Conferences and Schools.**

(1) First Imperial-ETH workshop on mathematical Finance, London 2013.
(2) Summer School on Stochastic Analysis with applications in biology, finance and physics, Zürich 2013 `https://www.mathematik.hu-berlin.de/rtg1845/qualprog/sumschool`
(3) Second Imperial-ETH workshop on mathematical Finance, Zürich 2014.
(4) Third Imperial-ETH workshop on mathematical Finance, London 2015.
(5) Fourth Imperial-ETH workshop on mathematical Finance, Zürich 2016.
(6) Several FWZ Seminars in Freiburg, Wien, Zürich, see `https://people.math.ethz.ch/~jteichma/index.php?content=FWZ_seminar`
(7) Mathematics of Quantitative Finance (jointly organized with Peter Friz and Antoine Jacquier), Oberwolfach (Germany), 26.2.-4.3.2017.
(8) Fifth Imperial-ETH workshop on mathematical Finance, London 2017.
(9) Sixth Imperial-ETH workshop on mathematical Finance, Zürich 2018.
(10) METE - Mathematics and Economics: Trends and Explorations. A conference celebrating Mete Soner’s 60th birthday and his contributions to Analysis, Control, Finance and Probability, Zürich, 4.-8.6.2018.
(11) First Oxford-ETH workshop on mathematical Finance, Oxford 2019.

2. Publications (last five years)

I. Refereed publications

(Ia.) Scientific journals

(1) Christa Cuchiero, Josef Teichmann: *Markovian lifts of positive semidefinite affine Volterra type processes*, arXiv/1907.01917, to appear in Journal of decisions and economics in finance – special issue “Quantitative developments in financial volatility”, 2019.
(2) Chong Liu, David Prömel, Josef Teichmann: *Characterization of non-linear Besov spaces*, arXiv/1806.04651, to appear in TAMS, 2018.
(3) Hans Bühler, Lukas Gonon, Josef Teichmann, Ben Wood: *Deep Hedging*, arXiv:1802.03042, Quantiative Finance 19 (8), 2019.
(4) Lukas Gonon, Josef Teichmann: *Linearized Filtering of Affine Processes Using Stochastic Riccati Equations*, arXiv:1801.07796, to appear in SPA, 2019.
(5) Christa Cuchiero, Irene Klein, Josef Teichmann: *A fundamental theorem of asset pricing for continuous time large financial markets in a two filtration setting*, arXiv:1705.02087, to appear in “Theory of Probability and

its Applications" – special issue on occasion of the 70th birthday of Yuri Kabanov, 2019.

(6) Anja Richter, Josef Teichmann: *Discrete Time Term Structure Theory and Consistent Recalibration Models*, arXiv:/1409.1830, SIAM Journal of Financial Mathematics 8 (1), 2017.

(7) Leif Döring, Blanka Horvath, Josef Teichmann: Functional Analytic (Ir-)Regularity Properties of SABR-Type Processes, arXiv/1701.02015, Int. J. Theor. Appl. Finance 20, no. 3, 2017.

(8) Philipp Harms, David Stefanovits, Josef Teichmann, Mario Wẗhrich: *Consistent recalibration of yield curve models*, Math. Finance 28 (3), 2018.

(9) Philipp Harms, David Stefanovits, Josef Teichmann, Mario Wüthrich: *Consistent Re-calibration of the Discrete-Time Multifactor Vasicek Model*, arXiv/1512.06454, Risks 4, no. 3, 18, 2016.

(10) Christa Cuchiero, Irene Klein, Josef Teichmann: *A new perspective on the fundamental theorem of asset pricing for large financial markets*, arXiv/1412.7562, TVP (Theory of Probability and Its Applications) 60 (4), 561-579, 2016.

(11) Josef Teichmann, Mario Wüthrich: *Consistent Yield Curve Prediction*, ASTIN Bulletin 46, no. 2, 191–224, 2016.

(12) Peter Markovich, Josef Teichmann, Marie-Therese Wolfram: *Parabolic free boundary price formation models under market size fluctuations*, SIAM MMS 14(4), 1211–1237, 2016.

(13) Bojan Kuzma, Matjaz Omladic, Klemen Sivic, Josef Teichmann: *Exotic one-parameter semigroups of endomorphisms of a symmetric cone*, arXiv:/1408.2967, Linear Algebra and Its Applications, Vol. 477, 42–75, 2015.

(14) Christa Cuchiero, Josef Teichmann: *A convergence result for the Emery topology and a variant of the proof of the fundamental theorem of asset pricing*, arXiv/1406.5414, Finance and Stochastics, to appear, 2015.

(15) Jiro Akahori, Yuji Hishida, Josef Teichmann, Takahiro Tsuchiya: *A Heat Kernel Approach to Interest Rate Models*, arXiv/0910.5033, Jpn. J. Ind. Appl. Math. 31 (2014), no. 2, 419-439.

(16) Damir Filipovic, Stefan Tappe, Josef Teichmann: *Invariant manifolds with boundary for jump-diffusions*, arXiv/1202.1076, EJP 19 (51), 2014.

(17) Christa Cuchiero, Josef Teichmann: *Fourier transform methods for pathwise covariance estimation in the presence of jumps*, arXiv/1301.3602, to appear in SPA, 2014.

(18) Philipp Dörsek, Josef Teichmann, Dejan Veluscek: *Cubature Methods For Stochastic (Partial) Differential Equations In Weighted Space*, arXiv/1201.4024, to appear in Stochastic Partial Differential Equations: Analysis and Computations, 2014.

(19) Christa Cuchiero, Martin Keller-Ressel, Eberhard Mayerhofer, Josef Teichmann: *Affine processes on symmetric cones*, arXiv1112.1233, to appear in Journal of Theoretical Probability, 2014.

(Ib.) Conference proceedings

(1) Nicoletta Gabrielli, Josef Teichmann: *Pathwise construction of affine processes*, arxiv:/1412.7837, , 2015.

(2) Irene Klein, Thorsten Schmidt, Josef Teichmann: *No Arbitrage Theory for Bond Markets*, in Jan Kallsen and Antonis Papapantoleon (Eds): Advanced Modeling in Mathematical Finance, Springer, 2016.
(3) Archil Gulisashvili, Josef Teichmann: *The Gärtner-Ellis theorem, homogenization, and affine processes*, arXiv/1406.3716, to appear in "Large Deviations and Asymptotic Methods in Finance" (Editors: P. Friz, J. Gatheral, A. Gulisashvili, A. Jacqier, J. Teichmann) , Springer Proceedings in Mathematics and Statistics, Vol. 110, 2015.
(4) Martin Keller-Ressel, Josef Teichmann: *A remark on Gatheral's most-likely path approximation of implied volatility*, arXiv/0911.5062, to appear in "Large Deviations and Asymptotic Methods in Finance" (Editors: P. Friz, J. Gatheral, A. Gulisashvili, A. Jacqier, J. Teichmann) , Springer Proceedings in Mathematics and Statistics, Vol. 110 2015.

(Ic.) Monographs II. Submitted publications (IIa.) Scientific journals

(1) Christa Cuchiero, Josef Teichmann: *Generalized Feller processes and Markovian lifts of stochastic Volterra processes: the affine case*, arXiv:1804.10450, preprint, submitted, 2018.
(2) Harprit Singh, Josef Teichmann: *An elementary proof of the reconstruction theorem*, arXiv/1812.03082, preprint, submitted, 2019.
(3) Christa Cuchiero, Martin Larsson, Josef Teichmann: *Deep neural networks, generic universal interpolation, and controlled ODEs*, arXiv/1908.07838, preprint, submitted, 2019.
(4) Chong Liu, David Prömel, Josef Teichmann: *Optimal Extension of Sobolev rough paths*, arXiv/1811.05173, preprint, submitted, 2018.
(5) Chong Liu, David Prömel, Josef Teichmann: *Stochastic analysis with modelled distributions*, arXiv/1609.03834, preprint, submitted, 2016.

(IIb.) Conference proceedings

(IIc.) Monographs

III. Non-refereed publications

(IIIa.) Scientific journals

(1) Josef Teichmann, *Martin Hairer's regularity structures*, IMN 228, 11–21 (2015).

(IIIb.) Conference proceedings
(IIIc.) Monographs

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