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Personal

Born in Graz (Austria) on October 29th, 1977.

Marital status: Married.

Austrian Citizen.

Education

Ph.D. Mathematics, University of Vienna, 2004–2006

Dissertation on: *The wave equation on singular space-times*, supervisor: Michael Kunzinger.

M.Sc. Technical Mathematics, Universities of Technology Graz and Vienna, 1999–2004

Topic of master thesis: *p-adic differential equations*, supervisor: Norbert Brunner, co-supervisor: Alain Escassut (Clermont-Ferrand, Université Blaise Pascal), Foreign exchange scholarship, winter term 2003.

Civil Engineering and Water Management, 1996–1998

University of Life Sciences, Merit scholarship 1999.

Employment

Academic Employment

Senior Researcher, Vienna Institute of Finance, December 2007–

Vienna University of Economics and Business

Funded by the Austrian Science and Technology Fund (WWTF).

Research Assistant, 2004–2007

University of Vienna, Dept. Mathematics

Project P16742 Geometric Theory of generalized functions,

project organizer: Michael Kunzinger,

funded by the Austrian Research Fund (FWF).

Teaching Assistant, 2000–2006

Institute of Mathematics at the University of Life Sciences.

Publications

Published and submitted articles and preprints are available on www.arxiv.org

Published and submitted articles

- [S7] *A characterization of non-central Wishart distributions*, preprint, 2010.
- [S5] (with Oliver Pfaffel and Robert Stelzer), *On strong solutions of positive definite jump-diffusions*, submitted to Stochastic processes and applications, 2010.
- [S4] (with Johannes Muhle-Karbe and Alexander G. Smirnov), *A characterization of the martingale property of exponentially affine processes*, revision submitted to Stochastic processes and applications, 2009.
- [S3] (with M. Keller-Ressel and A. G. Smirnov), *On convexity of solutions of ordinary differential equations*, J. Math. Anal. Appl. 368 (2010) 247–253.
- [S2] (with C. Cuchiero., D. Filipović and J. Teichmann), *Affine Processes on positive semidefinite matrices*, 2009, to appear in The Annals of Applied Probability.
- [S1] (with D. Filipović), *Affine Diffusion Processes: Theory and Applications*, Advanced Financial Modelling, Radon Ser. Comput. Appl. Math., Vol 8, Walter de Gruyter, Berlin, 2009, forthcoming.
- [D1] (with J. D.E. Grant and R. Steinbauer), *The wave equation on singular space-times*, Commun. Math. Phys. 285, No. 2, 399-420 (2009).
- [D2] *On Lorentz geometry in algebras of generalized functions*, Proc. R. Soc. Edinb., Sect. A, Math. 138, No. 4, 843-871 (2008)
- [D3] (with C. Hanel, S. Pilipović and H. Vermaeve), *Homogeneity in generalized function algebras*, J. Math. Anal. Appl. 339, No. 2, 889-904 (2008).
- [D4] *On the characterization of p -adic Colombeau–Egorov generalized functions by their point values*, Math. Nachr. 280, No. 11, 1297-1301 (2007).
- [D5] *Spherical completeness of the non-Archimedean ring of Colombeau generalized numbers*, Bull. Inst. Math., Acad. Sin. (N.S.) 2, No. 3, 769-783 (2007).
- [PF1] *Rational decomposition of p -adic meromorphic functions*, Sci. Math. Jpn. 61, No. 1, 1-13 (2005).
- [PF2] (with A. Escassut), *Rational decompositions of complex meromorphic functions*, Complex Variables, Theory Appl. 49, No. 14, 991-996 (2004).
- [PF3] *On the functional equation $Af^2 + Bg^2 = 1$ in a p -adic field of characteristic zero*, p -adic Numbers, Ultrametric Analysis, and Applications, Vol 2, Number 1, 2010.

Preprints

- [P1] *On positivity in algebras of generalized functions*, 2008

Working papers, didactic notes

- [W7] *The Lévy-Khintchine representation of Basic Affine Jump-diffusions (BAJD)*, didactic note, 2010.
- [W7] *A note on the affine transform formula for affine diffusions*, didactic note, 2010.
- [W6] *Constructing the transition laws of affine processes: A simplified point of view*, didactic note, 2009.
- [W5] *Wishart processes and Wishart distributions: Relations and Realizations*, 2009.

- [W4] Affine processes on symmetric cones, with J. Teichmann, C. Cuchiero and M. Keller-Ressel, 2010
- [W3] (with D. Filipović and P. Schneider) *Density Approximations for Multivariate Affine Jump-Diffusion Processes*, 2010.
- [W2] (with M. Keller-Ressel), *Exponential Moments of affine jump-diffusions*.
- [W1] (with P. Schneider), *Block-diagonalization of affine diffusion processes*, 2008.

Research Visits

ETH Zürich, 2009/11/24-28
invited by Josef Teichmann.

Technical University Munich, 2009/07
invited by Robert Stelzer.

Warwick Business School, UK, 2009/02/22-28
invited by Paul Schneider

Centre de Mathématiques de Jussieu Université Paris 7, 2006/12
invited by Dimitri Scarpalezos

Center for Computational and Applied Mathematics (CCAM), Purdue, US, 2006/09
invited by Martijn de Hoop, Department of Mathematics Purdue University, West Lafayette

University of Novisad, Serbia and Montenegro 2006/02 and 2006/08
invited by Stevan Pilipović, Department of Mathematics and Informatics. Supported by the Faculty of Mathematics, University of Vienna

University Blaise Pascal, France, 2003/09-12
Program *Foreign studies within the scope of the master thesis*,
supervisor: Alain Escassut. Supported by the University of Technology, Vienna

Teaching

Visiting professor, Vienna University of Economics and Business, 2010
Continuous Time Finance II (master program Quantitative Finance (Science Track),
winter term 2010).

Vienna Graduate School of Finance, winter term 2010
Lecturer, Quantitative Methods in Finance.

Mini-course on affine processes and applications in finance, June 2010.
Vienna Institute of Finance

Vienna Graduate School of Finance, winter term 2009
Lecturer, Quantitative Methods in Finance.

Teaching Assistant, 2000-2006
Institute of Mathematics at the University of Life Sciences, courses in mathematics and planar geometry
for engineers.

OEG Eberhard Mayerhofer, 2001-2003
Teaching institute founded jointly with Lernquadrat Wien (former Studienkreis Wien).
Courses for students of high schools and technical high schools.

Statics and Strength of Materials for architecture, 2000,
Institute D. Tomasitz, Vienna.

Supervision of students and Consulting

I have co-supervised /consulted a number of PhD students during my academic employments. This includes mathematical finance and finance (topics related to the theory of affine processes, local volatility models, stochastic correlation models, exotic options, and credit risk models). For my contribution to academic life in the Institute of Finance, Banking and Insurance at the Vienna University of Economics and Business, please consult Stefan Pichler.

I have recently consulted Uni Credit Vienna on stochastic correlation models.

Selected Talks

Matrix-valued affine processes, Bank Austria, invited by Peter Schaller.

Matrix-valued affine processes, HVB Stiftungsinstitut für Finanzmathematik, 2010/04/14.

On strong solutions of positive definite jump-diffusions, FAM, TU Vienna, 2010/01/26

Contributions to the theory of affine Markov processes, University of Life Sciences, 2009/12/04.

On strong solutions of positive definite jump-diffusions, ETH Zürich, 2009/11/26.

Are affine processes affine?, DMV-OEMG Tagung, 2009/09/25

A characterization of conservative affine Markov processes, University of Vienna, 2009/10/01, Working Seminar of the Mathematical Finance Group. Invited by W. Schachermayer.

On the affine transform formula, 2009/07/23

Oberseminar Finanz- und Versicherungsmathematik, TU Munich

When are affine processes affine?, Academia Sinica, Taipei, 2009/06/15

On Convexity of solutions of ordinary differential equations, 2009/05/08
Mathematical Institute, University of Applied Life Sciences, Vienna.

Affine Diffusion Processes: Theory and Applications, 2009/03/16.
Workshop Finance and Insurance, Jena, Germany.

Affine Diffusion Processes: Theory and Applications, 2009/03/05
Josef Teichmann's START Seminar

Causality in generalized space-times and the dominant energy condition, 2007/09/02
Conference on Linear and Non-linear Theory of Generalized Functions and Its Applications, Bedlewo, Poland.

The wave equation on singular space-times, 2006/09/15, Center for Computational and Applied Mathematics (CCAM), Purdue University, US.

The wave equation on singular space-times, 2006/08/14

Program for analysis and foundations of mathematics,

Department of Mathematics and Informatics, Novi Sad, Serbia and Montenegro.

Intrinsic questions in generalized function algebras, 2006/08/11
University of Innsbruck

Rational decomposition of p -adic meromorphic functions, 2006/07/04
8th International Conference on p -adic Functional Analysis, Clermont-Ferrand, France,

Algebras of generalized functions and applications in PDEs and geometry, 2006/02/24
National Center for Theoretical Sciences, Mathematics Division, National Taiwan University

Algebraic foundations of Colombeau Lorentz geometry, 11/26/2005
University of Innsbruck

References

Mathematical Finance and Stochastic Processes

[Damir Filipović](#)

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Switzerland

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[Walter Schachermayer](#)

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Finance

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