ANTONIS PAPAPANTOLEON

CURRICULUM VITAE

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1. CURRICULUM

1.1. Personal data.

- Born in Athens, Greece. Greek & German citizen. Married, 1 child.

1.2. Education.

- **Ph.D. in Mathematics**, University of Freiburg, Germany: 9/2002 – 3/2007
  Ph.D. Thesis: *Applications of semimartingales and Lévy processes in finance: duality and valuation*
  Advisor: Prof. Dr. Ernst Eberlein

- **M.Sc. in Financial Mathematics**, University of Warwick, UK: 9/2000 – 9/2001
  Master Thesis: *Analyzing the effect of seasoning on rating transitions*
  Advisor: Prof. Dr. Nick Webber

- **Diploma in Mathematics**, University of Patras, Greece: 9/1995 – 7/2000
  Diploma Thesis: *Optimal portfolio choice using dynamical programming*
  Advisor: Prof. Dr. Akis Botsaris

1.3. Employment and academic positions.

- **Director**: Dec 2019 –
  Financial Engineering and Mathematical Optimization Lab, NTUA, Athens, Greece

- **Affiliated Researcher**: Oct 2019 –
  Institute of Applied and Computational Mathematics, FORTH, Heraklion, Greece

- **Assistant Professor** (tenure-track): Oct 2017 –
  Department of Mathematics, NTUA, Athens, Greece

- **Juniorprofessor**: Sep 2011 – Sep 2017
  Institute of Mathematics, TU Berlin, Germany

- **Deputy Professor**: Sep 2016 – Feb 2017
  Institute of Mathematics, University of Mannheim, Germany (on leave from TU Berlin)

- **Post-Doctoral research associate**: Jun 2009 – Sep 2011
  Institute of Mathematics, TU Berlin, Germany

- **Scientific Employee**: Jun 2009 – Jun 2011
  Quantitative Products Laboratory, Deutsche Bank, Berlin, Germany

- **Post-Doctoral research associate**: Jun 2007 – May 2009
  Financial and Actuarial Mathematics, TU Vienna, Austria

- **Research assistant**: Sep 2002 – May 2007
  Department of Mathematical Stochastics, University of Freiburg, Germany
- **Teaching assistant**: Sep 2004 – May 2007
  Department of Mathematical Stochastics, University of Freiburg, Germany
- **Research fellow** (intern) in Product Development Group: Jul – Aug 2002
  Global Structured Risk Management, Commerzbank AG, Germany
- **Research fellow** (intern) in Quantitative Research Group: Jan – Jun 2002
  Global FX Trading, Commerzbank AG, Germany

1.4. **Visiting positions.**

- Visiting Professor, TU Berlin, Germany, Jun 2018.

1.5. **Mathematical interests.**

- Stochastic analysis, semimartingale theory; Lévy processes; SDEs and BSDEs.
- Mathematical finance; exotic options; term structure and credit risk models.
- Numerical methods in finance; risk measurement and systemic risk.
- Equilibrium models; commodity markets; model-free finance.

1.6. **Honors.**

- Highest distinction ('**summa cum laude**') for the Ph.D. Thesis.

1.7. **Scholarships.**

- **Post-doctoral stipend,** Austrian Science Fund (FWF), grant Y328 (START Prize), Jun 2007 – May 2009.
- **Doctoral stipend**, German Ministry of Science and Culture (BMBF), Jan – May 2007.
- **Doctoral stipend**, German Research Foundation (DFG), grant EB66/9-2, Sep 2004 – Dec 2006.
- **Doctoral stipend**, EU-RTN DYNSTOCH HPRN-CT-2000-00100, Sep 2002 – Aug 2004.

1.8. **Languages and computing skills.**

- Fluent in **Greek** (native) and **English** (Proficiency Cambridge, M.Sc. Warwick)
- Advanced in **German** (Ph.D. Freiburg, Prof. Berlin)
- Proficient in Linux, MacOS, Matlab, Scilab, LATEX, HTML.

2. Publications

2.1. **Ph.D. Thesis.**

- A. Papapantoleon: *Applications of semimartingales and Lévy processes in finance: duality and valuation*. Ph.D. Thesis, University of Freiburg, 2007.

2.2. **Book.**

- J. Kallsen, A. Papapantoleon (Eds.): *Advanced Modelling in Mathematical Finance – In Honour of Ernst Eberlein*, Springer, 2016.

2.3. **Refereed publications.**

[1] E. Eberlein, A. Papapantoleon: Equivalence of floating and fixed strike Asian and lookback options. *Stochastic Processes and Their Applications 115*, 31–40, 2005.

[2] E. Eberlein, A. Papapantoleon: Symmetries and pricing of exotic options in Lévy models. In A. Kyprianou, W. Schoutens, P. Wilmott (Eds.), *Exotic Option Pricing and Advanced Lévy Models*, pp. 99–128, Wiley, 2005.

[3] E. Eberlein, W. Kluge, A. Papapantoleon: Symmetries in Lévy term structure models. *International Journal of Theoretical and Applied Finance 9*, 967–986, 2006.

[4] E. Eberlein, A. Papapantoleon, A. N. Shiryaev: On the duality principle in option pricing: semimartingale setting. *Finance and Stochastics 12*, 265–292, 2008.

[5] W. Kluge, A. Papapantoleon: On the valuation of compositions in Lévy term structure models. *Quantitative Finance 9*, 951–959, 2009.

[6] E. Eberlein, A. Papapantoleon, A. N. Shiryaev: Esscher transform and the duality principle for multidimensional semimartingales. *The Annals of Applied Probability 19*, 1944–1971, 2009.

[7] E. Eberlein, K. Glau, A. Papapantoleon: Analysis of Fourier transform valuation formulas and applications. *Applied Mathematical Finance 17*, 211–240, 2010.

[8] M. Keller-Ressel, A. Papapantoleon, J. Teichmann: The affine LIBOR models. *Mathematical Finance 23*, 627–658, 2013.

[9] A. Papapantoleon: Old and new approaches to LIBOR modeling. *Statistica Neerlandica 64*, 257–275, 2010.

[10] E. Eberlein, K. Glau, A. Papapantoleon: Analyticity of the Wiener–Hopf factors and valuation of exotic options in Lévy models. In G. Di Nunno, B. Øksendal (Eds.), *Advanced Mathematical Methods for Finance*, pp. 223–245, Springer, 2011.

[11] A. Papapantoleon, J. Schoenmakers, D. Skovmand: Efficient and accurate log-Lévy approximations for Lévy driven LIBOR models. *Journal of Computational Finance 15*(4), 3–44, 2012.

[12] Z. Grbac, A. Papapantoleon: A tractable LIBOR model with default risk. *Mathematics and Financial Economics 7*, 203–227, 2013.

[13] S. Drapeau, M. Kupper, A. Papapantoleon: A Fourier approach to the computation of conditional value-at-risk and optimized certainty equivalents. *Journal of Risk 16*(6), 3–29, 2014.

[14] A. Papapantoleon: Computation of copulas by Fourier methods. In K. Glau, M. Scherer, R. Zagst (Eds.), *Innovations in Quantitative Risk Management*, pp. 347–354, Springer, 2015.

[15] Z. Grbac, A. Papapantoleon, J. Schoenmakers, D. Skovmand: Affine LIBOR models with multiple curves: theory, examples and calibration. *SIAM Journal on Financial Mathematics 6*, 984–1025, 2015.

[16] K. Glau, Z. Grbac, A. Papapantoleon: A unified view of LIBOR models. In J. Kallsen, A. Papapantoleon (Eds.), *Advanced Modelling in Mathematical Finance – In Honour of Ernst Eberlein*, pp. 423–452, Springer, 2016.

[17] M. Anthropelos, M. Kupper, A. Papapantoleon: An equilibrium model for spot and forward prices of commodities. *Mathematics of Operations Research 43*, 152–180, 2018.

[18] T. Lux, A. Papapantoleon: Improved Fréchet–Hoeffding bounds for d-copulas and applications in model-free finance. *The Annals of Applied Probability 27*, 3633–3671, 2017.

[19] A. Papapantoleon, R. Wardenga: Continuous tenor extension of affine LIBOR models with multiple curves and applications to XVA. *Probability, Uncertainty and Quantitative Risk 3*:1, 1–28, 2018.

[20] Y. Armenti, S. Crépey, S. Drapeau, A. Papapantoleon: Multivariate shortfall risk allocation and systemic risk. *SIAM Journal on Financial Mathematics 9*, 90–126, 2018.

[21] J. Hok, P. Ngare, A. Papapantoleon: Expansion formulas for European quanto options in a local volatility FX-LIBOR model. *International Journal of Theoretical and Applied Finance 21*, 1850017, 1–43, 2018.

[22] A. Papapantoleon, D. Possamaï, A. Saplaouras: Existence and uniqueness results for BSDE with jumps: The whole nine yards. *Electronic Journal of Probability 23*, 121, 1–68, 2018.

[23] T. Lux, A. Papapantoleon: Model-free bounds on Value-at-Risk using extreme value information and statistical distances. *Insurance: Mathematics and Economics 86*, 73–83, 2019.

[24] A. Papapantoleon, D. Possamaï, A. Saplaouras: Stability results for martingale representations: The general case. *Transactions of the AMS 372*, 5891–5946, 2019.

2.4. **Preprints.**

[P1] D. Bartl, M. Kupper, T. Lux, A. Papapantoleon: Marginal and dependence uncertainty: bounds, optimal transport, and sharpness. Preprint, `arXiv:1709.00641`, 2017.

[P2] A. Papapantoleon, P. Yanez Sarmiento: Detection of arbitrage opportunities in multi-asset derivatives markets. Preprint, `arXiv:2002.06227`, 2020.

[P3] A. Neufeld, A. Papapantoleon, Q. Xiang: Model-free bounds for multi-asset options using option-implied information and their exact computation. Preprint, `arXiv:2006.14288`, 2020.

2.5. **Working paper.**

[W1] A. Papapantoleon, D. Skovmand: Picard approximation of SDEs and application to LIBOR models. Preprint, `arXiv:1007.3362`, 2010.

2.6. **Conference proceedings and other volumes.**

[C1] A. Papapantoleon, M. Siopacha: Strong Taylor approximation of SDEs and application to the Lévy LIBOR model. In M. Vanmaele et al. (Eds.), *Proceedings of the Actuarial and Financial Mathematics Conference*, pp. 47–62, 2010.

[C2] A. Papapantoleon, D. Skovmand: Numerical methods for the Lévy LIBOR model. In M.R. Guarracino et al. (Eds.), *Euro-Par 2010, Parallel Processing Workshops*, LNCS 6586, pp. 463–470, Springer, 2011.

[C3] P. Friz, M. Keller-Ressel, A. Papapantoleon: Affine and beyond affine processes in finance: LIBOR modeling and stochastic volatility. In P. Deuflhard et al. (Eds.), MATH-EON – *Mathematics for Key Technologies*, pp. 299–313, EMS, 2014.

[C4] A. Papapantoleon: Improved Fréchet–Hoeffding bounds and model-free finance. *Oberwolfach Reports 14*, 735–736, EMS, 2017.

3. THIRD-PARTY FUNDING

3.1. Research projects.

- **Project coordinator** of the IKYDA program 54718970: *Stochastic analysis in finance and physics*. Funding period: 2012–2013, Volume: €10K.
- **Principal investigator** of the MATHEON project E13: *Affine processes in finance: LIBOR modeling and estimation*. Funding period: 2012–2013, Volume: €100K.
- **Principal investigator** and **board member** of the DFG RTG 1845: *Stochastic analysis with applications in biology, finance and physics*. Funding period: 2012–2017, Volume: €4.2 Mio (15 PIs).
- **Project coordinator** of the PROCOPE program 57050542: *Financial markets in transition: mathematical models & challenges*. Funding period: 2014–2015, Volume: €10K.
- **Project co-leader** of the Europlace Institute of Finance project: *Post-crisis models for interest rate markets*. Funding period: 2014–2015, Volume: €10K.
- **Principal investigator** of the Europlace Institute of Finance project: *Collateral management in centrally cleared trading*. Funding period: 2016–2017, Volume: €10K.
- **Principal investigator** of the Europlace Institute of Finance project: *Interest Rate Term Structures in a Low-Rate Environment: Modelling, Calibration and Regulatory Aspects*. Funding period: 2018–2020, Volume: €10K.
- **Principal investigator** of the HFRI project: *New Paradigms in Mathematical Finance: Modeling, Analysis, Computation*. Funding period: 2020–2022, Volume: €170K.

3.2. Grants (to organize workshops).

- Grant from the ESF program '*Random Geometry of Large Interacting Systems and Statistical Physics*' for the workshop 'Stochastic Methods in Finance and Physics', Jul 2013.
- Grants from the DAAD program '*Hochschuldialog mit Südeuropa*' for the workshops 'Stochastic Methods in Finance and Physics', Jul 2013 & Jul 2015
- Grant from the DFG for the workshop 'Advanced Modeling in Mathematical Finance', May 2015.

3.3. Travel grants (to attend international conferences and schools).

- 3rd World Congress, Bachelier Finance Society, Chicago, USA, 2004
- 4th Symposium on Lévy processes, Manchester, UK, 2005
- Dimitsana summer school, Thermo, Greece, 2005
- 4th World Congress, Bachelier Finance Society, Tokyo, Japan, 2006
- Financial modeling with jump processes, Paris, France, 2006
- Credit risk under Lévy models, ICMS, Edinburgh, Scotland, 2006
- European summer school in financial mathematics, Paris, France, 2008
- European summer school in financial mathematics, Paris, France, 2009
- Actuarial and Financial Mathematics Conference, Brussels, Belgium, 2010
- Thematic Program on Quantitative Finance, Fields Institute, Canada, 2010
- Commodity Markets and their Financialization, IPAM, UCLA, USA, 2015

4. TEACHING EXPERIENCE

4.1. Lecture courses.

- **Stochastic Differential Equations and Applications**, SS 2019, SS 2020 (with M. Loulakis), NTUA.
- **Financial Mathematics**, SS 2018, WS 2018/19, WS 2019/20, WS 2020/21, NTUA.
- **Stochastic Numerics and Applications**, WS 2018/19, WS 2019/20, WS 2020/21 (with A. Saplaouras), NTUA.
- **Mathematical Economics**, WS 2017/18, NTUA.
- **Numerical Methods for Finance**, WS 2017/18, NTUA.
- **Probability Theory and Statistics** (EECS), WS 2017/18, WS 2018/19, WS 2019/20, WS 2020/21, NTUA.
- **Finanzmathematik:** WS 2016, U Mannheim.
- **Finanzmathematik I:** WS 2014/15, WS 2015/16, TU Berlin.
- **Finanzmathematik II:** SS 2013, SS 2017, TU Berlin.
- **Stochastic analysis for jump processes:** WS 2012/13, TU Berlin.
- **Computational Finance:** SS 2011, SS 2012, SS 2013 (with Ch. Bayer), SS 2014 (with Ch. Bayer), SS 2015, SS 2016 (with Ch. Bayer), TU Berlin.
- **Lévy processes:** WS 2009/10, WS 2011/12, TU Berlin.
- **Finanzmathematik II–zeitstetige Modelle:** SS 2009, TU Vienna.

4.2. Seminars.

- **BSDEs and non-linear PDEs** WS 2019/20, NTUA.
- **Optimal Transport:** WS 2018/19, NTUA.
- **Wirtschaftsmathematik:** WS 2016, U Mannheim.
- **Interest Rate Theory**, WS 2014/15, TU Berlin.
- **Mathematical Finance**, WS 2012/13, WS 2013/14, TU Berlin.
- **Mathematical and Computational Finance**, WS 2011/12, SS 2015, SS 2016, TU Berlin.

5. SUPERVISION AND MENTORING

5.1. Post-docs.

- **Samuel Drapeau**, TU Berlin, 2013–2015 (TU Berlin funding). Now: Associate Professor, Shanghai Jiao Tong University, China.
- **Zorana Grbac**, TU Berlin, 2012–2013 (MATHEON funding). Now: Maître de Conférences, Université Paris VII, France.
- **Christoph Mainberger**, TU Berlin, 2013–2015 (TU Berlin funding). Now: Attaché, German Foreign Office, Germany.
- **Philipp Ngare**, TU Berlin, 2014 (Einstein–IMU fellowship). Now: Assistant Professor, University of Nairobi, Kenya.
- **Alexandros Saplaouras**, NTU Athens, 2020– (HFRI funding).

5.2. PhD students.

- **Thibaut Lux**, TU Berlin (RTG funding). Thesis: *Model uncertainty, Fréchet–Hoeffding bounds and applications in mathematical finance.* Defended Feb 2017. First job: Post-doc, Vrije Universiteit Brussel, Belgium.
- **Alexandros Saplaouras**, TU Berlin (RTG and TU Berlin funding). Thesis: *Backward stochastic differential equations with jumps are stable.* Defended Jul 2017. First job: Term Assistant Professor, University of Michigan, USA.
- **Evangelia Dragazi**, NTU Athens, ongoing.
- **Stefanos Theodorakopoulos**, NTU Athens, ongoing.
- **Stavros Rozakis**, NTU Athens, ongoing.

5.3. Bachelor students.

1. A. Ulbricht: *Randomisierte Quasi-Monte Carlo methoden*. TU Berlin, 2012.
2. V. Komoll: *Betrachtung des Ruinproblems mit Hilfe von Lévy prozessen unter einbeziehung von Steuern*. TU Berlin, 2013.
3. M. Gawlik: *Große Abweichungen und Ihre Anwendung mit der Monte Carlo Simulation*. TU Berlin, 2013.
4. N. Schulze: *Darstellungen partieller Differentialgleichungen von Derivaten mit bilateralen Kontrahentrisiko und Finanzierungskosten*. TU Berlin, 2013.
5. K. Uhlig: *Ruinwahrscheinlichtkeit im Cramér–Lundberg-Modell unter Anwendung von Lévy-Prozessen*. TU Berlin, 2013.
6. D. N. R. Nguyen: *Pricing options in a Black–Scholes economy*. TU Berlin, 2014.
7. M. Eckardt: *Schätzverfahren in der Lebensversicherung – Analyse von Sterblichkeiten*. TU Berlin, 2014.
8. N. Galinkin: *Bewertung von Amerikanischen Optionen mit hilfe von Regressionsmethoden*. TU Berlin, 2014.
9. M. L. Gálvez: *Credibility Theory*. TU Berlin, 2014.
10. E. Bindereif: *Short-rate models: Theory, comparison and applications*. TU Berlin, 2015.
11. A. Tschkalow: *Ein Binomialbaum für das CEV-Modell*. TU Berlin, 2015.
12. D. Eggebrecht: *Das Reflektionsprinzip der Brown'schen Bewegung und seine Anwendungen*. TU Berlin, 2015.
13. K. Jürgensen: *Monte Carlo Simulation in der Bewertung von pfadabhängigen Derivaten*. TU Berlin, 2015.
14. P. A. Nguyen: *Zinsstrukturmodelle in diskreter Zeit*. TU Berlin, 2015.
15. T. Marggraff: *Konstruktion von Termistrukturkurven für Zinssätze mit Bezug auf die Praxis*. TU Berlin, 2015.
16. T. Gommes: *European option pricing: A novel calibration method of the Heston–Hull–White model via multilevel dimension reduction Monte-Carlo*. TU Berlin, 2016.
17. T. Hellberg: *Optimales Stoppen in diskreter Zeit und Anwendungen*. TU Berlin, 2016.
18. N. Hömberg: *Numerical methods for parametric option pricing*. TU Berlin, 2016.

5.4. Diploma & Integrated Master students.

19. H. Zhao: *Nutzenmaximierung in volständigen und unvolständigen Märkten*. TU Berlin, 2012.
20. A. Gesch: *Herleitung einer unternehmenseigenen Sterbetafel für Rentenversicherungen*. TU Berlin, 2012.
21. M. Liermann: *Valuation of swaptions in affine LIBOR models*. TU Berlin, 2013.
22. M. Razouk: *Multifaktormodelle für Stochastische Varianzen im Risikomanagement: Maximum-Entropie-Ansatz und Lévy Prozesse*. TU Berlin, 2013.
23. B. Skrobonja: *Valuation of options with Fourier methods using the β-class of Lévy processes*. TU Berlin, 2013.
24. M. Karakoyun: *Vergleich von Diskretisierungsverfahren am Heston model*. TU Berlin, 2014.
25. M. Ntaoutis: *Improved Fréchet–Hoeffding bounds and model-free pricing of options*. NTU Athens, 2019
26. I. Voutsinas: *Diagnosis and treatment of systemic risk*. NTU Athens, 2019
27. F. Alexopoulou: *Statistical analysis of cryptocurrencies*. NTU Athens, 2019.
28. A. Boutsinis: *Numerical methods for estimating nested expectations*. NTU Athens, 2020.
29. A. Lymperis: *Designing optimal trading policies for wind energy producers*. NTU Athens, 2020.
30. N. Nikolopoulos: *Improved model-free bounds for financial derivatives*. NTU Athens, 2020.

5.5. Master students.

31. A. Saplaouras: *Lévy processes and G-Lévy processes*. NTU Athens, 2012.
32. C. Weiser: *Ein mehrperiodisches Banken-Run-model für das Liquiditätsrisiko*. TU Berlin, 2012.
33. M.-S. Männer: *High-order discretization scheme for the Lévy LIBOR model*. TU Berlin, 2013.
34. T. Lux: *Copulas, Fréchét bounds and applications in robust option pricing*. TU Berlin, 2013.
35. C. Chalvatzis: *Utility-based shortfall risk: Implementation using stochastic and deterministic root-finding algorithms and Fourier transforms*. NTU Athens, 2013.
36. D. Meimaris: *Technical analysis and its applications in foreign exchange markets*. NTU Athens, 2014.

37. R. Tonnang: *Risikomanagement bezüglich des Conditional Value-at-Risk in Lévy modellen*. TU Berlin, 2014.
38. R. Wardenga: *CVA computations in affine LIBOR models*. TU Berlin, 2014.
39. P. Ngono Abe: *Modeling operational risk*. TU Berlin, 2014.
40. J. Papke: *Effizientes Hedging in Lévy modellen*. TU Berlin, 2014.
41. J. L. Chen: *Modellierung von LIBOR-Raten mit stochastischem Basis Spread*. TU Berlin, 2014.
42. D. Bendrick: *Bepreisung von Optionen in Märkten mit Counterparty Risk*. TU Berlin, 2014.
43. K. Al Zoukra: *Anwendung stochastischer Algorithmen in der Finanzmathematik*. TU Berlin, 2014.
44. V. Komoll: *High-order simulation schemes for LIBOR models*. TU Berlin, 2014 (with C. Bayer).
45. C. Schroller: *Feynman–Kac representation for minimal supersolutions of BSDEs*. TU Berlin, 2014 (with S. Drapeau) .
46. K. Zaidi: *Approximate hedging in affine models*. TU Berlin, 2014.
47. S. Diop: *Minimal supersolutions of convex BSDEs driven by discontinuous martingales*. TU Berlin, 2015 (with S. Drapeau) .
48. P. Christodoulou: *Backward stochastic differential equations in finance and a regression-based Monte Carlo method*. TU Berlin, 2015 (with A. Saplaouras).
49. M. Gerdes: *Valuation of Asian options in affine stochastic volatility models*. TU Berlin, 2015.
50. V. Badonfai: *Importance sampling and applications in mathematical finance*. TU Berlin, 2015.
51. E. G. Din: *On the valuation of swaptions in affine LIBOR models*. TU Berlin, 2015.
52. P. Hinterberger: *Multivariate stochastic volatility models, copulas and applications in finance*. TU Berlin, 2015.
53. R. Breese: *Multi-Asset Optionsbewertung mit Hilfe von Fourier-Methoden und Lévy-Copulas*. TU Berlin, 2015 (with T. Lux).
54. P. Pietzner: *Kosteneffiziente Strategien im multivariaten Black–Scholes Modell*. TU Berlin, 2015 (with T. Lux).
55. S. Passenheim: *Pricing of derivatives with collateral and counterparty credit risk*. TU Berlin, 2016.
56. J. Sommer: *The valuation of the write-up feature of a contingent convertible*. TU Berlin, 2016 (with K. Bannör).
57. R. Polzin: *Error analysis in Fourier methods for multidimensional option pricing*. TU Berlin, 2016.
58. J. Jonczyk: *Bounds on Value-at-Risk using the Rearrangement Algorithm*. TU Berlin, 2016 (with T. Lux).
59. M. Schwend: *Bounds on Value-at-Risk using Copulas*. TU Berlin, 2016 (with T. Lux).
60. S. Sahin: *Approximative Optionsbepreisung im Lévy LIBOR Modell*. TU Berlin, 2017.
61. P. Yanez: *Copulas and their applications to multi-asset derivatives.* TU Berlin, 2017 (with T. Lux).
62. A. Tsckalow: *Die charakteristische Funktion des Rough-Heston-Modells*. TU Berlin, 2017.
63. M. Geelhaar: *A Heston-type multiple curve HJM model*. TU Berlin, 2018 (with K. Hoffmann – Deloitte).
64. B. Stratmann: *Local and stochastic volatility modeling for commodity derivatives*. TU Berlin, 2018 (with S. Neubeck – Deutsche Bank).
65. N. Hömberg: *Valuation of basket options with radial basis functions*. TU Berlin, 2018.
66. G. Spais: *Affine Volterra processes*. NTU Athens, 2019.

5.6. **Visitors.**

67. R. Poirson: *Finite elements solution of partial integro-differential equations for pricing options on Lévy-driven assets*. ENSTA Paris, 2012.
68. E. Buzarevičius: *Pricing of Multidimensional Options using Fourier Methods and Sparse Grids*. University of Nice-Sophia Antipolis, 2014.
69. Y. Gong: *Improved Value-at-Risk bounds using extreme value theory*. KAUST, 2017 (with T. Lux).
70. J. Papazoglou-Hennig: *Machine learning methods in finance*. TU München, 2020.

6. TALKS AT CONFERENCES, SEMINARS AND SCHOOLS

More than 140 talks at conferences, workshops, schools and departmental seminars around the world. A complete list of talks, including their titles, can be found here:

http://www.math.ntua.gr/~papapan/talks.html.

A selection of invited and contributed talks, follows below:

Invited presentations at international conferences and schools (since 2010; selected).

- MathFinance Digital Conference, 2020, 2021.
- Dependence Modelling in Finance and Insurance, Agkistri, Greece, 2019.
- Summer School on Lévy processes, Athens, Greece, 2019 (mini-course).
- Frontier Areas in Financial Analytics, Fields Institute, Toronto, Canada, 2019.
- Branching Processes and Related Topics, Shanghai, China, 2018.
- Mathematics of Quantitative Finance, Oberwolfach, Germany, 2017 (**invitation-only event**).
- Vienna Congress on Mathematical Finance, Vienna, Austria, 2016.
- Frontiers in Stochastic Modelling for Finance, Padova, Italy, 2016.
- 12th Summer School in Stochastic Finance, AUEB, Athens, Greece, 2015.
- Information in Finance and Insurance, Institute Louis Bachelier, Paris, France, 2015.
- Challenges in Derivatives Markets, TU Munich, Germany, 2015 (**keynote speaker**).
- Statistical Inference for Lévy Processes, Lorentz Center, Leiden, Holland, 2014.
- New Directions in Financial Mathematics and Mathematical Economics, BIRS, Banff, Canada, 2014 (**invitation-only event**).
- Miniworkshop on Advances in LIBOR Modeling, Munich, Germany, 2013.
- 2nd Sino-German Workshop on Optimization, Modeling, Methods and Applications in Industry and Management, Beijing, China, 2012.
- Summer School on 'Dependence Modeling', TU Munich, Germany, 2012.
- Risk and Stochastics Conference, LSE, London, UK, 2012.
- Conference on Liquidity and Credit Risk, Freiburg, Germany, 2012.
- Workshop on Interest Rates and Credit Risk, Chemnitz, Germany, 2011.
- Humboldt–Princeton Conference, Berlin, Germany, 2011.
- International Symposium 'Vision in Stochastics', Steklov Math. Inst., Moscow, Russia, 2010.
- 5th Int. Workshop on Applied Probability, Madrid, Spain, 2010 (**invited section speaker**).
- Recent Advances in Mathematical Finance, Aarhus Business School, Denmark, 2010.

Contributed presentations at international conferences (selected).

- World Congresses, Bachelier Finance Society, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018.
- German Probability and Statistics Days, 2008, 2010, 2014, 2016, 2018.
- Advances in Mathematics of Finance, Poland, 2007, 2013.
- Quantitative Methods in Finance, Sydney, Australia, 2009.

Invited presentations at university seminars (selected).

- Carnegie Mellon University, Cass Business School, École Polytechnique, ETH Zürich, Frankfurt MathFinance Colloquium, Imperial College London, London Math Finance Seminar, Osaka University, Princeton University, Séminaire Bachelier Paris, Shanghai Jiao Tong University, University of Padova.

7. ADDITIONAL PROFESSIONAL ACTIVITIES & DUTIES

7.1. **Organizational activities.**

- **Organizer:** contributed session on *Lévy and affine processes in finance*, 33rd Conference on Stochastic Processes and their Applications, Berlin, Germany, 27–31 Jul 2009.
- **Organizer:** mini-course on *Second-order BSDEs, jump uncertainty and applications in finance*, by Dylan Possamai (Paris IX), Berlin, Germany, 16–18 Apr 2013.
- **Co-organizer:** *Stochastic Methods in Finance and Physics*, ACMAC, Heraklion, Greece, 15–19 Jul 2013.
- **Co-organizer:** *1st Berlin-Singapore Workshop on Quantitative Finance and Financial Risk*, Berlin, Germany, 21–24 May 2014.
- **Organizer:** mini-course on *Lévy processes and optimal stopping*, by Erik Baurdoux (LSE), Berlin, Germany, 26–30 May 2014.
- **Co-organizer:** contributed session on *Risk and performance measures and related fields*, SIAM Conference on Financial Mathematics and Engineering, Chicago, USA, 13–15 Nov 2014.
- **Organizer:** mini-course on *Dependence modeling with applications to portfolio choice & risk management*, by Carole Bernard (Grenoble). Berlin, Germany, 11–15 May 2015.
- **Co-organizer**: *Advanced Modelling in Mathematical Finance*, Kiel, Germany, 20-22 May 2015.
- **Co-organizer:** *Stochastic Methods in Finance and Physics*, Heraklion, Greece, 20–24 Jul 2015.
- **Organizer:** mini-course on *Dependence, Risk Bounds, Optimal Allocations and Portfolios*, by Ludger Rüschendorf (Freiburg). Berlin, Germany, 10–12 May 2016.
- **Co-organizer:** *Berlin-Paris young researchers workshop on stochastic analysis and applications in biology and finance*, Berlin, Germany, 2–4 Nov 2016.
- **Co-organizer:** *Recent Developments in Numerical Methods with Applications in Statistics and Finance*, Mannheim, Germany, 8–9 Jun 2017.
- **Co-organizer:** invited session on *Mathematical Finance*, 1st Congress of Greek Mathematicians. Athens, Greece, 25–30 Jun 2018.
- **Co-organizer:** Summer School on *Numerical Analysis for Deterministic and Stochastic Differential Equations*, NTUA, Athens, Greece, 10–13 Jul 2018.
- **Co-organizer:** *Stochastic Methods in Finance and Physics*, FORTH, Heraklion, Greece, 23–27 Jul 2018.
- **Co-organizer:** *Mathematics, Applied or Knot*, NTUA, Athens, Greece, 8 Oct 2018.
- **Organizer:** mini-course on *Interest Rate Modelling*, by Wolfgang Runggaldier (Padova). Athens, Greece, 13–17 May 2019.
- **Co-organizer:** invited session on *Mathematical Finance*, 10th International Workshop on Applied Probability, Thessaloniki, Greece, TBA.
- **Co-organizer:** *Modeling, Learning and Understanding: Modern Challenges between Financial Mathematics, Financial Technology and Financial Economics*, BIRS, Banff, Canada, TBA **(invitation-only event)**.

7.2. **Reviewing activities.**

- **Co-Editor** for the *Newsletter of the Bachelier Finance Society*.
- **Referee** for *Annals of Applied Probability; Annals of Finance; Annals of Operations Research; Applied Mathematical Finance; Decisions in Economics and Finance; Electronic Communications in Probability; European J. of Finance; Finance and Stochastics; IMA J. of Management Mathematics; INFORMS Journal on Computing; Int. J. of Portfolio Analysis and Management; Int. J. of Theoretical and Applied Finance; J. of Applied Mathematics; J. of Banking and Finance; J. of Computational Finance; J. of Economic Dynamics and Control; J. of Futures*

Markets J. of Risk; *Mathematical Finance*; *Mathematical Methods in Applied Sciences*; *Mathematics and Financial Economics*; *Methodology and Computing in Applied Probability*; *Monte Carlo Methods and Applications*; *Physica A*; *Proceedings of the Royal Society A*; *Probability, Uncertainty and Quantitative Risk*; *Quantitative Finance*; *Review of Derivatives Research*; *Science China Mathematics*; *SIAM J. on Control and Optimization*; *SIAM J. on Financial Mathematics*; *Statistica Neerlandica*; *Statistics and Decisions*; *Statistics and Probability Letters*; *Stochastic Processes and their Applications*; *Stochastics*; *Studies in Nonlinear Dynamics and Econometrics*.

- **Referee** for Research Proposals, Books, and Evaluations: *Netherlands Organisation for Scientific Research (NWO)*, *Springer*, *Wiley*, *KU Leuven*, *Charles University Prague*.
- **Reviewer** for *Zentralblatt MATH* and *Mathematical Reviews*.
- **Member** of the PhD committees for Giulio Miglietta (U Padova), Louis Bhim (U Sydney), Clément Ménassé (U Paris VII), Nikolaos Karpathopoulos (U Southampton), and Theodoros Daglis (NTU Athens).

7.3. **Departmental Committees @ NTUA.**

- Christos Papakyriakopoulos Bequest (2018–19)
- Economics (2017–)
- Postgraduate studies (2018–)
- Qualifying Exams in Probability and Statistics (2017–)
- Undergraduate studies (2017–18)
- Webpage and social media (2018–)

7.4. **Short-term visits.**

- Nanyang Technological University, Singapore (2019), University of Michigan, Ann Arbor, USA (2019), KAUST, Saudi Arabia (2017, 2018), Shanghai Jiao Tong University, China (2016), Université Paris VII & IX, France (2015), University of Konstanz, Germany (2014, 2017), London School of Economics, UK (2013), Carnegie Mellon University, USA (2013), Princeton University, USA (2013), University of Padova, Italy (2013), University of Vienna, Austria (2011), Dublin City University, Ireland (2011), École des Ponts, Marne-la-vallée, France (2011), Université d'Évry, France (2011), École Polytechnique, Paris, France (2010), Aarhus School of Business, Denmark (2010), ETH Zürich, Switzerland (2009), University of Osaka, Japan (2009), University of Kiel, Germany (2009), Technical University, Athens, Greece (2009), RICAM, Linz, Austria (2008), Humboldt University, Berlin, Germany (2008), Technical University, Athens, Greece (2008), University of Freiburg, Germany (2008), Heriot–Watt University, UK (2006).

7.5. **Memberships.**

- Bachelier Finance Society
- European Mathematical Society
- Hellenic Mathematical Society
- Society for Industrial and Applied Mathematics (SIAM)
- GAMM COMinDS