

Associate Prof. Dr. Sascha Desmettre

List of Publications (as of July 2024)

Books

S. Desmettre, R. Korn (2018), *Lehrbuch, Moderne Finanzmathematik: Theorie und praktische Anwendungen: Band II, Erweiterungen des Black-Scholes Modells, Zins, Kreditrisiko und Statistik*; Springer Verlag.

Peer-reviewed Journal Papers

- [25] **B. Yilmaz, C. Laudagé, R. Korn, S. Desmettre (2024)**, *Electricity GANs: Generative Adversarial Networks for Electricity Price Scenario Generation*, **Commodities**, 3, 254-280, <https://doi.org/10.3390/commodities3030016>.
- [24] **S. Desmettre, M. Steffensen (2023)**, *Equilibrium Investment with Random Risk Aversion*, **Mathematical Finance**, 33(3), 946-975, <https://doi.org/10.1111/mafi.12394>.
- [23] **F. Aichinger, S. Desmettre (2023)**, *Utility Maximization in Multivariate Volterra Models*, **SIAM Journal on Financial Mathematics**, 14(1), 52–98, <https://doi.org/10.1137/21M1464543>.
- [22] **A. Brunhuemer, L. Larcher, P. Seidl, S. Desmettre, J. Kofler, G. Larcher (2022)**, *Supervised Machine Learning Classification for Short Straddles on the S&P500*, **Risks**, 10(12), 235, 25 pages, <https://doi.org/10.3390/risks10120235>.
- [21] **S. Desmettre, J. Wenzel (2021/22)**, *On the Valuation of Discrete Asian Options in High Volatility Environments*, **Applied Mathematical Finance**, 28(6), 508–533, <https://doi.org/10.1080/1350486X.2022.2108858>.
- [20] **S. Desmettre, S. Hochgerner, S. Omerovic, S. Thonhauser (2022)**, *A Mean-Field Extension of the LIBOR Market Model*, **International Journal of Theoretical and Applied Finance**, No. 25, Issue No. 01, Article No. 2250005, <https://doi.org/10.1142/S0219024922500054>.
- [19] **S. Desmettre, M. Wahl, R. Zagst (2022)**, *Dynamic Surplus Optimization with Performance- and Index-Linked Liabilities*, **European Actuarial Journal**, 12, 607–645, <https://doi.org/10.1007/s13385-021-00292-z>.
- [18] **S. Desmettre, G. Leobacher, L.C.G. Rogers (2021)**, *Change of drift in one-dimensional diffusions*, **Finance & Stochastics**, 25(2), 359-381, <https://doi.org/10.1007/s00780-021-00451-w>.
- [17] **S. Desmettre, C. Laudagé, J. Sass (2020)**, *Good Deal Bounds for Option Prices under Value-at-Risk and Expected Shortfall Constraints*, **Risks**, 8(4), 114, 22 pages, <https://doi.org/10.3390/risks8040114>.

- [16] N. Bäuerle, S. Desmettre (2020), *Portfolio Optimization in Fractional and Rough Heston Models*, **SIAM Journal on Financial Mathematics**, 11(1), 240–273, <https://doi.org/10.1137/18M1217243>.
- [15] W. Bock, S. Desmettre, J.L. da Silva (2020), *Integral Representation of Generalized Grey Brownian Motion*, **Stochastics**, 92(4), 552–565, <https://doi.org/10.1080/17442508.2019.1641093>.
- [14] C. Laudagé, S. Desmettre, J. Wenzel (2019), *Severity Modeling of Extreme Insurance Claims for Tariffication*, **Insurance: Mathematics and Economics**, 88, 77–92, <https://doi.org/10.1016/j.insmatheco.2019.06.002>.
- [13] S. Coskun, R. Korn, S. Desmettre (2019), *Application of the Heath-Platen Estimator in the Fong-Vasicek Short Rate Model*, **The Journal of Computational Finance**, 23(1), 1–24, <https://doi.org/10.21314/JCF.2019.366>.
- [12] S. Desmettre, S. Grün, R. Korn (2018), *Portfolio Optimization with Early Announced Discrete Dividends*, **Operations Research Letters**, 44, 548–552, <https://doi.org/10.1016/j.orl.2018.09.001>.
- [11] S. Desmettre, S. Grün, R. Korn (2018), *Can Outstanding Dividend Payments be estimated by American Options?*, **Quantitative Finance**, 18(9), 1437–1446, <https://doi.org/10.1080/14697688.2017.1401226>.
- [10] S. Desmettre, J. de Kock, P. Ruckdeschel, F.T. Seifried (2018), *Generalized Pareto Processes and Fund Liquidity Risk*, **Quantitative Finance**, 18(8), 1327–1343, <https://doi.org/10.1080/14697688.2017.1410214>.
- [9] S. Desmettre, S. Grün, F.T. Seifried (2017), *Estimating Discrete Dividends by No-Arbitrage*, **Quantitative Finance**, 17(2), 261–274, <https://doi.org/10.1080/14697688.2016.1176239>.
- [8] S. Desmettre, R. Korn, J. Varela, N. Wehn (2016), *Nested MC-Based Risk Measurement of Complex Portfolios: Acceleration and Energy Efficiency*, **Risks**, 4(4), 36, 35 pages, <https://doi.org/10.3390/risks4040036>.
- [7] S. Desmettre, M. Deege (2016), *Modeling Redemption Risks of Mutual Funds Using Extreme Value Theory*, **The Journal of Risk**, 18(6), 1–37, <https://doi.org/10.21314/JOR.2016.336>.
- [6] S. Desmettre, F.T. Seifried (2016), *Optimal Asset Allocation with Fixed-Term Securities*, **Journal of Economic Dynamics and Control**, 66, 1–19, <https://doi.org/10.1016/j.jedc.2016.03.001>.
- [5] S. Desmettre, R. Korn, F.T. Seifried (2015), *Lifetime Consumption and Investment for Worst-Case Crash Scenarios*, **International Journal of Theoretical and Applied Finance**, 18(1), 1550004, 30 Seiten, <https://doi.org/10.1142/S0219024915500041>.
- [4] S. Desmettre, R. Korn, P. Ruckdeschel, F.T. Seifried (2015), *Robust Worst-Case Optimal Investment*, **OR Spectrum**, 37(3), 677–701, <https://doi.org/10.1007/s00291-014-0370-y>.
- [3] S. Desmettre (2012), *Optimal Investment for Executive Stockholders with Exponential Utility*, **Decisions in Economics and Finance**, 35(2), 151–170, <https://doi.org/10.1007/s10203-011-0119-x>.
- [2] S. Desmettre, A. Szimayer (2011), *Work Effort, Consumption and Portfolio Selection: When the Occupational Choice Matters*, **Mathematical Methods of Operations Research**, 74(1), 121–145, <https://doi.org/10.1007/s00186-011-0358-1>.

- [1] **S. Desmettre, J. Gould, A. Szimayer (2010)**, *Own-Company Stockholding and Work Effort Preferences of an Unconstrained Executive*, **Mathematical Methods of Operations Research**, 72(3), 347–378, <https://doi.org/10.1007/s00186-010-0322-5>.

Working Papers

- [5] **L. De Gennaro Aquino, S. Desmettre, Y. Havrylenko, M. Steffensen (2024)**, *Equilibrium control theory for Kihlstrom–Mirman preferences in continuous time*, available at <https://arxiv.org/abs/2407.16525>.
- [4] **F. Aichinger, S. Desmettre (2024)**, *Pricing of geometric Asian options in the Volterra-Heston model*, available at <https://arxiv.org/abs/2402.15828>.
- [3] **S. Desmettre, S. Merkel, A. Mickel, A. Steinicke (2023)**, *Worst-Case Optimal Investment in Incomplete Markets*, available at <https://arxiv.org/abs/2311.10021>.
- [2] **C. Laudagé, F. Aichinger, S. Desmettre (2023)**, *A Comparative Study of Factor Models for Different Periods of the Electricity Spot Price Market*, in revision in **Journal of Commodity Markets**, available at <http://arxiv.org/abs/2306.07731>.
- [1] **S. Desmettre, C. Laudagé, J. Sass (2023)**, *Scalarized Utility-Based Multi-Asset Risk Measures*, in Revision in **Scandinavian Actuarial Journal**, available at <https://ssrn.com/abstract=3924271>.

Conference Proceedings (peer-reviewed)

- [3] **J. Varela, N. Wehn, S. Desmettre, R. Korn (2017)**, *Real-Time Financial Risk Measurement of Dynamic Complex Portfolios with Python and PyOpenCL*, 7th Workshop on Python for High-Performance and Scientific Computing (PyHPC '17), Denver (USA).
- [2] **J. Varela, C. Kestel, C. de Schryver, N. Wehn, S. Desmettre, R. Korn (2015)**, *Optimization Strategies for Portable Code for Monte Carlo-Based Value-at-Risk Systems*, Proceedings of the 8th Workshop on High Performance Computational Finance (WHPCF '15), Austin (USA).
- [1] **B. Spangl, S. Desmettre, P. Ruckdeschel (2015)**, *Statistical Models for Dynamics in Extreme Value Processes*, Proceedings of the 30th International Workshop on Statistical Modeling, Linz (Austria), Volume 1, 360–366.

Book Chapters

- [3] **S. Desmettre, R. Horsky, R. Korn (2019)**, *Das Kapitalmarktmodell als Basis der Simulation*, Praxishandbuch Lebensversicherungsmathematik: Simulation und Klassifikation von Produkten, VVW GmbH.
- [2] **S. Desmettre, R. Korn (2015)**, *10 Computational Challenges in Finance*, 'FPGA Based Accelerators for Financial Applications', Springer.
- [1] **S. Desmettre, R. Korn, T. Sayer (2015)**, *Option Pricing in Practice - Heston's Stochastic Volatility Model*, 'Currents in Industrial Mathematics', Springer.

Published Software: R-Packages on CRAN

RobAStRDA: Interpolation Grids for Packages of the RobASt Family, Autoren *P. Ruckdeschel und M. Kohl*, with contributions of S. Desmettre, G. Kroisandt, E. Massini, D. und M. Pupashenko, B. Spangl, Version 1.1.0, 07/2018.

RobExtremes: Optimally Robust Estimation for Extreme Value Distributions, Autoren *P. Ruckdeschel und M. Kohl*, with contr. of S. Desmettre, G. Kroisandt, E. Massini, D. Pupashenko und B. Spangl, Version 1.1.0, 04/2019.