

Publications

Books

- [1] Mathematical Finance. (with J. Kallsen) *Springer Finance*, Springer (2019)
- [2] Dependence in Probability and Statistics. E. Eberlein and M. Taqqu (eds.) *Progress in Probability and Statistics* Vol. 11, Birkhäuser, Basel (1986)
- [3] Probability in Banach Spaces VII. E. Eberlein, J. Kuelbs and M. Marcus (eds.) *Progress in Probability* Vol. 21, Birkhäuser, Boston (1990)
- [4] High Dimensional Probability. E. Eberlein, M. Hahn and M. Talagrand (eds.) *Progress in Probability* Vol. 43, Birkhäuser, Basel (1998)

Journal publications

- [5] The term structure of implied correlations between S&P and VIX markets. (with L. Ballotta and G. Rayée) *Frontiers of Mathematical Finance* 5 (2025) 73–93
- [6] Ruin probabilities for a Sparre Andersen model with investments. (with Y. Kabanov and Th. Schmidt) *Stochastic Processes and their Applications* 144 (2022) 72–84
- [7] Fourier based methods for the management of complex life insurance products. (with L. Ballotta, Th. Schmidt and R. Zeineddine) *Insurance: Mathematics and Economics* 101 (2021) 320–341
- [8] A multiple curve Lévy swap market model. (with Chr. Gerhart and E. Lütkebohmert) *Applied Mathematical Finance* 27(5) (2020) 396–421
- [9] Variable annuities in a Lévy-based hybrid model with surrender risk. (with L. Ballotta, Th. Schmidt and R. Zeineddine) *Quantitative Finance* 20(5) (2020) 867–886
- [10] Multiple curve Lévy forward price model allowing for negative interest rates. (with Chr. Gerhart and Z. Grbac) *Mathematical Finance* 30(1) (2020) 167–195
- [11] Hybrid Lévy models: Design and computational aspects. (with M. Rudmann) *Applied Mathematical Finance* 25(5–6) (2018) 533–556
- [12] A multiple-curve Lévy forward rate model in a two-price economy. (with Chr. Gerhart) *Quantitative Finance* 18(4) (2018) 537–561
- [13] Portfolio theory for squared returns correlated across time. (with D.B. Madan) *Probability, Uncertainty and Quantitative Risk* 1(1) (2016) 1–36
- [14] Computation of Greeks in LIBOR models driven by time-inhomogeneous Lévy processes. (with M. Eddahbi and S.M. Lalaoui Ben Cherif) *Applied Mathematical Finance* 23(3) (2016) 236–260
- [15] Valuation in illiquid markets. *Procedia Economics and Finance* 29 (2015) 135–143

- [16] Bid and ask prices as non-linear continuous time G-expectations based on distortions. (with D.B. Madan, M. Pistorius and M. Yor) *Mathematics and Financial Economics* 8(3) (2014) 265–289
- [17] Variational solutions of the pricing PIDEs for European options in Lévy models. (with K. Glau) *Applied Mathematical Finance* 21(5-6) (2014) 417–450
- [18] Two price economies in continuous time. (with D.B. Madan, M. Pistorius, W. Schoutens and M. Yor) *Annals of Finance* 10 (2014) 71–100
- [19] A simple stochastic rate model for rate equity hybrid products. (with D.B. Madan, M. Pistorius and M. Yor) *Applied Mathematical Finance* 20(5-6) (2013) 461–488
- [20] Modeling risk weighted assets and the risk sensitivity of related capital requirements. (with D.B. Madan and W. Schoutens) *Journal of Risk* 16(2) (2013) 3–23
- [21] Discrete tenor models for credit risky portfolios driven by time-inhomogeneous Lévy processes. (with Z. Grbac and T. Schmidt) *SIAM Journal on Financial Mathematics* 4(1) (2013) 616–649
- [22] Rating based Lévy LIBOR model. (with Z. Grbac) *Mathematical Finance* 23(4) (2013) 591–626
- [23] Unbounded liabilities, capital reserve requirements and the taxpayer put option. (with D.B. Madan) *Quantitative Finance* 12(5) (2012) 709–724
- [24] Dealing with complex realities in financial modeling. (with D.B. Madan) *Current Science* 103(6) (2012) 647–649
- [25] Pricing to acceptability: With applications to valuation of one’s own credit risk. (with T. Gehrig and D.B. Madan) *Journal of Risk* 15(1) (2012) 91–120
- [26] Correlations in Lévy interest rate models. (with M. Beinhofer, A. Janssen and M. Polley) *Quantitative Finance* 11(9) (2011) 1315–1327
- [27] On correlating Lévy processes. (with D.B. Madan) *Journal of Risk* 13(1) (2010) 3–16
- [28] Short positions, rally fears and option markets. (with D.B. Madan) *Applied Mathematical Finance* 17(1-2) (2010) 83–98
- [29] Analysis of Fourier transform valuation formulas and applications. (with K. Glau and A. Papapantoleon) *Applied Mathematical Finance* 17(3) (2010) 211–240
- [30] Mathematik und die Finanzkrise. *Spektrum der Wissenschaft* 12(09) (2009) 92–100
- [31] Hedge fund performance: sources and measures. (with D.B. Madan) *International Journal of Theoretical and Applied Finance* 12(3) (2009) 267–282
- [32] On pricing risky loans and collateralized fund obligations. (with H. Geman and D.B. Madan) *Journal of Credit Risk* 5(3)(2009) 1–18
- [33] Esscher transform and the duality principle for multidimensional semimartingales. (with A. Papapantoleon and A.N. Shiryaev) *Annals of Applied Probability* 19(5) (2009) 1944–1971
- [34] Sato processes and the valuation of structured products. (with D.B. Madan) *Quantitative Finance* 9(1) (2009) 27–42
- [35] On the duality principle in option pricing: Semimartingale setting. (with A. Papapantoleon and A.N. Shiryaev) *Finance and Stochastics* 12(2) (2008) 265–292
- [36] Mathematics in financial risk management. (with R. Frey, M. Kalkbrener, L. Overbeck) *Jahresbericht der Deutschen Mathematiker Vereinigung* 109(4) (2007) 165–193
- [37] The Lévy swap market model. (with J. Liinev) *Applied Mathematical Finance* 14(2) (2007) 171–196

- [38] The Lévy Libor model with default risk. (with W. Kluge and P.J. Schönbucher) *Journal of Credit Risk* 2(2) (2006) 3–42
- [39] A cross-currency Lévy market model. (with N. Koval) *Quantitative Finance* 6 (2006) 465–480
- [40] Symmetries in Lévy term structure models. (with W. Kluge and A. Papapantoleon) *International Journal of Theoretical and Applied Finance* 9(6) (2006) 967–986
- [41] Exact pricing formulae for caps and swaptions in a Lévy term structure model. (with W. Kluge) *Journal of Computational Finance* 9(2) (2006) 99–125
- [42] Valuation of floating range notes in Lévy term structure models. (with W. Kluge) *Mathematical Finance* 16 (2006) 237–254
- [43] The Lévy Libor model. (with F. Oezkan) *Finance and Stochastics* 9 (2005) 327–348
- [44] Lévy term structure models: No-arbitrage and completeness. (with J. Jacod and S. Raible) *Finance and Stochastics* 9 (2005) 67–88
- [45] Equivalence of floating and fixed strike Asian and lookback options. (with A. Papapantoleon) *Stochastic Processes and Their Applications* 115 (2005) 31–40
- [46] Both sides of the fence: a statistical and regulatory view of electricity risk. (with G. Stahl) *Energy & Power Risk Management* 8(6) (2003) 34–38
- [47] Risk management based on stochastic volatility. (with J. Kallsen, J. Kristen) *Journal of Risk* 5(2) (2003) 19–44
- [48] Time consistency of Lévy models. (with F. Oezkan) *Quantitative Finance* 3 (2003) 40–50
- [49] The defaultable Lévy term structure: Ratings and restructuring. (with F. Oezkan) *Mathematical Finance* 13 (2003) 277–300
- [50] Term structure models driven by general Lévy processes. (with S. Raible) *Mathematical Finance* 9 (1999) 31–54
- [51] Grundideen moderner Finanzmathematik. *Mitteilungen der DMV* 98(3) (1998) 10–20
- [52] New insights into smile, mispricing and value at risk: The hyperbolic model. (with U. Keller and K. Prause) *Journal of Business* 71 (1998) 371–405
- [53] On the range of options prices. (with J. Jacod) *Finance and Stochastics* 1 (1997) 131–140
- [54] Hyperbolic distributions in finance. (with U. Keller) *Bernoulli* 1 (1995) 281–299
- [55] On modelling questions in security valuation. *Mathematical Finance* 2 (1992) 17–32
- [56] Strong approximation of continuous time stochastic processes. *Journal of Multivariate Analysis* 31 (1989) 220–235
- [57] On strong invariance principles under dependence assumptions. *Annals of Probability* 14 (1986) 260–270
- [58] Weak convergence of partial sums of absolutely regular sequences. *Statistics & Probability Letters* 2 (1984) 291–293
- [59] Strong approximation of very weak Bernoulli processes. *Zeitschrift f. Wahrscheinlichkeitstheorie verw. Geb.* 62 (1983) 17–37
- [60] An invariance principle for lattices of dependent random variables. *Zeitschrift f. Wahrscheinlichkeitstheorie verw. Geb.* 50 (1979) 119–133
- [61] A note on strongly mixing lattices of random variables. (with A. Csenki) *Zeitschrift f. Wahrscheinlichkeitstheorie verw. Geb.* 50 (1979) 135–136
- [62] Random sheets. *Zeitschrift f. Wahrscheinlichkeitstheorie verw. Geb.* 40 (1977) 147–155

- [63] On topological entropy of semigroups of commuting transformations. *Astérisque* 40 (1976) 17–62
- [64] A generator theorem for flows. *Boletim da Soc. Bras. de Matematica* 5 (1974) 45–50
- [65] Ergodic flows are strictly ergodic. (with M. Denker) *Advances in Mathematics* 13 (1974) 437–473
- [66] Einbettung von Strömungen in Funktionenräume durch Erzeuger vom endlichen Typ. *Zeitschrift f. Wahrscheinlichkeitstheorie verw. Geb.* 27 (1973) 277–291
- [67] Toeplitz-Folgen und Gruppentranslationen. *Archiv der Mathematik* 22 (1971) 291–301

Proceedings and equivalent publications

- [68] A Lévy-driven asset price model with bankruptcy and liquidity risk. (with P. Bäurer) In *From Statistics to Mathematical Finance*, D. Ferger, W.G. Manteiga, Th. Schmidt, J.-L. Wang (eds.), Springer 2017, pp. 387–416
- [69] Option pricing and sensitivity analysis in the Lévy forward process model. (with M’hamed Eddahbi and Sidi Mohamed Lalaoui Ben Cherif) In *Innovations in Derivatives Markets*, K. Glau, Z. Grbac, M. Scherer, R. Zagst (eds.), Springer Proceedings in Mathematics and Statistics 2016, pp. 285–313
- [70] Maximally acceptable portfolios. (with D.B. Madan) In *Inspired by Finance. The Musiela Festschrift*, Y. Kabanov, M. Rutkowski, T. Zariphopoulou (eds.), Springer 2014, pp. 257–272
- [71] Fourier based valuation methods in mathematical finance. In *Quantitative Energy Finance*, F. Benth, V. Kholodnyi, P. Laurence (eds.), Springer 2013, pp. 85–114
- [72] The distribution of returns at longer horizons. (with D.B. Madan) In *Recent Advances in Financial Engineering 2010*, M. Kijima, C. Hara, Y. Muromachi, H. Nakaoka, K. Nishide (eds.), World Scientific 2011, pp. 1–18
- [73] Analyticity of the Wiener–Hopf factors and valuation of exotic options in Lévy models. (with K. Glau and A. Papapantoleon) In *Advanced Mathematical Methods for Finance*, G. Di Nunno, B. Øksendal (eds.), Springer 2011, pp. 223–245
- [74] Generalized hyperbolic models. In *Encyclopedia of Quantitative Finance*, R. Cont (ed.), John Wiley & Sons 2010, pp. 833–836
- [75] Jump processes. In *Encyclopedia of Quantitative Finance*, R. Cont (ed.), John Wiley & Sons 2010, pp. 990–994
- [76] Jump-type Lévy processes. In *Handbook of Financial Time Series*, T. G. Andersen, R. A. Davis, J.-P. Kreiß, T. Mikosch (eds.), Springer 2009, pp. 439–455
- [77] Advanced credit portfolio modeling and CDO pricing. (with R. Frey and E.A. von Hammerstein) In *Mathematics – Key Technology for the Future*, W. Jäger, H.-J. Krebs (eds.), Springer 2008, pp. 253–280
- [78] Calibration of Lévy term structure models. (with W. Kluge) In *Advances in Mathematical Finance: In Honor of D.B. Madan*, M. Fu, R.A. Jarrow, J.-Y. Yen, R.J. Elliott (eds.), Birkhäuser 2007, pp. 147–172
- [79] Symmetries and pricing of exotic options in Lévy models. (with A. Papapantoleon) In *Exotic option pricing and advanced Lévy models*, A. Kyprianou, W. Schoutens, P. Wilmott (eds.), Wiley 2005, pp. 99–128

- [80] Generalized hyperbolic and inverse Gaussian distributions: Limiting cases and approximation of processes. (with E.A. von Hammerstein) In *Seminar on Stochastic Analysis, Random Fields and Applications IV*, Progress in Probability 58, R.C. Dalang, M. Dozzi, F. Russo (eds.), Birkhäuser 2004, pp. 221–264
- [81] The generalized hyperbolic model: Financial derivatives and risk measures. (with K. Prause) In *Mathematical Finance – Bachelier Congress 2000*, H. Geman, D. Madan, S. Pliska, T. Vorst (eds.), Springer 2002, pp. 245–267
- [82] Some analytic facts on the generalized hyperbolic model. (with S. Raible) In *Proceedings of the 3rd European Meeting of Mathematics, Progress in Mathematics* 202, C. Casacuberta, et al. (eds.), Birkhäuser 2001, pp. 367–378
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- [84] Application of generalized hyperbolic Lévy motions to finance. In *Lévy Processes: Theory and Applications*, O.E. Barndorff-Nielsen, T. Mikosch, S. Resnick (eds.), Birkhäuser 2001, pp. 319–337
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- [86] A tailored suit for risk management: The hyperbolic model. (with J. Breckling, P. Kokic) In *Measuring risk in complex stochastic systems*, J. Franke, W. Härdle, G. Stahl (eds.), Lecture Notes in Statistics 147, Springer 2000, pp. 189–202
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- [88] On the covariance function of Banach space valued very weak Bernoulli processes. In *Probability in Banach Spaces VI*, A. Beck, K. Jacobs (eds.), Lecture Notes in Mathematics 990, Springer 1983, pp. 84–91
- [89] A lemma concerning weak limit theorems for partial sums of φ -mixing sequences of random variables. In *Proceedings of the Colloquium on Limit Theorems in Probability and Statistics*, Veszprem 1982, pp. 449–456
- [90] Some new results in the theory of flows on measure spaces. In *Atas do 9. Coloquio Bras. de Matematica*, Poços de Caldas, 1973, pp. 397–402

Obituary

- [91] Konrad Jacobs (1928 – 2015). (with H. Föllmer, M. Keane, U. Krengel and V. Strassen) *Jahresbericht der Deutschen Mathematiker-Vereinigung* 119 (2017) 187–199