Forskning

Mitt huvudskaliga intressess är simulering och approximation av stokastiska processer; främst stokastiska differentail ekvationerr och Lévy processer. Dessa processer är viktiga byggblock inom finansmatematik som är mitt andra forskingsintresse. För mer information se Finansmatematikgruppen (Mathematical finance research group.). Jag arbetar även med förnybar energy och energianvändning i bostäder.

Forskningsoutput

First to reach n game

Volkov, S. & Wiktorsson, M., 2026 aug. 1, I: Statistics and Probability Letters. 235, 8 s., 110713.

Stability in quadratic variation

Kennerberg, P. & Wiktorsson, M., 2026 jan. 16, (E-pub ahead of print) I: Collectanea Mathematica. 32 s.

The effects of sea-state on optimal generator parameters for a wave energy converter

Zeinali, S., Wiktorsson, M., Lindström, J., Lindgren, G., Forsberg, J., Shao, X. & Ringsberg, J. W., 2025, *Innovations in Renewable Energies Offshore: Proceedings of the 6th International Conference on Renewable Energies Offshore, RENEW 2024.* Guedes Soares, C. & Wang, S. (red.). CRC Press/Balkema, s. 551-558 8 s.

Optimizing the hydraulic power take-off system in a wave energy converter

Zeinali, S., Wiktorsson, M., Forsberg, J., Lindgren, G. & Lindström, J., 2024 okt. 15, I: Ocean Engineering. 310, 118636.

A comparison of approaches integrating power take-off systems into wave energy converters simulations

Shao, X., Ringsberg, J. W., Yao, H. D., Johnson, E., Forsberg, J., Zeinali, S., Lindström, J. & Wiktorsson, M., 2024, *Innovations in Renewable Energies Offshore: Proceedings of the 6th International Conference on Renewable Energies Offshore, RENEW 2024.* Soares, C. G. & Wang, S. (red.). CRC Press/Balkema, s. 351-358 8 s.

Politikerna struntar i klimatforskningen: 420 forskare: Regeringens politik är katastrofal – nu måste fler svenskar kräva en omställning

et al., 2023 nov. 30, Aftonbladet Debatt.

Sveriges utsläpp måste minska nu, regeringen: 531 forskare: Annars är sveket monumentalt – ni kan inte säga att ni inte visste

Skelton, A., Nicholas, K., Olsson, L., Alcer, D., Persson, T., Thorén, H., Krause, T., Knaggård, Å., Allesson, J., Busch, H., Isgren, E., Galafassi, D., Hildingsson, R., Ness, B., Ramasar, V., Becker, P., Gren, N., Richter, J. L., Barmark, M. & Libertson, F. och 65 andra, Bakx, T., Thapa, S., Dahlner, A., Wårlind, D., Hederström, V., Ardö, J., Brangarí, A. C., Yourstone, J., Beltrán, J., Eklund, L., Akselsson, C., Ullström, S., Höjdestrand, T., Svenbro, M., Dorkenoo, K., Osberg, G., Wiktorsson, M., Hammarlund, D., Persson, A.-M., Vestin, P., Lodh, A., Junttila, S., Byaruhanga, R., Johnson, E., Södergren, K., Lindroth, A., Malmqvist, E., Perrigo, A. L., Kallioinen, P., Palm, J., Johansson, T. B., Nicoson, C., Harrie, L. , Lopez de Lapuente Portilla, A., Lindh, L., Nieradzik, L., Sjökvist, R., Betsholtz, A., Schwarz, J., Elvén Eriksson, H., Birken, P., Winberg, J., Hinton, J., Rydhe, E., Maad Sasane, S., Gabrielsson, S., Persson, A., Frank, G., Roldin, P., Stroh, E., Jack, T., Nilsson, L., Oudin, A., Pongrácz, A., Carton, W., Sporre, M., Meier, A., Friberg, J., Svenningsson, B., Abdelhady, D., Bowling, D., Kritzberg, E., Hartman, L., Geretti, V. & et al., 2023 apr. 13, Aftonbladet.

Evaluating the impact of data quality on the accuracy of the predicted energy performance for a fixed building design using probabilistic energy performance simulations and uncertainty analysis

Ekström, T., Burke, S., Wiktorsson, M., Hassanie, S., Harderup, L.-E. & Arfvidsson, J., 2021 okt. 15, I: Energy and Buildings. 249, 0, 111205.

Mapping of domestic hot water circulation losses in buildings – results from 134 measurements

Burke, S., von Seth, J., Ekström, T., Maljanovski, C. & Wiktorsson, M., 2020, *12th Nordic Symposium on Building Physics (NSB 2020).* 12009. (E3S Web of Conferences; vol. 172).

Proposed method for Probabilistic Energy Simulations for Multifamily Dwellings

Burke, S., Carling, P., Davidsson, H., Davidsson, K., Ekström, T., Harderup, L.-E., Kronvall, J., Sahlin, P., Sundling, R. & Wiktorsson, M., 2020, (Submitted) *12th Nordic Symposium on Building Physics (NSB 2020).* 25011. (E3S Web of Conferences; vol. 172).

BENCHOP–SLV: the BENCHmarking project in Option Pricing–Stochastic and Local Volatility problems
von Sydow, L., Milovanović, S., Larsson, E., In't Hout, K., Wiktorsson, M., Oosterlee, C. W., Shcherbakov, V., Wyns, M., Leitao, A., Jain, S., Haentjens, T. & Waldén, J., 2019, I: International Journal of Computer Mathematics.

Method for probabilistic energy calculations: variable parameters
Wiktorsson, M., Burke, S., Kronvall, J. & Sahlin, P., 2017 okt. 17, I: Energy Procedia. 132, s. 3-8 6 s.

BENCHOP—The BENCHmarking project in Option Pricing
von Sydow, L., Höök, L. J., Larsson, E., Lindström, E., Milovanović, S., Persson, J., Shcherbakov, V., Shpolyanskiy, Y., Sirén, S., Toivanen, J., Waldén, J., Wiktorsson, M., Jeremy Levesley, J., Li, J., Oosterlee, C. W., Ruijter, M. J., Toropov, A. & Zhao, Y., 2015, I: International Journal of Computer Mathematics. 92, 12, s. 2361-2379

Fast Simultaneous Calibration and Quadratic Hedging under Parameter Uncertainty
Wiktorsson, M. & Lindström, E., 2014.

On the Convergence of Higher Order Hedging Schemes: The Delta-Gamma Case
Wiktorsson, M. & Brodén, M., 2011, I: SIAM Journal on Financial Mathematics. 2, s. 55-78

Fast simulated annealing in R-d with an application to maximum likelihood estimation in state-space models
Rubenthaler, S., Rydén, T. & Wiktorsson, M., 2009, I: Stochastic Processes and their Applications. 119, 6, s. 1912-1931

Hedging errors induced by discrete trading under an adaptive trading strategy
Brodén, M. & Wiktorsson, M., 2008.

Sequential Calibration of Options
Lindström, E., Ströjby, J., Brodén, M., Wiktorsson, M. & Holst, J., 2008, I: Computational Statistics and Data Analysis. 52, s. 2877-2891

Adaptive Calibration of Risk Neutral Parameters with Applications to Option Valuation
Lindström, E., Ströjby, J., Brodén, M., Wiktorsson, M. & Holst, J., 2006.

Calibration of Option Valuation Models using Sequential Monte Carlo Methods
Lindström, E., Ströjby, J., Brodén, M., Wiktorsson, M. & Holst, J., 2006.

Irregular walks and loops combines in small-scale movement of a soil insect: implications for dispersal biology
Bengtsson, G., Nilsson, E., Rydén, T. & Wiktorsson, M., 2004, I: Journal of Theoretical Biology. 231, 2, s. 299-306

Modelling the movement of a soil insect
Wiktorsson, M., Rydén, T., Nilsson, E. & Bengtsson, G., 2004, I: Journal of Theoretical Biology. 231, 4, s. 497-513

Pricing of some exotic options with NIG-Levy input
Rasmus, S., Asmussen, S. & Wiktorsson, M., 2004, *Computational Science - ICCS 2004. Proceedings Part IV. (Lecture Notes in Computer Science).* Springer, Vol. 3039. s. 795-802

Improved convergence rate for the simulation of stochastic differential equations driven by subordinated Levy processes
Rubenthaler, S. & Wiktorsson, M., 2003, I: Stochastic Processes and their Applications. 108, 1, s. 1-26

Simulation of stochastic integrals with respect to Levy processes of type G
Wiktorsson, M., 2002, I: Stochastic Processes and their Applications. 101, 1, s. 113-125

Statistical analysis of the influence of conspecifics on the dispersal of a soil collembola.
Bengtsson, G., Rydén, T., Öhrn, M. S. & Wiktorsson, M., 2002, I: Theoretical Population Biology. 61, 2, s. 97-113

Approximation of Infinitely Divisible Random Variables with Application to the Simulation of Stochastic Processes
Wiktorsson, M., 2001, Centre for Mathematical Sciences, Lund University. 114 s.

Joint characteristic function and simultaneous simulation of iterated Itô integrals for multiple independent Brownian motions
Wiktorsson, M., 2001, I: Annals of Applied Probability. 11, 2, s. 470-487

On the simulation of iterated Itô integrals
Wiktorsson, M. & Rydén, T., 2001, I: Stochastic Processes and their Applications. 91, 1, s. 151-168

Wavelet analysis of in-cylinder LDV velocity measurements
Wiktorsson, M., Söderberg, F., Johansson, B. & Lindoff, B., 1996, *[Host publication title missing].* SAE, Vol. 1212. s. 1-10

Aktiviteter

Statistical modelling of wave powerplants
Lindström, J. (Första/primär/huvudhandledare) & Wiktorsson, M. (Andra handledare)
2022 jan. 10 → 2027 jan. 9

Forskningsmedel

Styrning av vågkraftverk utifrån vågmätningar, för optimal energiupptagning
Wiktorsson, M. (PI)
Energimyndigheten: 1 600 000,00 kr
2020/09/01 → 2023/03/31

Projekt

Early detection of bark beetles attack
Zeinali, S. (Forskare), Wiktorsson, M. (Biträdande handledare), Lindström, J. (Handledare), Kronvall, T. (Biträdande handledare) & Olsson, P.-O. (Forskare)
2024/09/01 → 2027/01/10

Financial Mathematics Group
Lindström, E. (Forskare), Wiktorsson, M. (Forskare), Tajvidi, N. (Forskare) & Åkerlindh, C. (Forskare)
1996/01/01 → …

Statistical modelling of wave powerplants
Zeinali, S. (Forskare), Wiktorsson, M. (Biträdande handledare) & Lindström, J. (Handledare)
2022/01/10 → 2024/09/01

Undervisning

From 1995-2000 teaching assistant at the following undergraduate courses Markov Processes, Stationary Processes (two years) and Time Series Analysis (three years).

Lecturing (and administratively responsible for) a basic undergraduate course in statistics for chemists at LTH, Lund (85 students, 7.5 ECTS credits), spring 2001.

Lecturing (developing and administratively responsible for) an advanced undergraduate course in Lévy processes for mathematical statistics students at University of Copenhagen (8 students, 5 ECTS credits), spring 2002.

Lecturing (and administratively responsible for) a basic undergraduate course in statistics for Surveyors at LTH, Lund (35 students, 7.5 ECTS credits), fall 2002.

Lecturing (developing and administratively responsible for) a course in probability theory for PhD-students at Centre for Mathematical Sciences, Lund (8 students, 7.5 ECTS credits), spring 2003.

Lecturing (and administratively responsible for) an advanced undergraduate course in probability theory, Lund (10 students, 7.5 ECTS credits), fall 2003.

Lecturing (and administratively responsible for) a basic undergraduate course in statistics for computer science students at LTH, Lund (150 students, 7.5 ECTS credits), spring 2004.

Lecturing (developing and administratively responsible for) a course in weak convergence for PhD-students at Centre for Mathematical Sciences, Lund (6 students, 10.5 ECTS credits), spring 2005.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (35 students, 9 ECTS credits), spring 2006.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (34 students, 9 ECTS credits), spring 2007.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (38 students, 9 ECTS credits), spring 2008.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (44 students, 9 ECTS credits), spring 2009.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (38 students, 9 ECTS credits), spring 2010.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial statistics at LTH, Lund (12 students, 7.5 ECTS credits), fall 2010.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (42 students, 7.5 ECTS credits), fall 2011.

Lecturing (and administratively responsible for) a basic undergraduate course in mathematical statistics for electrical engineering and engineering mathematics students at LTH, Lund (86 students, 7.5 ECTS credits), fall 2011-spring 2012.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (30 students, 7.5 ECTS credits), fall 2012.

Lecturing (and administratively responsible for) a basic undergraduate course in mathematical statistics for electrical engineering and engineering mathematics students at LTH, Lund (100 students, 7.5 ECTS credits), fall 2012-spring 2013.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (50 students, 7.5 ECTS credits), fall 2013.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (40 students, 7.5 ECTS credits), spring 2014.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (30 students, 7.5 ECTS credits), fall 2014.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (50 students, 7.5 ECTS credits), spring 2014.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (50 students, 7.5 ECTS credits), spring 2015.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (30 students, 7.5 ECTS credits), fall 2015.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (50 students, 7.5 ECTS credits), spring 2016.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (30 students, 7.5 ECTS credits), fall 2016.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (78 students, 7.5 ECTS credits), spring 2017.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (44 students, 7.5 ECTS credits), fall 2017.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (64 students, 7.5 ECTS credits), spring 2018.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (38 students, 7.5 ECTS credits), fall 2018.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial statistics at LTH, Lund (35 students, 7.5 ECTS credits), fall 2018

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (63 students, 7.5 ECTS credits), spring 2019.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (38 students, 7.5 ECTS credits), fall 2019.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (63 students, 7.5 ECTS credits), spring 2020.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (34 students, 7.5 ECTS credits), fall 2020.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (98 students, 7.5 ECTS credits), spring 2021.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (40 students, 7.5 ECTS credits), fall 2021.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (96 students, 7.5 ECTS credits), spring 2022.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (28 students, 7.5 ECTS credits), fall 2022.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (77 students, 7.5 ECTS credits), spring 2023.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (50 students, 7.5 ECTS credits), fall 2023.

Lecturing (and administratively responsible for) an advanced undergraduate course in Monte Carlo methods at LTH, Lund (85 students, 7.5 ECTS credits), spring 2024.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial mathematics at LTH, Lund (50 students, 7.5 ECTS credits), fall 2024.

Lecturing (and administratively responsible for) an advanced undergraduate course in financial statistics at LTH, Lund (48 students, 7.5 ECTS credits), fall 2024.

Phd-supervision

Assistant supervisor for Oskar Hagberg who graduated in February 2005 on the thesis "Asymptotic Expansions of Crossing Rates of Stationary Random Processes".

Assistant supervisor for Sebastian Rasmus who graduated in October 2006 on the thesis "Derivative Prices for Models using Lévy Processes and Markov Switching".

From March 2006 assistant supervisor for Rikard Green who worked with models for spot prices and derivatives on the electricity market (Nord Pool), presented his Licentiate thesis in December 2007. Rikard graduated on the thesis "Essays on Financial Risk and derivatives with application to Electricity Market and Credit Markets" in October 2009.

From January 2007 assistant supervisor for Johannes SivÃƒÂ©n who worked with hedging problems in incomplete markets, presented his Licentiate thesis in May 2008 and started working for SAXO bank in Copenhagen.

Assistant supervisor for Jonas Ströjby who started in August 2005. Jonas is working with the estimation problems for Hidden Markov models and partially observed diffussions. Jonas graduated on his PhD thesis "On Bounds and Asymptotics of Sequentail Mionte Carlo Methods for Filtering, Smoothing and Maximum Likelihood estimation in STate Spece Models" on October 15 2010.

Assistant supervisor for Patrik Karlsson who works with calibration and hedging problems. Patrik graduated on his PhD thesis "Essays in Quantitaive" on February 23 2017.

Main supervisor for Mats Brodén who started in August 2005. Mats is working with the pricing of derivatives in financial markets, presented his Licentiate thesis in October 2008. Mats graduated on his PhD thesis "Asymptotic Analysis of Hedging Error Induced by Discrete Time Trading" on November 5 2010.

Assistant supervisor for Carl Åkerlindh who works with finincial mathematics. Carl graduated on his PhD thesis "Simulation and Estimation of Diffusion Processes", September .

From October 2019 assistant supervisor for Philip Kennerberg who worked in probabilty theory and stochastic processes. Philip graduated on his PhD thesis "Barycentric Markov processes and stability results for stochastic integrators", December 18 2020.

At present supervisor for the PhD-students:

Assistant supervisor for Shokoufa Zeinali who started in December 2021. Shokoufa works in Wave energy and climate modelling.

Master thesis-supervision:

Anders Evenås and Ronny Alex, "Hedging Strategy Optimization under Proportional Transaction Costs", January 2005.
Camilla Bjurhult and Gustav Bengtsson, "Equitity Based Modelling of Credit Default Swaps", (in cooperation with Nordea CPH), February 2006.
Pia Stene, "Hedging and pricing using iterative regression" April 2006.
Johan Ericson Thordenberg and Martin Nilsson, "Exchange-traded funds and portfolio insurance strategies",(in cooperation with SEB Sthml), February 2007.
Niklas Rönnberg, "Pricing of standard and non-standard CDO-tranches using the one factor NIG copula", (in cooperation with Nordea Cph), February 2007.
Rickard Davidsson "Option Pricing in Equity Linked Notes -- SPAX ex post", (in cooperation with Swedbank Sthml), February 2007.
Cecilia Adamsson, "Equity Linked Notes - a Comparison of the Products on the Swedish Market", (in cooperation with Swedbank Sthml), June 2007.
Aron Moberg, "Modelling and Hedging of Credit Default Swaps", November 2007.
Rikard Rönblom, "Interpreting the Relative Spread. Recovery rate modeling based on senior and subordinated CDS spreads", (in cooperation with Nordea), March 2008.
Jakob Moberg, "Calibration of Short Rate Models with Finite Difference Methods", (in cooperation with SIMCORP Cph), April 2008.
Martin Andersson and Thorbjörn Wallentin, "Systematic Carry Trading with Technical Analysis and Volatilty Filters",(in cooperation with SEB Sthml), April 2008.
Caroline Lundkvist, "Probability distributions of maxima of Stochastic Processes and Financial Indices", (in cooperation with Macquire Australia), April 2008.
Kostantin Moraidis, "Portfolio optimization in a Lévy market", May 2008.
Christoffer Ramsden, ``Capturing Nonlinearities of Financial Assets Using Interpolation Methods in Risk Calculations'', in cooperation with UBS Zürich, finished August 2008.
Filip Nilsson, "Modelling of LGD with Survival Analysis", in cooperation with Swedbank, finished October 2008 (co-supervised by Anna Lindgren).
Hedda Giaever and Hanna Karlsson, ``Component Based Loan Pricing, A generic approach to price credits'', in cooperation with Öhmans/PriceWaterhouseCoopers (Sthml),

finished December 2008.

Stefán Ingi Adalbjörnsson and Matias Quiroz, ``Discrete Space Simulation with application to Barrier Options'' , finished April 2009.

Patrik Karlsson, ''FX BASKET OPTIONS - Approximation and Smile Prices'', in cooperation with Nordea, Cph, finished May 2009.

Malin Norberg and Vanessa Sternbeck Fryxell, ``Trading Correlated Credit During a Financial Crisis'', in cooperation with Danske Bank (Cph), finsished June 2009.

Pierre-Jean Campigotto, ``Markov-switching models in Foreign Exchange - how to benefit from trends in the market?'', finished August, 2009.

Magnus Sjörén and Philip Wahlström, ''Replicating Hedge Funds Incorporating Regime Switching and Macroeconomic Factors'', in cooperation with IPM (Malmö, finished October 2009.

Staffan Herbst and Filip Nordström, ''Modelling of Fair Market Value of Financed Vehicles in the Emerging Market of Eastern Europe'', in cooperation with Volvo Financial Services (Gothenburg), finished December 2009.

Fredrik Ekenstierna, ''Modelling of peridic variations in electricity prices using Wavelet transforms'', in cooperation with EON Energy Trading, finished April 2010.

Mikael Henriksson and Fredrik Hedberg, ''Hedging of Hedge-fund Portfolios'', in cooperation with Farallon (San Francisco), finished May 2010.

Andrea Frecassetti, ''Pricing and Hedging in Lévy-driven Stock models'', finished August 2010.

Filip Henrysson and Erik Holmstrand, ''Modelling of Long-term Euro-dollar Fluctuations'', in cooperation with Danske Bank (Cph), finished august 2010.

Ramus Ericsson, ''Hedging of FX-options'', in cooperation with UBS Zürich, finished August 2010.

Erik Bergström and Erik Bertilsson, ''Evaluation Hedge fund strategies'', in cooperation with Arca investments, finished August 2010.

Peter Carlstedt, ''Modelling of Credit Migration'', in cooperation with SEB(Sthml), finished August 2010.

Manne Sporre Rasmussen, ''Practical Implementation of the Black-Litterman Model with Application to Hedge Funds'', in cooperation with Harcourt ZÃƒÂ¼rich, finished August 2010.

Gustaf Karlsson and Christian Nordqvist. ''Risk management for Scania finance'', in cooperation with Scania Finance Södert&aouml;lje, finished January 2011.

Johan Wikmark, ''Calibration and Hedging of Swaptions using the SABR model,'' finished January 2011.

Zhao Rushi, ''Calibration and testing of market effieciency in presence of stochastic volatility and jumps'', finished May 2011.

Johan Rydin, ''Pricing and and hedging in Lévy driven models,'' finished June 2011.

Otto Rosendahl, ''Trading and price prediction of commodities using an ARMA-GARCH model'' (Bachelor thesis), finished June 2011.

Simon Eriksson, ''Matching of cash flows for a life insurance policy '', Handelsbanken liv (sthml), finished June 2011.

Erik Vildhede ''Performance of Higher Order Hedging Strategies when Considering Transaction Costs'', finsished June 2011.

Tobias Werner, ''Risk and sensitivity measures for options'', finished, Danske Bank (Cph), October 2011.

Joakim Mossberg, ''Modeling of Policyholders Fund Switching Behavior within the Swedish Unit-linked Market'', (SEB sthml) March 2012.

Anna Silén, Johanna Carlsson ''Credit Valuation Adjustment, Risk Capital Charge under

Basel III", Ernst and Young (Cph), finished May 2012.

Simon Johansson "Discrete space-simulation for Lévy processes", finished June 2012.

Emil Jönsson, Carolina Malmberg "Risk Driving Factors for Covered Bond Issuers in Sweden" Danske Bank, finished June 2012.

Eugene Agyeman-Prempeh, "Model uncertainty and hedging", finished January 2013.

Alexander Ivarsson, Hannes Sternbeck Fryxell, "Evaluating Market Risk in a Portfolio with Heavy-Tailed Risk Factors using Monte-Carlo Methos", SHB Life (sthlm) finished February 2013.

Arzu Eski "Pricing and hedging using MC-methods",finished March 2013.

Joachim Larsen, "Unlimited Prices: An Extreme Value Distribution Approach to Estimating Art Prices" , finished April 2013.

Anders Persson, "Calibration of FX options and pricing of barrier options", finished June 2013.

Martin Carlson, "Marknadsrisk i livförsäkringsprodukter med garanti. En optionsreplikations-studie av "Nya V&aouml;rlden"", finished June 2013.

Malick Seghore, "Modeling Swedish government yields with the Dynamic Nelson Siegel and the Dynamic Nelson Siegel Svensson Model", finished June 2013.

Erik Andreasson, "Pricing of American Options", finshed August 2013.

Erik Höög "Modelling of Live Odds", finished January 2014.

Simon Koskinen Rosemarin "Responding to the Eurozone Crisis - Applying the Shadow Rating Approach to Determine Economic Capital for Sovereign Exposures", finished May 2014

Patrik Petersson, "Support Vector Machines in the FX market: A study of predictability and profitability", finished Feb 2014

Marta Ruiz Chaparro "A new dimension to Risk Assessment", finished Feb 2014

Janis Müller Pricing, "Timer Options under Jump-Diffusion Processes", finished May 2014

Nina Rodling, Ebba Linde "Improving Portfolio Performance", finished May 2014

Marcus Kylberg, John Jansson, "Forbearance Policy in an Asset Quality Review Framework", finished June 2014

Max Nyström Winsa: "Forecasting Foreign Exchange Rates, A comparison between forecasting horizons and Bayesian vs. Frequentist approaches", finished June 2014.

Mikael Teern: "Modeling Copper Prices and Risk Management" finished December 2014.

Caroline Olofsson: Pricing swing options in the electricity market finished April 2015.

Fredrik Persson, Michael Montag: "Model risk quantification in option pricing" finished June 2015.

Per Möller: "Valuing Credit Default Swaps with a Structural Approach" finished June 2015.

Samare Jarf, Pontus Hultkrantz: "Credit Value Adjustment" finished June 2015.

Andreas Nyström: "Inference and hedging of the Heston model under P (a simulation study)" finished June 2015.

Benjamin Kraska: "A comparison of the Fourier-Gauss-Laguerre and Fourier cosine series method in option pricing" finished December 2015.

Jonas Berglund: "Estimating expected lifetime of revolving credit facilities in an IFRS 9 framework" finished January 2016.

Mattias Jönsson and Ulrica Såmark: "Negative Rates in a Multi Curve Framework, Cap Pricing and Volatility Transformation", finished May 2016.

Ella Tellqvist and Martin Kustvall Larsson: "Robustness Analysis when Updating Credit Risk Measures", finished May 2016.

Gustaf Säfwenberg: "Randomized Quasi-Monte Carlo Simulations for Basket Option Pricing where underlying assets follow a Time-Changed Meixner Lévy Process", finished June 2016.

Sofie Svensson: "Default Correlations within Credit Valuation", finished June 8 2016.
Svante Dieden Sandell and Mattias Karlsson: "Absolute & Relative Credit Quality Assessment"', finished June 8 2016.
Nina Castor and Linnéa Gerhardsson: "Estimation of Probability of Default in Low Default Portfolios", finished January 2017.
Nilofar Mortazavi: "Quasi-Monte Carlo Integration over Non-Cubical Domains", finished February 2017.
Sanna Brandel: "Markov Regime Switching Model Implementation to the Stockholm Stock Market & Comparison with Equal Weight Portfolio" (Bachelor), February 2017.
Hanna Scheibenpflug, Alma Broström: "To Measure Concentration Risk - A comparative study", finished May 2017.
Malin Lunsjö, Malin Riddarström: "Strategies for High Frequency FX Trading - The choice of bucket size", finished June, 2017.
Johan Gustavsson: "Counterparty Credit Exposures for Interest Rate Derivatives using Stochastic Grid Bundling Method and Change of Measure ", finished August 2017.
Eskil Andersson: "Modeling market activity using 1D non-homogeneous Hawkes Processes" finished January 2018.
Axel Skantze: "A Black-Litterman portfolio allocation model combined with a Markov switching framework", finished February 2018.
Anton Levin: "Pricing fixed price electricity contracts in the Nordic region" finished March 2018.
Frej Håkansson, Björn Nilsson: "Anticipated Events- Impact on FX Option- Implied Volatility", finished June 2018.
Sanna Brandel: "Asset and Liability Management: Optimization using Least-Squares Monte Carlo", finished June 2018.
Patrik Liedbeck, Wilhelm Ålander: "To what degree is the VIX benchmark computed by CBOE representative of its definition?" (Bachelor), finished June 2018.
Carl Brishammar: "Modelling News Sentiment Flow Using Spatial Hawkes Processes: Dependencies Between Topics and Countries", finished June 2018.
Oskar Rasmusson: "A Fourier approach to valuating derivative assets", finished August 2018.
Gustav Hedin: "Efficient Barrier Option Greeks using Automatic Differentiation", finsished January 2019.
Magnus Sigurdsson, "A Utility Approach: Strategy Analysis and Optimization", finished February 2019.
Per Wilhelmsson, "Hierchical Clustering of Financial Time Series", finished May 2019.
Max Mjörnell and Ludvig Levay: "Alternative Scorecard Modelling Using Neural Networks", finished June 2019.
Marcus Hallabro, "Numerical solution for derivative models using finite difference methods and how this can be used with Monte-Carlo simulation", finished June 2019.
Adrian Connolly, "Evaluation of Applicant Quality for a Recruitment Company Using Machine Learning", Bachelor thesis finished June 2019.
Ville Ekelund, "Parameter Estimation Of Market Volatility Using Hidden Markov Model", Bachelor thesis finished August 2019.
Manu Upadhyaya, "Regularising of Covariance Mayrix Estimates", finished February 2020.
Jan Müller, "Modelling of Credit Risk", Bachelor thesis finished February 2020.
Wilhelm Ålander, "Calibration of VIX modells", finished June 2020.
Henrik Kragh,"Estimating Value at Risk Using Particle Stochastic Approximation Expectation Maximization", finished June 2020.
Maxime Dagieux "Some Implications of Liquidity Risk and Related Issues", finished

October 2020

Adrien Rannou, "Impact of an interest rate coverage in a life insurance company", finished November 2020.

Kawthar Abdallah, "The Two-envelope problem", Bachelor thesis finished January 2021.

Jacob Rotschield, "Optimization of power grids", finished Narch 2021.

Jacob Tyrberg and Jesper Gunnarsson, "Optimizing the price to volume ratio for a diverse assortment of spare parts", finished March 2021.

Antonio Prgomet,"How Many Stocks Should You Buy? - A Simulation Study on Portfolio Diversification for the Swedish Stock Market", finsihed May 2021.

Oskar Andersson, "Modelling of housing prices", finished May 2021.

Jonatan Persson,"Factor Models for the Term Structure of STIBOR Rates", Bachelor thesis finished June 2021.

Henrik Sandler, "Forward start options", finished Oct 2021.

Oscar Brink Bolin and Joel Ahnvik, "Monte Carlo based option pricing and uses", finished Jan 2022.

Jan Müller, "Pricing of Embedded Options", finished April 2022.

Isabelle Frodö and Viktor Sambergs, "Data-driven xVA exposure calculation", finished June 2022.

Ellen Ek, "Factor model for futures contract in order to estimate covariance matrices", finished June 2022.

Fredrik Lindstedt and Olle Ottander, "Least-square Monte-Carlo based pricing of American options using assumptions on value function behaviour", finished June 2022.

Mattias Pettersson, "Visualizing and detecting deviating long term trading behaviour", (Scila AB) finished Nov 2022.

Anie Kdlian, "Covid 19 patterns in Scandinavian countries", Bachelor thesis finished Feb 2023.

Mahta Keivani Najafabadi, "Heterogeneity in lung cancer sample data", Bachelor thesis finished Feb 2023.

Fredrik Nilsson, "Dynamic Covariance Matrix Estimation Using Inverse Wishart Processes", (Lynx) finished June 2023.

Ivar Fagerfjäll and Erik Hu, "Factor HJM Yield Curve Modelling for Pricing of Danish callable Mortgage Bonds", (SEB) finished June 2024.

Mårten Augustsson, "Unwavering Potential -- Optimizing and Estimating the Power Output from a Wave Energy Converter", finished June 2024.

Elmir Nahodovic and Erik Karlsson Strandh,"Exact -Q-Variations for the True and Simulated Solutions to the Stochastic Heat Equation Driven by Additive Gaussiian Noise", finished June 2024.

Maren Demut, "Assessing Data Quality in Image Recognition Datasets of Swedish Financial Reports", finished June 2024.

Anastasija Kovacevic and Andrea Begic, "A Framework for Navigating Climate Uncertainty - Scenario Analysis for Financial Institutions in the EU", (Avanza bank) finished June 2024.

Fabien Fouville, "Validation of RFR Bermuda swaptions priced with Hull-White model", finished November 2024.

Linn Holgersson, "Inflation-Hedging Potential Of Cryptocurrency Baskets Using Volatility Modeling", (Vinter capital) finished November 2024.

Gabriel Malinconico and Thea Jakobsson, "Transition Linker Pricing- A Hypothetical Pricing Framework for GHG Emission-Linked Sovereign Bonds", (Nordea markets) finished May 2025.

Ebba Wennerklint and Linus von Ekensteen Löfgren, "Effects of Time Dependent Hull-White Parameters on Bermudan Swaptions ", (Handelsbanken) finished May 2025.

Isabelle Byman and Oscar Karlsson, "Better Hedging of CVA with Reinforcement Learning", (Nordea markets) finishing May 2025.
Paulina Ibek, "Portfolio Optimization with Machine Learning: Predicting Market Returns and Portfolio Weights", (Lynx) finished June 2025.
Hampus Persson, "Portfolio risk and performance evaluation using a combination of GARCH and stochastic volatility models with constant and dynamic correlation structures", finishied June 2025. Rasmus Stolz and Fabian Sönne, "Modeling the Post-LIBOR Interest Rate Market - Calibration of a Time-Dependent Hull-White Model to SOFR Caps", finished June 2025.

PhD grading committee

Mathias Barkhagen, "Optimal Decisions in the Equity Index Derivatives Market Uding Option Implied Information", Linköping, May 2015.

Veronika Lunina, "Multivariate Modelleing of Energy Markets", NEK Lund, 2017.

Hannah Dyrssen, "Valuation and optimal Strategies in Market Experiencing shocks", Uppsala, May 2017.

Pontus Söderbeck, "Decomposing the Option Price Problem, Linköping November 2022.

Duc Hong Hoang, EHL "Essays on Currency Markets", Lund April 2023.

Henrik Bengtssom, Statistcs, EHL, "Approximating excursion distributions using regenerative processes", Lund February 2025.

Deputy member of grading committee at PhD dissertations in Lund:

Mikael Signahl "Topics in Simulation and Stochastic Analysis", September 2003.

Erik Lindström "Statistical Modelling of Diffusion Processes with Financial Applications", December 2004.

Mats Pihlsgård "Two-Barrier Problems in Applied Probability: Algorithms and Analysis", December 2005.

Jonas Wallin "Stochastic Models Involving Second Order Lévy motion", 2014.

Marcus Thelander Andrén "On Optimal Event-Based Sampling in LQG Control", December 2020.

Licentiate thesis grading

Discussing opponent on the licentiate thesis "Simulation in financial mathematics" by Martin Groth, Växjö, April 2005.

Discussing opponent on the licentiate thesis "Modelling Sensor Networks with Mobile Nodes" by Niklas Gunnarsson, Uppsala, October 2006.

Discussing opponent on the licentiate thesis "Risk-Neutral and Physical Estimation of Equity Market Volatility" by Mathias Barkhagen, Linköping, June 2013.

Administration:

PhD-student representative in the division board of Mathematical Statistics March 1999-April 2001.

Teacher representative in the division board of Mathematical Statistics January 2005-2007.

Director of studies (20%), Mathematical Statistics, Faculty of Science, 2008-

Deputy teacher representative in the board of Centre for Mathematical Sciences April 2011-March 2014, January 2020-December 2022.

Teacher representative in the board of Centre for Mathematical Sciences April 2014-December 2019, January 2023-.