Thomas K. Kloster

PhD fellow - Quantitative Finance

Department of Economics and Business Economics, Aarhus University
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Personal Data

Date of birth May 29, 1997
Nationality Danish
Research interests Volatility modelling, derivatives, computational methods for derivatives, electricity markets.

Education

Ph.D. in quantitative finance *Aarhus, Denmark*
Department of Economics and Business Economics, Aarhus University *Sept. 2022 - Aug. 2025*
- Supervisors: Elisa Nicolato & Thomas Kokholm.

M.Sc. in mathematics-economics *Aarhus, Denmark*
Department of Mathematics, Aarhus University *Sept. 2020 - Jun. 2022*
- Specializing in mathematical finance.
- Thesis: A joint Venture: Pricing SPX and VIX options under various jump distributions.

B.Sc. in mathematics-economics *Aarhus, Denmark*
Department of Mathematics, Aarhus University *Sept. 2017 - Jun. 2020*
- Thesis: Modelling and implementation of intensity based models of credit risk.

Work Experience

Ph.D. in quantitative finance *Aarhus, Denmark*
Department of Economics and Business Economics, Aarhus University *Sept. 2022 - Aug. 2025*
- Supervisors: Elisa Nicolato & Thomas Kokholm.
- Teaching: Lecturer in 'derivatives' part of the course 'investment and finance' (BA level).
  TA in the course 'pricing and hedging of derivatives' (MS level).

Visiting Ph.D. *Oslo, Norway*
Department of Mathematics, Oslo University *Sept. 2024 - Jan. 2025*
- Visiting professor Fred Espen Benth.

Quantitative analyst (part time) *Aarhus, Denmark*
BD Energy *May 2023 - Jun. 2024*
- Developing quantitative models for automated trading in energy markets.

Research Assistant (part time) *Aarhus, Denmark*
Department of Economics and Business Economics, Aarhus University *Sept. 2018 - Jan. 2022*
- Research assistant for professor of economics and finance Bent Jesper Christensen.

Teaching Assistant (part time) *Aarhus, Denmark*
Department of Mathematics, Aarhus University *Sept. 2020 - Jun. 2022*
- Advanced probability theory
- Investment and finance
- Microeconomics 1

Research

An ambit field framework for the full panel of day-ahead electricity prices *Working paper*
Single authored

Lévy bases on curves and manifolds *Working paper*
Single authored

Empirical analysis of the affine Volterra framework for joint SPX-VIX calibration *Working paper*

SINGLE AUTHORED

Orthogonal expansions in Volterra-Heston models *Working paper*

JOINT WITH ELISA NICOLATO

An orthogonal expansions approach to joint SPX and VIX calibration in affine stochastic volatility models with jumps *Quantitative Finance*

JOINT WITH ELISA NICOLATO *2024*

Research Grants

2025-2027 **DFF International PostDoc**, 2,239,200 DKK *Aarhus, Denmark*

Selected Presentations

STAR seminar *Oslo, Norway*

SEMINAR PRESENTATION *Nov. 2024*

- Presented work on orthogonal expansions for option pricing.

Symposium in honor of Jørgen Aase Nielsen *Aarhus, Denmark*

PRESENTATION (30 MIN) *Oct. 2024*

- Presented the working paper 'Orthogonal expansions in Volterra-Heston models'.

12th Bachelier World Congress 2024 *Rio de Janeiro, Brazil*

PRESENTATION (25 MIN) *Jul. 2024*

- Presented the working paper 'Orthogonal expansions in Volterra-Heston models'.

XXV Quantitative Finance Workshop *Bologna, Italy*

SHORT TALK (15 MIN) *Apr. 2024*

- Presented the working paper 'Orthogonal expansions in Volterra-Heston models'.

XXIV Quantitative Finance Workshop *Gaeta, Italy*

SHORT TALK (15 MIN) *Apr. 2023*

- Presented the working paper 'An orthogonal expansions approach to joint SPX and VIX calibration in the SVJJ model'.

Stochastics seminar *Aarhus, Denmark*

SEMINAR PRESENTATION *May 2023*

- Presented the working paper 'An orthogonal expansions approach to joint SPX and VIX calibration in the SVJJ model'.

Affiliations

2024-now **Member**, Center for Research in Energy: Economics and Markets (CoRE), Aarhus University.

Extracurricular Activity

Student representative in the education committee *Aarhus, Denmark*

DEPARTMENT OF MATHEMATICS, AARHUS UNIVERSITY *Nov. 2019 - Nov. 2021*

- Representing mathematics-economics.

Student representative in the programme committee *Aarhus, Denmark*

DEPARTMENT OF MATHEMATICS, AARHUS UNIVERSITY *Nov. 2020 - Nov. 2021*

- Representing mathematics-economics.