



Scandinavian Actuarial Conference 2024

14 to 16 August 2024



Bringing experts and leaders in actuarial science together from across the world to present the newest and most impactful developments in the field.



Plenary speakers:

Valérie Chavez-Demoulin, Damir Filipović, Joshua Loftus, and Johanna Ziegel.

Featuring a roundtable on fairness moderated by the renowned Karel Van Hulle, who is joined by panelists Matthias Fahrenwaldt, Isabelle Flückiger, Esko Kivisaari, and Thomas Møller.

Call for abstracts is open – send your submission before 31 March 2024.

Register before 20 May 2024 to benefit from early bird rates.

Read more, submit, and register on sac24.net

SAC24 is officially starting 15 August 2024. A satellite event to commemorate Ragnar Norberg (1945 – 2017) takes place 14 August from 14:00 till 20:00. "Remembering Ragnar" will be hosted by Mogens Steffensen with talks by Walther Neuhaus, Thomas Møller, Stéphane Loisel, Marcus C. Christiansen, and Kristian Buchardt.

The document template originates from [LaTeXTemplates.com](https://www.latextemplates.com) and is based on the original version at: https://github.com/maximelucas/AMCOS_booklet.

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Welcome to Copenhagen!

The goal of the Scandinavian Actuarial Conference 2024 is to bring experts and leaders in actuarial science together from across the world, aiming to present the newest and most impactful developments in the field. The conference officially starts on the 15th of August, though a satellite event to commemorate Ragnar Norberg takes place on the 14th of August.

The conference features plenary talks by Valérie Chavez-Demoulin (University of Lausanne), Joshua Loftus (London School of Economics), Johanna Ziegel (ETH Zurich), and Damir Filipović (EPFL and Swiss Finance Institute).

Useful information

Talks are held at the H.C. Ørsted Institute (HCØ) in Auditoriums 1, 5, and 6. The address is Universitetsparken 5, DK-2100 Copenhagen Ø.

The registration and service desk is located outside Aud 1. Next to it, you will find a book exhibition by *Springer*. *Springer* is also offering a 20 % discount for conference attendees on all their books.

Coffee breaks and lunches take place just outside Aud 1 and in *Vandrehallen*.

Wi-Fi is available via eduroam or the network *KU Guest*.

The **social event and conference dinner** takes place on the evening of the 15th of August at *Arbejdermuseet* (the Workers Museum). The address is Rømersgade 22, DK-1362 Copenhagen.

Committees, partners, and sponsors

Organizing committee: Martin Bladt, Christian Furrer (chairperson), Natasha Rørdam Gulddal, Munir Eberhardt Hiabu, Mogens Steffensen.

Scientific committee: Hansjörg Albrecher, Luis Alvarez Esteban, Fred Espen Benth, Martin Bladt, Marcus C. Christiansen, Boualem Djehiche, Christian Furrer, Munir Eberhardt Hiabu, Filip Lindskog, Thomas Mikosch (chairperson), Jostein Paulsen.

Partners and sponsors: Fynske Købstæders Fond, the Carlsberg Foundation (CF23-0914), and the Danish Society of Actuaries.

Roundtable on fairness

Insurance addresses inequalities and, consequently, fairness has always been a critical theoretical and practical concern. The insurance industry is expected to deliver solutions based on societal demand and scientific and technological support. Can it keep up – and how? And what is the role of the actuarial scientist and the actuary compared to, say, the emerging data scientists? The topic becomes very relevant in the present debate about social sustainability and the right to be forgotten.

In the afternoon of Thursday, 15th of August, the conference features a roundtable on fairness moderated by the renowned Karel Van Hulle. He is joined by four panelists from practice: Matthias Fahrenwaldt, Isabelle Flückiger, Esko Kivisaari, and Thomas Møller. The panel will discuss the matter at hand and engage in questions from the audience.

Social event and conference dinner

After Thursday's roundtable, we leave behind the H.C. Ørsted Institute and proceed to visit *Arbejdermuseet* (the Workers Museum, Rømersgade 22, DK-1362 Copenhagen) and to enjoy a taste of modern Danish cuisine. The following rough outline serves as an indication of what to expect:

17:10	–	17:50	Joint walk from the H.C. Ørsted Institute to <i>Arbejdermuseet</i>
17:50	–	18:15	Arrival and welcome drinks
18:15	–	19:15	Introduction to the museum and opportunity to explore the exhibitions
19:15	–	21:30	Conference dinner
21:30	–	24:00	Music, drinks, and <i>hygge</i> .



Code of Conduct

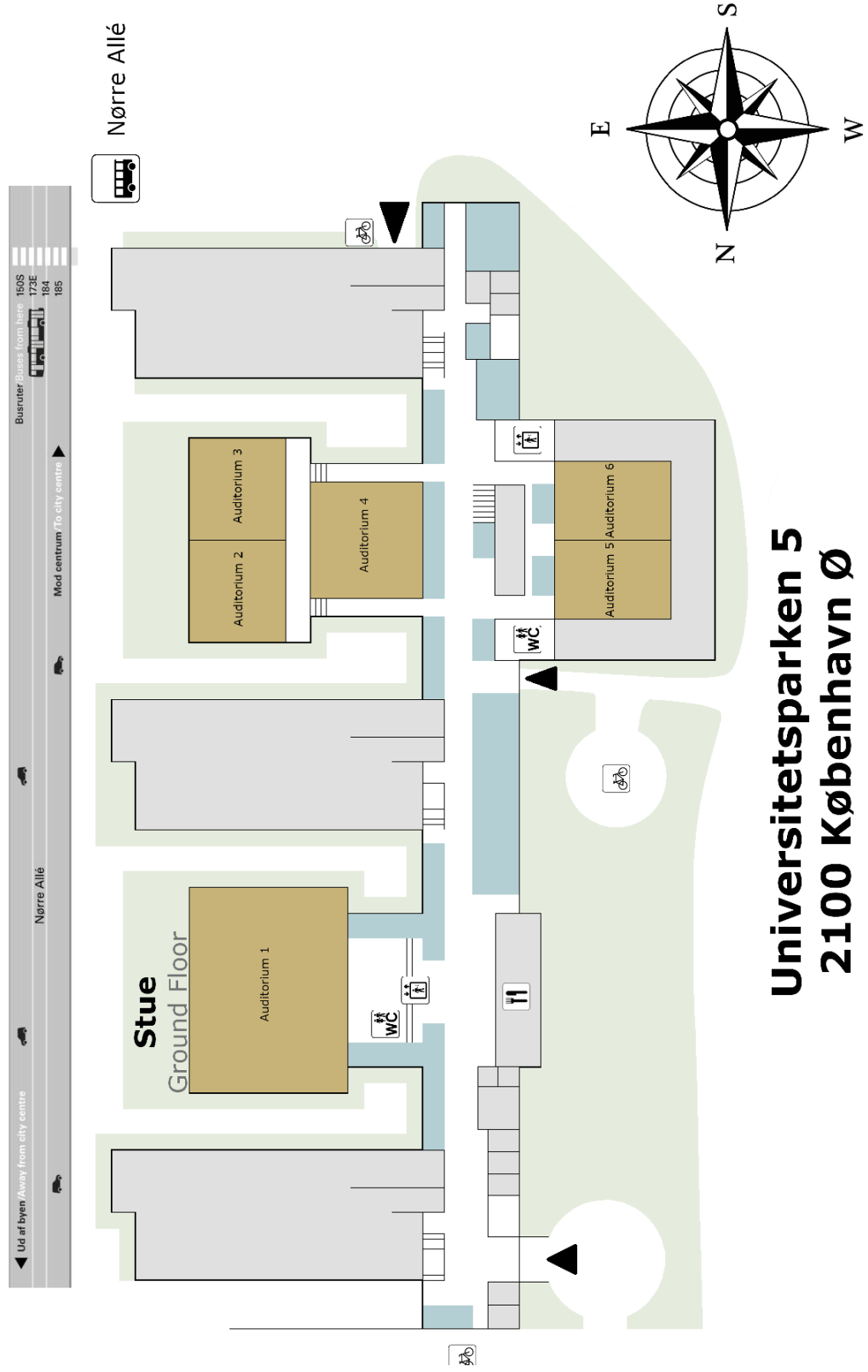
The event seeks to provide an experience for all participants that is free from harassment, bullying, discrimination, and inappropriate behavior which includes, but is not limited to:

- Intimidation, personal attacks, stalking, following, harassment, inappropriate physical contact or attention, or derogatory mention
- Offensive comments, materials or activities related to age, race, color, nationality, gender, sexual orientation, medical condition, disability, or pregnancy
- Disorderly, boisterous, or disruptive conduct including fighting, coercion, theft, damage to property, or any mistreatment or unprofessional behavior towards participants.

Participants asked to stop any such behavior are expected to comply immediately, whether at conference venues or conference-related social events. If you are subject to or an observer of inappropriate behavior, please contact the organizer or organizing staff immediately.

In case of a breach to this Code of Conduct, the organizer will respond swiftly towards the offender as deemed appropriate according to law and regulations. Sanctions may be, but are not limited to, a warning, expulsion from the event with no refund, barring from participation in future events, reporting the incident to the offender's organization/company, or in the last instance reporting the incident to law enforcement authorities.

Venue map



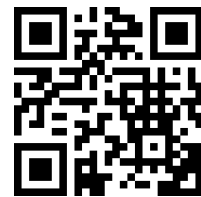
Universitetsparken 5 2100 København Ø

Remembering Ragnar

“Certain forms of uncertainty make life interesting but less safe. I was always intrigued by the various forms of risk that are associated with human life and activity and how they can be mitigated for the individual by contractual risk exchange between two or more parties. Certain forms of certainty make life interesting and more safe. I was always attracted to mathematics because it allows for statements that are non-trivial and still indisputably true. These two areas of interest synthesize perfectly into actuarial/financial mathematics, which gives precise contents to notions of risk and develops methods for measuring and controlling it.”

(Ragnar Norberg, 1945 – 2017)

Remembering Ragnar is a half-day event where we commemorate Ragnar Norberg and his many contributions, not least to the actuarial research literature and to the research and educational environments he cultivated, championed, and challenged. The event is hosted by Mogens Steffensen and features talks by Walther Neuhaus, Thomas Møller, Stéphane Loisel, Kristian Buchardt, and Marcus C. Christiansen. It is concluded by a reception dinner.



Wednesday, 14th of August

13:30–14:00	Registration and coffee		
14:00–14:10	Aud 1	Opening	
14:10–14:50	Aud 1	Walther Neuhaus	Remembering Ragnar – the early days IS
14:50–15:30	Aud 1	Thomas Møller	Aspects of interplay between finance and insurance IS
15:30–15:55	Coffee and sweets		
15:55–16:35	Aud 1	Stéphane Loisel	Ragnar in Lyon: retired but not tired! IS
16:35–17:15	Aud 1	Kristian Buchardt	Forward transition rates for valuation IS
17:15–17:55	Aud 1	Marcus C. Christiansen	Two hidden gems in the works of Ragnar Norberg IS
17:55–18:00	Aud 1	Closing	
18:00–20:00	Reception dinner in <i>Vandrehallen</i>		

Abbreviations: CT(s) for Contributed Talk(s); IS for Invited Speaker; PS for Plenary Speaker.

Timetables

Thursday, 15th of August

8:00–8:45	Registration and coffee		
8:45–9:00	Aud 1	Opening	
9:00–10:00	Aud 1	Valérie Chavez-Demoulin	Causal Discovery in Multivariate Extremes with a Hydrological Analysis of Swiss River Discharges PS
10:00–10:20	Coffee		
10:20–12:00	Aud 1 Aud 5 Aud 6	Machine learning Mortality and longevity risk Valuation and design	CTs
12:00–13:00	Lunch		
13:00–14:00	Aud 1	Joshua Loftus	Model-agnostic explanation tools and their limitations PS
14:05–15:20	Aud 1 Aud 5 Aud 6	Fairness Multi-state modeling Dividends and stochastic control	CTs
15:20–15:45	Coffee and sweets		
15:45–17:00	Aud 1	Roundtable on fairness	
18:00–24:00	Social event and conference dinner at <i>Arbejdmuseet</i>		

Friday, 16th of August

9:00–10:00	Aud 1	Johanna Ziegel	Isotonic distributional regression and CRPS decompositions PS
10:00–10:20	Coffee		
10:20–12:00	Aud 1 Aud 5 Aud 6	Optimal consumption, investment, and insurance Economics of (re)insurance Statistics and extremes	CTs
12:00–13:00	Lunch		
13:00–14:40	Aud 1 Aud 5 Aud 6	Non-life insurance Asset allocation Lapse risk	CTs
14:40–15:00	Coffee and sweets		
15:00–16:00	Aud 1	Damir Filipović	Stripping the Swiss Discount Curve using Kernel Ridge Regression PS
16:00–16:10	Aud 1	Closing	

Parallel sessions — Thursday, 15th of August

Machine learning — Aud 1, 10:20–12:00

Chair: Munir Eberhardt Hiabu			
10:20–10:45	Ralf Wilke	Estimation of Panel Models with Group Structures in Fixed Effects	CT
10:45–11:10	Mathias Lindholm	A tree-based varying coefficient model with insurance applications	CT
11:10–11:35	Gabriele Pittarello	A machine learning approach based on survival analysis for IBNR frequencies in non-life reserving	CT
11:35–12:00	Thorsten Rheinländer	Deep Learning in Life Insurance	CT

Mortality and longevity risk — Aud 5, 10:20–12:00

Chair: Mogens Bladt			
10:20–10:45	Cinzia Di Palo	Entropy and Life Annuity Changes	CT
10:45–11:10	Phillip Frede Halmsted Olsen	Matrix representations for prices of life-contingent derivatives	CT
11:10–11:35	Andrey Ugarte Montero	Incorporating Information on Insured Amounts to Improve Survival Rate Estimates from a Liability Perspective	CT
11:35–12:00	Mathias D. Plovst	Systematic longevity risk: The willingness to pay	CT

Valuation and design — Aud 6, 10:20–12:00

Chair: Luis Alvarez Esteban			
10:20–10:45	Francesco Della Corte	Market-Consistent Valuation and Capital Assessment for Demographic Risk in Life Insurance: A Cohort Approach	CT
10:45–11:10	Francesco Rania	Risk profiles of Reverse Mortgage: empirical evidence from Italy	CT
11:10–11:35	Daniel Nkameni	Index based contracts as a component of an optimal insurance coverage against emerging risks	CT
11:35–12:00	Michèle Vanmaele	Second order Esscher pricing for models with jumps	CT

Fairness — Aud 1, 14:05–15:20

Chair: Mathias Lindholm			
14:05–14:30	Giovanni Rabitti	Measuring proxy discrimination effects with sensitivity analysis	CT
14:30–14:55	Tessa Steensgaard	Fair learning and testing for unfairness given protected features	CT
14:55–15:20	Xi Xin	Why You Should Not Trust Interpretations in Machine Learning: Adversarial Attacks on Partial Dependence Plots	CT

Multi-state modeling — Aud 5, 14:05–15:20

Chair: Christian Furrer			
14:05–14:30	Ayşe Arık	Examining breast cancer risk during COVID-19: Insights from semi-Markov modelling	CT
14:30–14:55	Oliver L. Sandqvist	Likelihood-based estimation for multistate models subject to IBNR- and RBNS effects	CT
14:55–15:20	Theis Bathke	Estimation of bivariate transition rates in life insurance	CT

Dividends and stochastic control — Aud 6, 14:05–15:20

Chair: Jostein Paulsen			
14:05–14:30	Dante Mata Lopez	On an optimal dividend problem with a concave bound on the dividend rate	CT
14:30–14:55	Zuoquan Xu	Optimal dividend payout under path-dependent constraint	CT
14:55–15:20	Indira Dhar	Stochastic Control Problems in the Dynamic Nelson-Siegel Framework	CT

Parallel sessions — Friday, 16th of August

Optimal consumption, investment, and insurance — Aud 1, 10:20–12:00

Chair: Mogens Steffensen			
10:20–10:45	Seyoung Park	Optimal Consumption and Investment Decisions with Disastrous Income Risk: Revisiting Rietz's Rare Disaster Risk Hypothesis	CT
10:45–11:10	Debbie Kusch Falden	Calibration of risk aversion to real pension asset allocation	CT
11:10–11:35	Julie Bjørner Søre	Optimal consumption, investment, and life insurance, including state dependence by risk-adjusted utility	CT
11:35–12:00	Philipp C. Hornung	Investigating trade-offs in the design of smooth pension products	CT

Economics of (re)insurance — Aud 5, 10:20–12:00

Chair: Filip Lindskog			
10:20–10:45	Svein-Arne Persson	Why firms should buy insurance	CT
10:45–11:10	Tao Li	(A)symmetric Information and Insurers' Nitpicky Behavior	CT
11:10–11:35	Lea Enzi	Stochastic differential reinsurance games: a jump filtration approach	CT
11:35–12:00	Aleksandar Arandjelovic	Reinsurance with neural networks	CT

Statistics and extremes — Aud 6, 10:20–12:00

Chair: Thomas Mikosch			
10:20–10:45	Jorge Yslas	Robust claim frequency modeling through phasetype mixture-of-experts regression	CT
10:45–11:10	Yubo Rasmussen	Analyzing Extreme Weather Impact on Property Insurance Claim Severity: A Combined Pareto Neural Network Model	CT
11:10–11:35	Christoffer Øhlenschläger	Heterogeneous extremes in the presence of random covariates and censoring	CT
11:35–12:00	Jiajun Liu	An Asymptotic study of the generalized Tail-Gini measures	CT

Non-life insurance — Aud 1, 13:00–14:40

Chair: Martin Blatt			
13:00–13:25	Uwe Schmock	On Matrix-Valued Gamma Distributions in Multivariate Poisson Mixture Models	CT
13:25–13:50	Melanie Averhoff	Experience Rating in the Cramér-Lundberg Model	CT
13:50–14:15	Taariq Nazar	On duration effects in non-life insurance pricing	CT
14:15–14:40	Filip Lindskog	Mack's estimator motivated by large exposure asymptotics in a compound Poisson setting	CT

Asset allocation — Aud 5, 13:00–14:40

Chair: Thorsten Rheinländer			
13:00–13:25	Yukio Muromachi	A Term Structure Model of Interest Rates with Regime-Switching Properties for Risk Evaluation	CT
13:25–13:50	Yevhen Havrylenko	Asset-liability management with liquid and fixed-term assets	CT
13:50–14:15	Carlos Miguel Glória	Optimal strategy for an AAM of DC pension plans under jump-diffusion and with time-varying ambiguity	CT
14:15–14:40	Michael Preisel	Long-Term Mean-Variance Optimization Under Mean-Reverting Equity Returns	CT

Lapse risk — Aud 6, 13:00–14:40

Chair: Marcus C. Christiansen			
13:00–13:25	Andrea Molent	Enhancing Valuation of Variable Annuities in Lévy Models with Stochastic Interest Rate	CT
13:25–13:50	Oytun Haçarız	Lapse-supported Life Insurance and Adverse Selection	CT
13:50–14:15	Francesco Ungolo	A Dirichlet Process Mixture regression model for the analysis of competing risk events	CT
14:15–14:40	Stefan Gerhold	The effect of policy cancellation on the risk of an insurance portfolio	CT

