

# Jens Robben

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## RESEARCH INTERESTS

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**In general:** Actuarial Science, Data Science, Machine Learning, Applied Statistics

**In particular:** Life Insurance, Mortality Modelling, Non-Life Insurance, Reserving, Pricing

## EDUCATION

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<b>PhD candidate in Insurance</b> KU Leuven Supervisor: Katrien Antonio	2020 - Present
<b>MSc in Actuarial and Financial Engineering</b> - <i>Summa cum laude</i> KU Leuven	2019 - 2020
<b>MSc in Mathematics</b> - <i>Summa cum laude</i> KU Leuven	2017 - 2019
<b>BSc in Mathematics</b> - <i>Magna cum laude</i> KU Leuven	2014 - 2017

## VISITING POSITIONS

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<b>University of Amsterdam</b> Visiting scholar ( <i>host: Torsten Kleinow</i> )	September 2023
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## PUBLICATIONS

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J. Crevecoeur, J. Robben & K. Antonio. 2022. A Hierarchical Reserving Model for Reported Non-Life Insurance Claims. *Insurance: Mathematics and Economics*, 104, 158-184.

J. Robben, K. Antonio & S. Devriendt. 2022. Assessing the Impact of the COVID-19 Shock on a Stochastic Multi-Population Mortality Model. *Risks*, 10(2), 26, 1-33.

## WORKING PAPERS

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J. Robben & K. Antonio (2023). Catastrophe Risk in a Stochastic Multi-Population Mortality Model. *Revise and Resubmit at Journal of Risk and Insurance*.

## WORK IN PROGRESS

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**Relation Between Mortality Statistics and Climate and Environmental Variables at a Regional Level**  
*with Katrien Antonio and Torsten Kleinow*

The impact of environmental and climate-related variables on mortality rates has been a subject of significant interest in the literature. This research focuses on weekly death counts in European regions (NUTS3). We use the Serfling mortality model as a baseline model to explain mortality deviations from this baseline model using climate factors such as temperature, humidity, wind speed, and rainfall and environmental factors such as air pollutants PM10, PM2.5, O3 and NO2. We do this by means of a gradient boosting machine. We extract the climate variables from the gridded observational data set EOBS and the environmental factors from the Copernicus Atmosphere Monitoring Service (CAMS) gridded database. By leveraging this approach, we aim to discern the crucial factors influencing excess mortality and unravel potential interaction effects among these factors.

## EXTERNAL REPORTS

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K. Antonio, S. Devriendt, J. Robben & D. Sznajder. 2020. Assessing the impact of COVID-19 on the IA|BE 2020 mortality projections: a scenario analysis. *Published by the Institute of Actuaries in Belgium.*

K. Antonio, S. Devriendt & J. Robben. 2020. The IA|BE 2020 mortality projection model for the Belgian population. *Published by the Institute of Actuaries in Belgium.*

## CONFERENCES & SEMINARS

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2023      Modelling and Societal Impact of Longevity and Ageing Conference (Amsterdam), 26th International Congress on Insurance: Mathematics and Economics (Edinburgh), RCLR seminar (2023), Second Doctoral Seminar (Leuven)

2022      Insurance Data Science Conference (Milan), European Actuarial Journal Conference (Tartu), First Doctoral Seminar (Leuven).

2021      24th International Congress on Insurance: Mathematics and Economics (online)

## TEACHING

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Thesis supervisor of master students in the Master of Actuarial and Financial Engineering since 2020

Teaching assistant for the course "Loss Models" since 2020: responsible for giving the exercise sessions and developing/correcting three assignments.

## AWARDS

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AFI Master Thesis Award (2020)

## REFEREE

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Annals of Actuarial Science

## SKILLS

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**Software:** R,  $\text{\LaTeX}$ , Python

**Language:** Dutch (native), English (fluent), French (basic)

## BIO

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**Birth:** September 7, 1996

**Citizenship:** Belgian

**Hobbies:** Running, Hiking

## REFERENCES

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### **Katrien Antonio**

Professor in Actuarial Science  
KU Leuven & Universiteit van Amsterdam

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### **Jan Dhaene**

Professor in Actuarial Science  
KU Leuven

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### **Torsten Kleinow**

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Universiteit van Amsterdam

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