Oisín Hamilton

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Experience

Royal Meteorological Institute of Belgium, PhD Fellow — Brussels, Belgium, Oct 2021 – Oct 2024

- Coding lead on significant modifications of a coupled atmosphere model (qgs).
- Lead developer introducing a meridional gradient in the qgs model in key parameters to allow simulation of climate change forcings.

WSP, Transport Planner — London, UK, Oct 2017 – Apr 2021

- Project lead for modelling electric car uptake across the UK, using targeted census data, demographic information, and car life span probability.
- Modelled the number of people on each train, during COVID lockdown, using ticket data, to ensure distancing could be maintained.
- Project manager and coding lead to create a workflow to combine timetable, performance, and planned engineering work data to output a forecast for capacity for the London Overground.
- Coding lead on a research project for the Department of Transport, calculating the number of journeys taken on season tickets.
- Coding lead for calculating emissions of rail services, using timetable information, rolling stock types, and forecast carbon emissions of the UK power grid.

Education

PhD **Atmospheric Modelling and Chaotic Dynamics** — **UC Louvain**, 2021-2025
Focusing on chaotic dynamical systems.

MSc **Mathematical Modelling** (Distinction) — **University College London**, 2018-2020
Network modelling, optimisation techniques, & numerical methods.

BA **Mathematics (Major) - Philosophy (Minor)** (1st Hons) — **Trinity College Dublin**, 2013-2017
Statistics, probability, linear algebra, as well as theoretical topics.

Publications

Using Unstable Periodic Orbits to Understand Blocking Behaviour in a Low Order Land-Atmosphere Model
Hamilton, O., Demaeyer, J., Crucifix, M. and Vannitsem, S. 2025. *Chaos*, 35 (8)

auto-AUTO: A Python Layer for Automatically Running the AUTO-07p Continuation Software
Jonathan Demaeyer & **Oisín Hamilton**. 2025. *JOSS* (under review)

Multistability in a Coupled Ocean Atmosphere Reduced-order Model: Nonlinear Temperature Equations.
Hamilton, O., Demaeyer, J., Crucifix, M. and Vannitsem, S. 2023. *QJRMS* 149 (757)

Skills

Languages & Tech: Python, Julia, VBA, Fortran, Excel best practice, linux based OS

Other: public speaking and presentation skills, data visualisation, project management.

I sail for fun and have raced competitively. I was a senior instructor for four years, managing 10 other instructors.

I enjoy riding my bike. I have completed trips through 13 countries and covered a total distance of over 7,000km.