

# **RESUME OF SEBASTIAN WOODWARD (2026)**

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Mathematical Institute, University of Oxford

## **Research:**

I am a fourth-year Mathematics DPhil student at the University of Oxford, supervised by Professor Melanie Rupflin, in the OXPDE group, working in the broad research area of geometric analysis and PDEs, with potential applications to Skyrmon models. In particular, I have been studying the question of quantitative stability for almost-minimising maps of both the Dirichlet Energy and its variants arising in Skyrmon models, with a focus on settings for which exact minimisers either fail to exist or become singular.

## **Education:**

- 1) 2019 – 2023: Achieved a First Class Integrated MMath with Honours at the University of Warwick with a Master's Supervisor of Professor Peter Topping
- 2) 2023 -: Studying for a DPhil in Mathematics at the University of Oxford under the supervision of Professor Melanie Rupflin in OXPDE Group

## **Teaching Experience at the University of Warwick**

- 1) September 2022 – July 2023: Graduate Teaching Assistant / Supervisor with the responsibility of marking the assignments for 10 First Year Students and then going through the problems with them in smaller groups.
- 2) September 2022 – July 2023: Maths Society Academic Support, which entailed both running a two-hour weekly drop-in session to help students with any parts of the courses they were struggling with, as well as organising some revision sessions for first- and second-year courses.

## **Collegiate Teaching Experience at the University of Oxford**

- 1) Stipendiary Lecturer at St Hilda's covering Analysis I and II Michaelmas Term and Hilary Term 2025-2026
- 2) Out of College Tutor for Magdalen College covering Prelims, Linear Algebra 2, and Revision Sessions: Hilary Term and Trinity Term Academic Year 2024-2025
- 3) Out of College Tutor for St Edmund's Hall covering Prelims Differential Equations for a visiting student: Michaelmas Term Academic Year 2023 - 24
- 4) Out of College Tutor for St Edmund's Hall covering M5: Fourier Series and PDEs for a visiting student: Hilary Term Academic Year 2023-2024

## **Departmental Teaching Experience at the University of Oxford**

- 1) Tutor for C4.3 Functional Analytic Methods for PDEs: Michaelmas Term Academic Year 2025-2026
- 2) Tutor for C4.3 Functional Analytic Methods for PDEs: Michaelmas Term Academic Year 2024-2025
- 3) Tutor for B4.3 Distribution Theory: Hilary Term Academic Year 2024-2025
- 4) Teaching Assistant for two classes of B3.2 Geometry of Surfaces: Michaelmas Term Academic Year 2023-2024
- 5) Teaching Assistant for one class of B4.2 Functional Analysis II – Hilary Term Academic Year 2023-2024

**Academic Talks:**

- 1) Short talk at Spectral Theory workshop in Reading August 2025
- 2) Geometry, Analysis and Numerical Gravity Seminar talk at Queen Mary University September 2025
- 3) Gave a lightning talk at British Isles Graduate Workshop VI
- 4) Junior Geometry Seminar Oxford – October 2025
- 5) Junior PDE Seminar Oxford – November 2025
- 6) Junior Analysis and Probability Seminar Warwick – December 2025
- 7) ICMS Winter School: PDE in geometry and analysis - January 2026
- 8) Poster at Bonn Calculus of Variations Conference - February 2026
- 9) Short talk at YFAW in Cardiff - March 2026
- 10) Junior PDE Seminar Oxford – April 2026
- 11) Bath Analysis Seminar Talk - April 2026

**Papers:**

- 1) A sharp quantitative stability result near infinitely concentrated minimisers (joint with M. Rupflin - arxiv 2026)