

## DR. DANIEL RICHARDS

Australian Centre for Excellence in Antarctic Science, Institute for Marine & Antarctic Studies,  
University of Tasmania, Hobart, Australia  
daniel.richards@utas.edu.au — +61413173423

### PROFESSIONAL APPOINTMENTS

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- Visiting Postdoctoral Research Associate** 11/23 - present  
Monash University, School of Earth, Atmosphere and Environment  
Hosted by Dr. F. McCormack
- Postdoctoral Research Associate** 03/23 - present  
University of Tasmania, Institute for Marine & Antarctic Studies  
Advised by Dr. E. Mantelli
- Postdoctoral Research Associate** 11/21 - 12/22  
University of Leeds, School of Mathematics  
Advised by Dr. S. Pegler & Prof. S. Piazzolo
- Junior Aerodynamicist** 08/16 - 04/17  
Force India Formula 1 Team  
Responsible for part of the design of the front wing, including computational and experimental testing

### EDUCATION

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- PhD, Fluid Dynamics, University of Leeds** 2017-21  
Thesis title: *Modelling Ice Fabric Evolution and its effect on Viscous Anisotropy*  
Supervised by Dr. S. Pegler, Prof. S. Piazzolo, Dr. O.G. Harlen
- MSc, Fluid Dynamics (integrated with PhD) University of Leeds (1st class)** 2017-18  
Dissertation: *The Fluid Mechanics of Water Separation from Biodiesel via Coalescence Filtration*  
Supervised by Prof. N. Kapur & Dr. M. Wilson
- MEng, Aerospace and Aerothermal Engineering, University of Cambridge (1st class)** 2012-16  
Dissertation: *Computing Complex Vortex Flows using Spectral Methods*  
Supervised by Prof. J. Harvey

### HONORS & AWARDS

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- UK National Fellowship in Fluid Dynamics (declined)** 2022  
Title: *A unified continuum framework for modelling anisotropic polycrystalline flow*, a 3 year personal fellowship at the University of Leeds, total amount: £300k
- EPSRC mathematical sciences small grant (named reseacher) (declined)** 2022  
Title: *A general continuum theory of polycrystalline materials*, extending the ideas in my PhD from ice to other polycrystalline materials, total amount: £80k
- Travel award: IGS Symposium on Ice in a Sustainable Society, Bilbao, Spain** 2022
- EPSRC Doctoral Prize** 2021  
1 year fellowship awarded to continue the research from my PhD, University of Leeds
- EPSRC Fluid Dynamics CDT full studentship award, £80k** 2017-21

## HIGHLIGHTED TALKS AND SEMINARS

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**Invited talk, AGU23** 2023  
In the session *From Grain to Earth: Understanding Plate Tectonics Through Rock Microphysics and Recrystallization to Mantle-Scale Analyses*

**Invited talk, Tübingen Structural Geology-Glaciology seminar** 2022

**Other talks:** University of Tasmania (2023); EGU (2022, 2020 [Online]); Ice in a Sustainable Society (2021); AGU (2021, [Online])

## MENTORING & TEACHING

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**MSc Student Mentoring:** Maisie Muir, Data Science & Analytics 2021  
University of Leeds. I contributed by providing support and guidance to the student in terms of methodology, and contribute to the scientific objectives.

**Teaching Assistant:** Elementary Differential Calculus 2021  
School of Mathematics, University of Leeds

**Teaching Assistant:** Modelling with Differential Equations 2019  
School of Mathematics, University of Leeds

## SERVICE TO THE COMMUNITY

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**Journal Referee:** Nature Communications, Journal of Geophysical Research 2022 - present

**Co-organizer:** 'Maths on Ice' 2023 - present  
An international online seminar series/discussion forum on mathematical glaciology, with Kasia Warburton and Alex Bradley

## SOFTWARE OUTPUTS

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**SpecCAF:** Python implementation of a Spectral Continuum Anisotropic Fabric model, link 2022

**mcfab:** Monte-Carlo and GPU based fabric evolution solver, link 2023

## REFERENCES

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**Prof. Elisa Mantelli** elisa.mantelli@lmu.de  
Postdoctoral advisor, University of Tasmania and Ludwig Maximilian University of Munich

**Prof. Sandra Piazzolo** s.piazzolo@leeds.ac.uk  
PhD supervisor, University of Leeds

**Dr. Sam Pegler** s.pegler@leeds.ac.uk  
PhD supervisor, University of Leeds