



University
of Exeter

My Journey in Academia: a focus on teaching and scholarship in higher education mathematics

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Introduction:

Brief overview of current position as an Associate Professor of Mathematics at the University of Exeter.

Outline of the presentation: educational background, key scholarship projects, and journey as an educator, challenges, and pieces of advice.



Early Academic Background

Bachelor of Science in Mathematics:

- Institution: Brunel University; graduation: July 2010

• PhD in Mathematics:

- Institution: Brunel University
- Funding: Engineering and Physical Sciences Research Council (EPSRC)
- Completion: April 2014

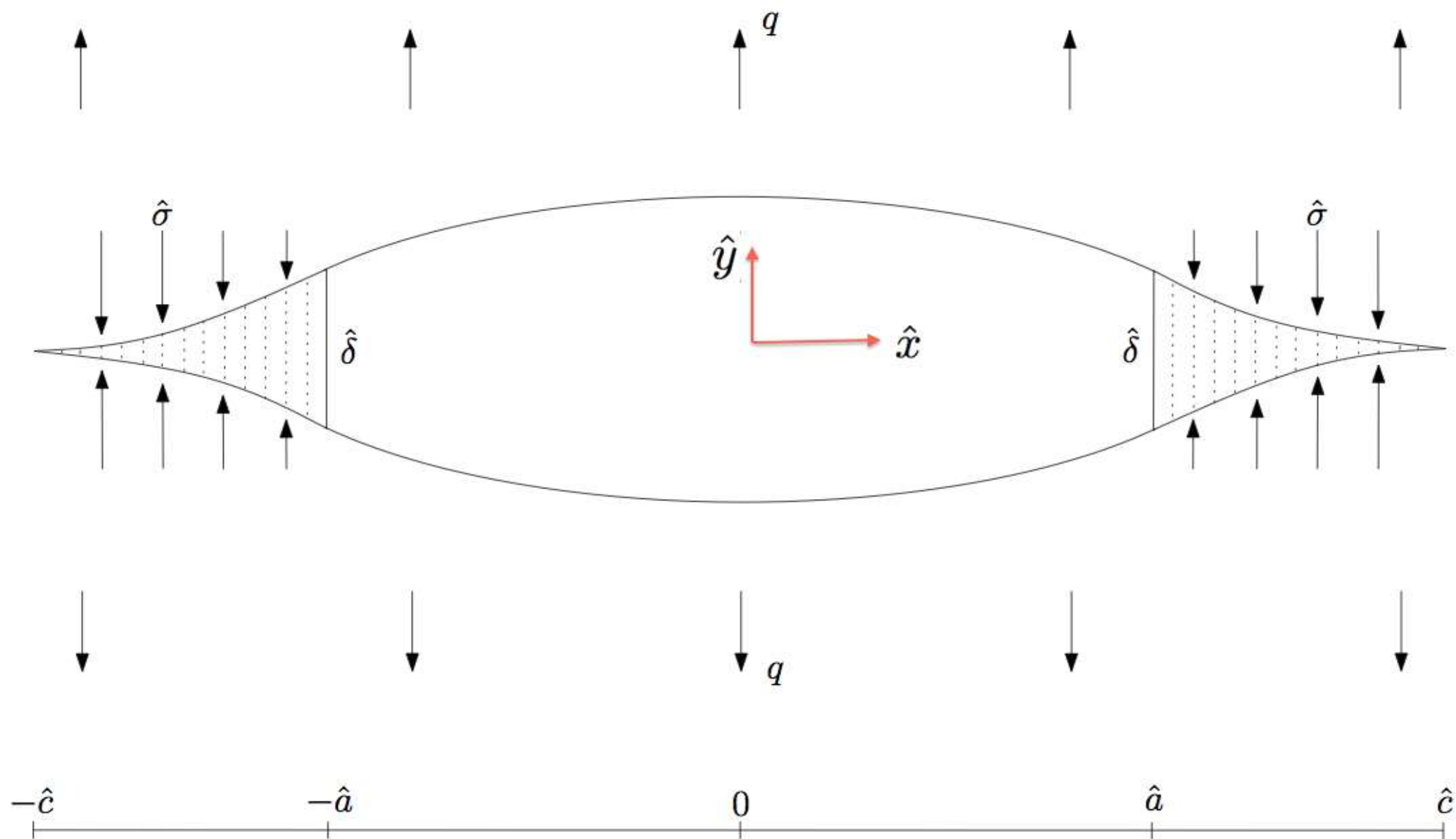
Title: Numerical and Analytical Methods in Fracture Mechanics

Research Focus: Nonlinear Abel-type integral equations; cohesive zone models in materials with history-dependent properties

Key Publications during PhD:

- "Nonlinear Abel type integral equation in modelling creep crack propagation" (2011)
- "Cohesive Zone Models in History Dependent Materials" (2013)







Postdoctoral Work and Early Career
Postdoctoral Research Associate:

Institution: Imperial College London

MOSS: Processing and archiving binary large objects
using functional programming

Department: Computing, Mathematics



s&m

Innovate UK
Technology Strategy Board

Imperial College
London



Transition to University of Exeter

Joined as an E&S lecturer in April 2018

Department: Mathematics and Statistics

2018-2019 highlights;

Mobile Learning (PCAP)

Group Projects MTH3035

Resource design MTH2001 Analysis

Education Incubator project: Online quizzes

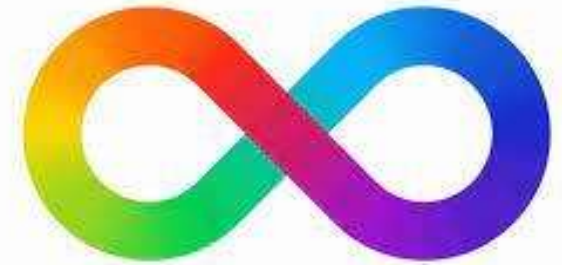
Teaching: lectures, tutorials, project supervision, personal tutees



NUMBAS



Other projects



Maths Cafe

The Exeter Spectrum Project, Success for all July 2019–July 2020

Pilot program to recruit, retain and improve achievement of autistic students, and increase progression to employment. In collaboration with Professor Barrie Cooper.

Mobile Learning continuation June 2020–July 2020

Mathematics without Tears and Fears July 2020–July 2021

Creating pedagogical games that teach proof by contradiction. In collaboration with Dr. Pascal Steifenhofer at the University of Newcastle, and Dr Weihan Ding.

Encompass: Decolonising STEM May 2021–July 2021 Research on decolonising the STEM curriculum in HE. In collaboration with Dr John Bruun.

Fundamentals of Non-formal Education; in collaboration with Professor Beatriz Isabel Gomez Garcia at the University of Monterrey, Mexico

Teaching Philosophy:

- Empathy (students transitioning)
- Show passion
- Emphasis on integrating research with teaching
- Encourages critical thinking and problem-solving
- Utilizes algorithmic tools in teaching mathematics
- Observe and learn from others



Other education-related activities:

- Stage coordinator
- DESE: curriculum development and student engagement
- Mentoring and Community Engagement
- Contributions to academic conferences and symposiums (including THE, Imagining the Future of STEM Education, Reimagine Education)
- Invited speaker at international conferences
- Transition and Induction Coordinator for CEMPS

Challeneges

- Stereotypes growing up
- Maternity leave periods: Feb 2016-Sep 2016, July 2017-March 2018
- Education & Scholarship, Education & Research wobble

Advice

- Collaboration and partnership
- Having a good idea of what you're good at
- Do more of what you enjoy
- Supportive academic environment
- Identified a gap: write it down, brainstorm
- Membership of professional bodies



Thank you!

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