Dan J. Hill, PhD, MMath (Hons)   Postdoctoral Researcher

PERSONAL INFORMATION

309, AG Groves, E2.4
Saarland University
Saarbrücken, Germany

ORCiD: 0000-0001-7934-6618
ResearchGate: Dan J. Hill
Scholar: Dan J Hill

🛈: danjhill.com
✍: hill@math.uni-sb.de
✉: dan.j.hill95@gmail.com

RESEARCH INTERESTS

Applied analysis, dynamical systems, spatial localisation, spatial dynamics, pattern formation.

EDUCATION

- **PhD in Mathematics**   University of Surrey, UK
  Title: Existence of Small Amplitude Localised Patterns on the Surface of a Ferrofluid   *October 2017 - June 2021*
  - **Supervisors**: David Lloyd and Matthew Turner.

- **MMath Mathematics (Degree class: First - 86%)**   University of Surrey, UK
  Title: 3D incompressible Navier-Stokes equations in a thin spherical shell   *September 2013 - June 2017*
  - **Supervisor**: Bin Cheng.

EMPLOYMENT

- **Postdoctoral Research Assistant**   Saarland University
  Saarbrücken, Germany   *January 2022 - Present*
  - **Role**: I am currently a research assistant in the mathematics department of Saarland University, within the working group of Prof. Mark Groves. This role includes acting as teaching assistant on a Partial Differential Equations course for the spring semester.

- **Scientific Consultant**   Dr. Luke Roberts
  Brighton, UK   *September 2021 - December 2021*

FELLOWSHIPS

07/2023 - 06/2025   **Humboldt Research Fellowship for Postdocs**, Alexander von Humboldt Foundation, Germany

PUBLICATIONS

2. D.J. Hill, *Existence of localised radial patterns in a model for dryland vegetation*, IMA J. Appl. Math. (2022), **39 pages**, doi: 10.1093/imamat/hxac007

1. D.J. Hill, D.J.B. Lloyd & M.R. Turner, *Localised Radial Patterns on the Free Surface of a Ferrofluid*, J. Nonlinear Sci. **31**, 79 (2021), **99 pages**, doi: 10.1007/s00332-021-09719-z

Submitted Papers

[1] D.J. Hill, J.J. Bramburger & D.J.B. Lloyd, *Approximate localised dihedral patterns near a Turing instability*, accepted in Nonlinearity (2022), 59 pages, arXiv: 2203.09363

[2] D.J. Hill, J.J. Bramburger & D.J.B. Lloyd, *Rings of Dihedral Patterns near a Turing Instability*, submitted (2022), 33 pages, arXiv: 2210.13122

RESEARCH PRESENTATIONS

Conferences

05/2023	*'Branching out: a new generation's …'* *Minisymposium*, **SIAM Conference on Applications of Dynamical Systems**, Portland, USA
04/2023	*'Dynamics of Reaction-Transport Systems' Minisymposium*, **British Applied Mathematics Colloquium**, Bristol, UK
09/2022	**Workshop on Spatial Dynamics and Related Approaches**, University of Stuttgart, Germany
09/2022	*'(De)stabilizing Fronts and Interfaces in Reaction-Diffusion Systems' Minisymposium*, **SIAM Conference on Nonlinear Waves and Coherent Structures**, University of Bremen, Germany
08/2021	**International Congress of Theoretical and Applied Mechanics** (online), Milan, Italy
07/2021	**4th IMA Conference on Nonlinearity and Coherent Structures** (online), University of Loughborough, UK
05/2021	**SIAM Conference on Applications of Dynamical Systems** (online)
04/2021	*'IMA Lighthill-Thwaites Prize' Minisymposium*, **British Applied Mathematifs Colloquium** (online), University of Glasgow, UK
07/2020	*'Wave and front dynamics' Minisymposium*, **SIAM Conference on Nonlinear Waves and Coherent Structures**, University of Bremen, Germany*
01/2020	**Surface and Internal Waves Workshop**, University of Surrey, UK
08/2019	**Equadiff** (Poster), University of Leiden, Netherlands
04/2019	**British Applied Mathematics Colloquium**, University of Bath, UK
	*Conference cancelled due to the COVID-19 pandemic

Seminars

12/2022	**Seminar on Analysis, Geometry and PDEs**, Lund University, Sweden
07/2022	**Applied Analysis Seminar**, Saarland University, Germany
06/2021	**'Nonlinear Waves and Geophysical Fluid Dynamics' Seminar** (online), University of Surrey, UK
05/2021	**Leeds Applied Nonlinear Dynamics (LAND) Seminars** (online), University of Leeds, UK
10/2020	**Postgraduate Research Seminar** (online), University of Surrey, UK
06/2020	**Waves in One World** (online), One World Seminars
05/2020	**'Chair for Analysis and Modelling' Seminar** (online), University of Stuttgart, Germany
05/2020	**Applied Analysis Seminar** (online), University of Bremen, Germany
04/2020	**'Dynamical Systems and PDEs' & 'Nonlinear Waves and Geophysical Fluid Dynamics' Research Seminar** (online), University of Surrey, UK
07/2019	**Applied Analysis Seminar**, Saarland University, Germany
02/2019	**Postgraduate Researcher Seminar**, University of Surrey, UK

GRANTS

05/2021	**Student Travel Award**, *Society for Industrial and Applied Mathematics - registration waiver for SIAM Conference on Applications of Dynamical Systems*
07/2020	**LMS Early Research Travel Grant**, *London Mathematical Society - £500 for travel to SIAM Conference on Nonlinear Waves and Coherent Structures**
07/2020	**FEPS Travel Award**, *Faculty of Engineering and Physical Sciences*, University of Surrey *- £850 for travel to SIAM Conference on Nonlinear Waves and Coherent Structures**
08/2019	**FEPS Travel Award**, *Faculty of Engineering and Physical Sciences*, University of Surrey *- £770 for travel to Equadiff*
	*Unclaimed due to the COVID-19 pandemic

Outreach Presentations

12/2020	**'Taste of Research' Undergraduate Seminars (TORUS)**, University of Surrey, UK
03/2020	**Pi Day Mathematics Event**, Duke of Kent School, Ewhurst, UK
11/2019	**Mathematics PhD Open Afternoon**, University of Surrey, UK
07/2019	**Mathematics Widening Participation Summer School**, University of Surrey, UK
07/2019	**Royal Alexandria and Albert School Campus Visit**, University of Surrey, UK
03/2019	**Mathematics Taster Day**, University of Surrey, UK
10/2018	**Mathematics PhD Open Day**, University of Surrey, UK
10/2018	**'Taste of Research' Undergraduate Seminars (TORUS)**, University of Surrey, UK
07/2018	**Mathematics Widening Participation Summer School**, University of Surrey, UK

Organisation

Minisymposia

05/2023	*Branching out: a new generation's perspective on spatial localisation in higher dimensions*, **SIAM Conference on Applications of Dynamical Systems**, Portland, USA
08/2020	*Localisation in Physical and Biological Applications*, **SIAM Conference on Nonlinear Waves and Coherent Structures**, University of Bremen, Germany*
	*Conference cancelled due to the COVID-19 pandemic

Seminars

09/2018 – 08/2020	**Postgraduate Research Seminars (PRS)**, Department of Mathematics, University of Surrey, UK
09/2018 – 08/2020	**'Taste of Research' Undergraduate Seminars (TORUS)**, Department of Mathematics, University of Surrey, UK

Awards

03/2023	**Outstanding Reviewer Award**, Nonlinearity
11/2022	**Trusted Reviewer Status**, IOP Publishing
04/2021	**Finalist for the IMA Lighthill-Thwaites Prize**, BAMC 2021, UK
08/2014	**First Year Departmental Award for Excellent Performance**, University of Surrey, UK

Professional Services

- **Athena Swan Committee Member** — Department of Mathematics
  University of Surrey, Guildford, UK — *September 2020 - June 2021*

- **Postgraduate Researcher Representative** — Department of Mathematics
  University of Surrey, Guildford, UK — *September 2018 - August 2020*

- **Postgraduate Student Mentor** — Faculty of Engineering and Physical Sciences
  University of Surrey, Guildford, UK — *September 2018 - August 2019*

Journals Refereed

- Nonlinearity
- Journal of Nonlinear Science
- Journal of Mathematical Methods