

Ayesha Hussain

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Climate Modelling Postdoctoral Research Fellow, interested in how natural vegetation responds to enhanced CO₂, with particular focus on Nitrogen limitation.

(Correct as of 9th November 2023)

Research

Climate Research.....

SPRUCE-MIP: Model Intercomparison of Northern Peatland Carbon Cycle Over the SPRUCE Site (Shi, X. et al) (2023+): Submitted to AGU Conference

<https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1396189>

Number Theory.....

The Limiting Distribution of Legendre Sums (Hussain, A. and Lamzouri, Y.) (2023+): Submitted to Journal

<https://arxiv.org/pdf/2304.13025.pdf>

The Limiting Distribution of Character Sums (Hussain, A.) (2022): Published at 'International Mathematical Research Notices' (IMRN)

<https://doi.org/10.1093/imrn/rnab194>

Employment

University of Exeter

Postdoctoral Research Fellow

2022–Present

Working on the Land Productivity Drivers work package as part of the EU ESM2025 grant.

Advised by Dr Pierre Friedlingstein.

Education

University of Bristol

PhD Student

2018–2022

Thesis titled *Character Studies: Investigating the Limiting Distribution of Character Sums*.

Advised by Dr Jonathan Bober.

University of Durham (Grey College)

Integrated Masters Student, 1st Class

2013–2017

Final year project titled *The Rankin-Selberg Bound: Bounding the Fourier Coefficients of Cusp Forms Using the Rankin-Selberg Method*.

Advised by Dr Jens Funke and Dr Thanasis Bouganis.

Teaching Experience

University of Bristol

Module Tutor/Moderator/Assistant for Various Courses

Autumn 2018 – Spring 2022

- Third year Number Theory homework marker (Spring 2022)
- First year Mathematics 1A20 module tutor (Autumn 2021)
- Mathematical Investigations moderator (Spring 2021)
- Exam marker Mathematics 1A20 module (Spring 2021)
- Perspectives in Mathematics moderator (Autumn 2020)
- First year Mathematics 1A20 module tutor (Autumn 2020)
- Analysis B module tutor (Spring 2020),
- Number Theory module homework marker (Spring 2020),
- First year Mathematics 1A20 module tutor (Autumn 2019),
- Engineering Mathematics Teaching Assistant (Autumn 2019),
- Numerical Analysis Teaching Assistant (Spring 2019),
- First year Mathematics 1A20 module tutor (Autumn 2018).

University of Durham

Homework Marker

Autumn 2016 – Spring 2017

Second year Numerical Analysis module homework marker.

Miscellaneous.....

Self Employed

Private Tutor

2011 – Present

One-on-one Mathematics tutor.

- Preparing pupils for 11+, 13+, GCSE, A Level and University Admission examinations.

Seminar Talks

EU (Virtual)

EU ESM2025 Land Productivity Drivers Meeting

February 2023

Nitrogen Limitations at BiFOR

University of Exeter

Land Surface Modelling Discussion Group

February 2023

A Tale of 2 FACE Sites

University of Exeter

Climate Coffee

November 2022

Enhanced CO_2 Experiments

University of Warwick

Warwick Number Theory Seminar

January 2022

Distributions of Character Sums

University of Bristol

Postgraduate Seminar

October 2021

The Man, The Myth, The Legend(re)

University of Oxford (Virtual)

Oxford Junior Number Theory Seminar

May 2021

Distributions of Character Sums

University of Montreal (Virtual)

Mobius ANT Seminar

March 2021

Distributions of Character Sums

University College London

London Junior Number Theory Seminar (Virtual)
What Is a Random Multiplicative Function

March 2021

University of Bristol (Virtual)

Postgraduate Seminar
Introduction to Random Multiplicative Functions

November 2020

University of Bristol

Linfoot Seminar
Distributions of Character Sums

March 2020

University of Bristol

Postgraduate Seminar
Paths of Dirichlet Characters

November 2019

Conference Talks

University of Bristol (Virtual)

MINGLE 2021
The Probability Behind Yahtzee

September 2021

Virtual Conference

CANT Workshop
Distributions of Character Sums

May 2021

Virtual Conference

Women In Number Theory and Geometry
Distributions of Character Sums

January 2021

Virtual Conference

3rd BYMAT Conference
Distributions of Character Sums

December 2020

University of Bristol (Virtual)

MINGLE 2020
Animals and Counting

September 2020

University of Warwick

Young Researchers in Algebraic and Analytic Number Theory
Paths of Dirichlet Characters

November 2019

Conferences

University of Bristol

Young Researchers in Number Theory, Co organiser

August 2021

Virtual Conference/Paris

Summer School in Analytical Number Theory

June 2021

University of Bristol

Young Researchers in Mathematics, Co organiser

June 2021

City University of New York

CANT Workshop

May 2021

Insitut Mittag Leoffler

Number Theory Research Program

January-March 2021

Virtual Conference <i>Women In Number Theory and Geometry</i>	January 2021
Virtual Conference <i>3rd BYMAT Conference</i>	December 2020
Virtual Conference <i>Black Heroes of Mathematics Conference</i>	October 2020
University of Bristol <i>Heilbronn Annual Conference 2020</i>	September 2020
University of Warwick <i>Young Researchers in Algebraic Number Theory</i>	November 2019
University of Oxford <i>Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)</i>	September 2019
University of Bristol <i>Heilbronn Annual Conference 2019</i>	September 2019
Grand Hotel San Michele, Cetraro, Italy <i>Symposium on Analytic Number Theory</i>	July 2019
University of Bristol <i>CMI-HIMR Summer School in Computational Number Theory</i>	June 2019
University of Mississippi <i>NSF-CBMS Conference: L-Functions and Multiplicative Number Theory</i>	May 2019
University of Cambridge <i>Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)</i>	January 2019
University of Sheffield <i>Young Researchers in Algebraic Number Theory</i>	November 2018

Outreach

Mulberry Schools Trust <i>What is a Maths PhD?!</i> Gave a talk to A-Level students about Mathematics at University.	February 2023
University of Bristol <i>Women in Maths Research</i> Gave a talk to years 10-12 about Early Career Researchers.	February 2023
University of Bristol <i>Women and Non-Binary People in Maths: Opportunities for the future</i> Conference co-organiser for the 2 day event.	November 2021
University of Bristol <i>Women and Non-Binary People in Maths: Opportunities for the future</i> Conference co-organiser for the 2 day event.	November 2020
University of Bristol <i>Women in Mathematics Research</i> Main conference organiser promoting studying Maths to A level students.	June 2020
University of Bristol <i>Women and Non-Binary People in Maths: Opportunities for the future</i>	November 2019

Conference co-organiser for the 2 day event.

University of Bristol

Women in Mathematics Research

September 2019

Gave a workshop on aspects of my research.

Cheltenham Science Festival

Discover Zone Mathematics Stand

June 2019

Helped showcase interactive Mathematics exhibits for the general public.

Walthamstow Hall Senior School

Mathematics at Undergraduate Level and Beyond

November 2018

Gave talks to years 10-12 about Mathematics at University.

Francis Holland School

Mathematics: Applications after School

November 2018

Gave talks to years 10-12 about Mathematics at University.

Miscellaneous

Programming Experience: Experience using Latex, Python, SQL, HTML, CSS.

Seminar Co-organiser: Linfoot Seminar.

Conference Co-organiser: MINGLE 2019 (annual Bristol postgraduate conference).

Conference Co-organiser: Young Researchers in Mathematics 2021, Young Researchers in Algebraic and Analytic Number Theory 2021.

Conference Organiser: 'Women in Mathematics Research Workshop' 2020 with AMSP.

Reading Group Organiser: Random Multiplicative Functions Reading Group.

References

Available on Request