

# Alistair J. Chopping

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**Durham University**  
**Department of Mathematical Sciences**  
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*I am currently a PhD student under the supervision of Dr Arthur Lipstein & Dr Charlotte Sleight, in the Department of Mathematical Sciences at Durham University. I am interested in various problems at the interface of Quantum Field Theory and Gravity, one example being the interplay between holography and the cosmological bootstrap. I also have interests in the conformal bootstrap programme, and in quantum information theory.*

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## Employment

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- **Graduate Teaching Assistant.** *October 2022 - Present*  
Department of Mathematical Sciences, Durham University, UK.

## Education

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- **PhD Mathematical Sciences - Theoretical Physics.** *October 2021 - Present*  
Department of Mathematical Sciences, Durham University, UK.

Supervisor: *Dr Charlotte Sleight.*  
Project: *Bootstrapping Holography.*

- **MPhys (Hons) Theoretical Physics.** *September 2017 - June 2021*  
Department of Physics, Swansea University, UK.

**Grade:** 1st Class Honours, 89% Average.  
**MPhys Thesis:** *Black Holes and The Information Loss Paradox.*  
Supervisors: *Professor Timothy Hollowood & Professor S. Prem Kumar.*

Grades include:  
100% in Quantum Mechanics II, Mathematical Methods I and Physics Simulation,  
99% in Statistical Physics and Foundations of Astrophysics,  
94% in Advanced Particle Physics,  
92% in General Relativity,  
89% in Quantum Field Theory.

## Academic Experience

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### Honours & Awards

- STFC PhD Studentship *September 2021 - March 2025*  
Durham University, UK.
- PM Davidson Prize *2021*  
Swansea University, UK.  
A departmental prize for master's-level research in theoretical physics.

### Conference & Seminar Organisation

- Early Career Researchers in Mathematics (ECRM), *July 2023*  
Durham University, UK.  
Co-organiser. A conference designed to bring together graduate students in Mathematics from across the UK, and across a wide variety of disciplines.
  - Funding sources included the *Heilbronn Institute for Mathematical Research*, the *London Mathematical Society* and the *MAGIC Consortium*.
- Theoretical Physics Student Seminar Series, *September 2022 - June 2023*  
Durham University, UK.  
Co-organiser. A seminar series with participants from the particle theory groups in both the mathematics and physics departments at Durham, in an effort to foster a stronger connection between the two.

### Attended Conferences, Workshops & Schools

- Lezioni Avanzate di Campi E Stringhe (LACES), *November/December 2022*  
Galileo Galilei Institute for Theoretical Physics, Italy.
- Paths to Quantum Field Theory, *August 2022*  
Durham University, UK.
- North British Mathematical Physics Seminar, *June 2022 & 2023*  
University of York, UK.
- Higgs Centre School of Theoretical Physics, *May/June 2022*  
University of Edinburgh, UK.

### Internal Talks

- Early Career Researchers in Mathematics, *July 2023*  
Durham University, UK.
- Student Seminar, *March 2023*  
Durham University, UK.
- Journal Club, *February 2023*  
Durham University, UK.

## Teaching Experience

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### Teaching Assistant

- Tutor for Single Mathematics A, *Michaelmas term 2022/23 & 2023/24, Epiphany term 2022/23*  
Durham University, UK.  
First-year undergraduate module covering elementary calculus, complex numbers and linear algebra.
- Tutor for Mathematical Physics II, *Epiphany term 2023/24*  
Durham University, UK.  
Second-year undergraduate module, for which the Epiphany term covers introductory Quantum Mechanics.

### Outreach

- Contributed to a careers day with Key Stage 5 students on university applications & academic research.  
Hanley Castle High School & Sixth Form Centre, Worcestershire, UK, *July 2023*.

## Additional Information

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### Non-Academic Awards

- Stephenson College Connections Grant, *September 2023*  
Durham University, UK.  
A grant awarded to support activities furthering any of Stephenson College's values; curiosity, responsibility, kindness, inclusion and courage. In this case, the grant was used for language lessons.

### Computing Skills

- Programs & Programming - Extensive experience with  $\text{\LaTeX}$  & *Mathematica*. Experience with *Python* from several undergraduate courses.
- Proficient in *Microsoft Windows*.

### Foreign Language Skills

- English (Native), Italian (Conversational).

## Referees

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- **Dr Charlotte Sleight**, Department of Mathematical Sciences and Computer Science, Durham University, UK.  
E-mail: charlotte.sleight@durham.ac.uk.
- **Dr Ben Hoare**, Department of Mathematical Sciences and Computer Science, Durham University, UK.  
E-mail: ben.hoare@durham.ac.uk.