

# Rudolfs Treilis

PHD STUDENT (EXPECTED JULY 2024) · THEORETICAL AND MATHEMATICAL PHYSICS

University of Durham, Durham, UK

## Education

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### University of Durham

PHD THEORETICAL AND MATHEMATICAL PHYSICS

- Advisor: Dr. Daniele Dorigoni

Durham, UK

Sept 2020 - Jun 2024

### University of Cambridge

MAST APPLIED MATHEMATICS

- Essay advisor: Dr. Matthew B Wingate

Cambridge, UK

Sept 2019 - Jun 2020

### University of Manchester

MPHYS PHYSICS

- Dissertation advisor: Dr. Apostolos Pilaftsis

Manchester, UK

Sept 2015 - Jun 2019

## Professional Experience

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Nov 2021- Apr 2022 **Secretary**, Latvian Council of Science

Jun 2020- Aug 2020 **Programmer**, Giraffe360

Jun 2018- Aug 2018 **Internship in particle physics department**, University of Manchester

Jun 2017 - Aug 2017 **Intern at Space TEM project**, University of Latvia

## Publications

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### PUBLISHED

Daniele Dorigoni, Axel Kleinschmidt, Rudolfs Treilis. 2022. "To the cusp and back: resurgent analysis for modular graph functions," *JHEP* 11 (2022) 048, [arXiv:2208.14087 \[hep-th\]](#).

Daniele Dorigoni, Rudolfs Treilis. 2023. "Two string theory flavours of generalised Eisenstein series," *JHEP* 11 (2023) 102; [arXiv:2307.07491 \[hep-th\]](#).

### AWAITING PUBLICATION

Daniele Dorigoni, Rudolfs Treilis. 2024. "Large- $N$  integrated correlators in  $\mathcal{N} = 4$  SYM: when resurgence meets modularity," [arXiv:2405.10204 \[hep-th\]](#).

## Awards and Prizes

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- 2019 **The University of Manchester Outstanding Academic Achievement Award**, University of Manchester  
**Physics and Astronomy Head of School Prize**, University of Manchester
- 2018 **Hatfield-Heginbottom Scholarship**, University of Manchester  
**Walter Grattidge 3rd Year Prize**, University of Manchester
- 2017 **EPSC 2017 Most Outstanding Student Poster award**, EPSC

## Presentations

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- Apr 2024 *Modular resurgence for integrated correlators in  $\mathcal{N} = 4$  supersymmetric Yang-Mills at large  $N$* : Talk at the conference "Resurgence and modularity in QFT and string theory" at the Galileo Galilei institute, Florence, Italy.
- Nov 2023. *Resurgence of generalised Eisenstein series in string theory*: Talk at the North British Mathematical Physics Seminar, Durham, UK.
- Nov 2023. *Resurgence and generalised Eisenstein series in string theory*: Talk at Séminaire Motifs et intégrales de Feynman, online.
- June 2023. *Resurgent analysis of generalised Eisenstein series in string theory*: Talk at the conference "New connections between physics and number theory", Pollica, Italy.
- November 2022. *Modularity in physics*: Lecture at a student seminar in Durham.
- November 2021 *On the nature of perturbation theory*: Lecture at a student seminar in Durham.
- August 2017 *Discovery of a new carbon star from digital analysis of data at Baldone observatory*: EPSC 2017, Riga, Latvia.

## Teaching Experience

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- Autumn 2022 **The Standard Model**, Teaching Assistant at the University of Durham
- 2021-present **Calculus, Linear Algebra**, Teaching Assistant at the University of Durham
- 2015-present **Physics Olympiad**, One of the teachers for the Latvian physics Olympiad team.

## Professional Development

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- 2021-2022 **University College MCR**, Steward
- 2018-2019 **Manchester Astronomy Society**, Secretary
- 2017-2018 **Manchester Debating Society**, President