

# Eleonora Svanberg

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DAMTP

University of Cambridge

Cambridge CB3 0WA

[3leonora.github.io](https://3leonora.github.io)

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## EDUCATION

### MASt in Applied Mathematics

St John's College

Essay: Holographic CFT<sub>2</sub>: Modular Forms Applied to Quantum Gravity

Funding: Part III International Scholarship by the Faculty of Mathematics, Swedish Engineers Scholarship 2022 etc.

University of Cambridge, UK

2022

### BSc in Physics

Bachelor thesis: [Higher-order time derivative theories and the Ostrogradsky ghost](#)

Supervisor: Dr. Fawad Hassan

Stockholm University, Sweden

2019 - 2022

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## EMPLOYMENTS

### Department of Applied Mathematics and Theoretical Physics, University of Cambridge

Summer Research Intern, 10 weeks on site

Funding: Philippa Fawcett Internship Programme 2021

Travel Grant: Swedish Astronomical Youth Association

Cambridge, UK

Summer 2021

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## PUBLICATIONS

1. **Svanberg, E.**; Cui, C.; Latter, H., MNRAS 2022 [Wavelike nature of the vertical shear instability in global protoplanetary disks](#)
2. **Svanberg, E.**, Preprint 2022 [Higher-order time derivative theories and the Ostrogradsky ghost](#)

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## RESEARCH PROJECTS

### University of Tokyo

The project aims to explore the applications of number theory and algebraic geometry to physics, particularly string theory and black holes. I am currently studying  $L$ -functions.

Supervisor: Dr. Abhiram Kidambi

Remote

2023 -

### University of Cambridge

By using linear analysis and perturbation theory, I examined the wave nature of the non-linear inertial waves in protoplanetary disks due to the vertical shear instability. Moreover, I verified the theory through high-performance simulations using Athena++.

Supervisors: Dr. Can Cui, Prof. Henrik Latter

Publication in MNRAS: <https://doi.org/10.1093/mnras/stac1598>

Remote/Cambridge

2021 - 2022

### Stockholm University

Project: Optimising modelling of data of supernovas type 1a, by focusing on colour bands, ZTF telescope

Supervisor: Prof. Edvard Mörtzell

Stockholm, Sweden

2020

### Royal Institute of Technology (KTH) and ATLAS Experiment, CERN

High School Thesis: Precision measurement of the mass of the z-boson and ATLAS detector improvements

Supervisor: Dr. Giulia Ripellino

Stockholm/Geneva

2018

### ATLAS Experiment, CERN

Summer Student Project: Monte Carlo simulations of the small wheel upgrade of the muon spectrometer

Supervisor: Dr. Edoardo Farina

Geneva, Switzerland

2017

## CODING SKILLS

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**Languages:** Python, Mathematica, LaTeX (and Overleaf), Bash, C++, C#, SageMath

**Libraries:** numpy, matplotlib, snoopy, astropy, pandas etc.

**Frameworks:** PyROOT, HEASoft, PyXspec, Athena++ etc.

**Other:** Experiences with Linux environments and high-performance computing and simulations.

## AWARDS, GRANTS AND HONORS

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<b>Fredrika Bremer Scholarship Fund</b> Master's Studies Scholarship (£2,000)	2023
<b>Dr. Felix Neuberghs Fund</b> Master's Studies Scholarship (£1,500)	2023
<b>University of Cambridge</b> Part III International Scholarship (£8,800)	2022
<b>University of Oxford</b> Saven European Scholarship for Master's Studies (£25,000) <i>Declined due to pursuing Part III</i>	2022
<b>Handelsbanken Anna Whitlock Trust</b> Master's Studies Scholarship (£8,000)	2022
<b>The Society of Swedish Engineers in Great Britain/Swedish Embassy</b> Master's Studies Scholarship (£5,000)	2022
<b>SEB Foundation (AAA)</b> Master's Studies Scholarship (£4,500)	2022
<b>VANBRUUN</b> Master's Studies Scholarship (£950)	2022
<b>Handelsbanken Gustaf Söderbergs Foundation</b> Master's Studies Scholarship (£300)	2022
<b>University of Cambridge</b> Philippa Fawcett Internship Programme, for excellent students in mathematics (£4,000)	2021
<b>Swedish Astronomical Youth Association</b> Travel Grant (£300)	2021
<b>The Swedish King's Foundation for Young Leadership</b> Elected by H.M King for Compass Rose Scholarship (£4,500)	2021
<b>The Swedish Federation of Young Scientists</b> Member of the Year, for my work with Girls in STEM	2018
<b>East Swedish Chamber of Commerce</b> The Future Scholarship, for my high school thesis (£300)	2017
<b>Swedish Astronomical Society</b> Elected as the Swedish student for the annual ESO Astronomy Camp (£1,000)	2016
<b>Oxford Royale Academy</b> Thomas Garner bursary, covering fees for summer courses in mathematics (£3,000)	2016

## INVITED ACADEMIC AND PUBLIC TALKS

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<b>The Lise Meitner Days</b>	Stockholm, Sweden
Talk about getting into physics research at a young age, for Swedish high school students.	2022
<b>The Almedalen Week</b>	Gotland, Sweden
Sweden's annual democracy meeting. Participated in a panel about gender equality in scientific fields	2022
<b>Summer Research Festival</b>	Cambridge, UK
Presenting my mathematical research on astrophysical waves for the faculty and other students.	2021
<b>Girls in STEM</b>	Sweden
Through my organisation Girls in STEM, I have hosted workshops and lectures about why one should study mathematics and physics for students between 8-18 years of age.	2016-

## OUTREACH AND EXTRACURRICULAR

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<b>Student Representative</b>	Cambridge, UK
I was elected, by the committee, as the student representative for my course Part III of the Mathematical Tripos.	2022 - 2023
<b>Physics Student Ambassador for Stockholm University</b>	Stockholm
Involved in marketing videos and produced content on their social platforms with the purpose of getting more people to study physics.	2019 - 2022
<b>Girls in STEM: Co-Founder</b>	Sweden
A non-profit organisation aiming to close the gender gap in STEM (Science, Technology, Engineering and Mathematics) through role models, workshops and a community. <a href="https://girlsinstem.se">https://girlsinstem.se</a>	2016 -
<b>The Swedish Federation of Young Scientists</b>	Sweden
Project: Part of the organising group of the National Research Competition for Swedish High School Students 2020	2020