

Eleonora Svanberg

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RESEARCH INTERESTS

My PhD research is broadly on the interface of physics, number theory, geometry, and computation.

Keywords: string theory, number theory, machine learning, applied mathematics and physics

EDUCATION

Doctor of Philosophy in Mathematics

University of Oxford, UK

Magdalen College

2024 -

Advisor: Prof. Xenia de la Ossa

Funding: STFC Scholarship, Saven European Scholarship

Outreach: DEI Student Representative, London Mathematical Society Committee for Women and Diversity in Mathematics (3 years)

Teaching: Mathematical Institute: Marking: *String Theory I HT25*, Tutor (Magdalen College): *Vector Calculus HT25, Discrete Functions TT25*

Master of Advanced Study in Applied Mathematics

University of Cambridge, UK

Part III of the Mathematical Tripos, St John's College

2022 - 2023

Essay: *Holographic CFT₂: Modular Forms Applied to Quantum Gravity*, project set by Dr. Alejandra Castro

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

Bachelor of Science in Physics

Stockholm University, Sweden

Bachelor thesis: *Higher-order time derivative theories and the Ostrogradsky ghost*

2019 - 2022

supervised by Dr. Fawad Hassan

PUBLICATIONS & PREPRINTS (*IN PROGRESS)

2025

3. *Candelas, P., de la Ossa, X., **Svanberg, E.**, Periods, semiperiods and counting points over finite fields

2022

2. **Svanberg, E.**, Preprint ArXiv [Higher-order time derivative theories and the Ostrogradsky ghost](#)

1. **Svanberg, E.**; Cui, C.; Latter, H., MNRAS [Wavelike nature of the vertical shear instability in global protoplanetary disks](#)

AWARDS & SCHOLARSHIPS

Anders Wall's Foundation Young Scientist Scholarship (£15,000)

2025

University of Oxford STFC Studentship for PhD studies (£150,000)

2024

University of Oxford Saven European Scholarship for "Europe's brightest graduate students" (£3,000)

2024

Nordic Safe Cities Nordic Pioneer Award (£1,800)

2024

Les Houches School Funding to participate in school (£2,100)

2024

G-Research Travel grant to ICTP School on Number Theory and Physics (£900)

2024

Institute of Physics Research Student Conference fund for ICTP School (£300)

2024

Fredrika Bremer Scholarship Fund Master's Studies Scholarship (£2,000)

2023

Dr. Felix Neuberghs Fund Master's Studies Scholarship (£1,500)

2023

University of Cambridge Part III International Scholarship (£8,800)

2022

University of Oxford Saven European Scholarship for Master's Studies (£25,000) *Declined due to pursuing Part III*

2022

Handelsbanken Anna Whitlock Trust Master's Studies Scholarship (£8,000)

2022

The Society of Swedish Engineers in Great Britain/Swedish Embassy Master's Studies Scholarship (£5,000)

2022

SEB Foundation Master's Studies Scholarship (£4,500)

2022

VANBRUUN Master's Studies Scholarship (£950)

2022

Handelsbanken Gustaf Söderbergs Foundation Master's Studies Scholarship (£300)

2022

University of Cambridge Philippa Fawcett Internship Programme, for excellent students in mathematics (£4,000)

2021

Swedish Astronomical Youth Association Travel Grant (£300)

2021

The Swedish King's Foundation for Young Leadership Elected by H.M King for Compass Rose Scholarship (£4,500)

2021

The Swedish Federation of Young Scientists Member of the Year, for my work with Girls in STEM

2018

East Swedish Chamber of Commerce	The Future Scholarship, for my high school thesis (£300)	2017
Swedish Astronomical Society	Elected as the Swedish student for the annual ESO Astronomy Camp (£1,000)	2016
Oxford Royale Academy	Thomas Garner bursary, covering fees for summer courses in mathematics (£3,000)	2016

CODING SKILLS

Languages: Python, Mathematica, LaTeX, Bash/ Zsh, C/C++/C#, SageMath, Pari/GP.

Libraries: numpy, matplotlib, snoopy, astropy, pandas, sympy, pyTorch.

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

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

CONFERENCES, SCHOOLS & WORKSHOPS ORGANISED (*SCHEDULED)

MITP Workshop: Physics and Number Theory [link] 4 days	Remote	2025
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CONFERENCES, SCHOOLS & WORKSHOPS ATTENDED (*SCHEDULED)

*Winter School on Number Theory and Physics [link] 2 weeks	Trieste, Italy	2025
Eurostrings 2025 [link] 4 days	Stockholm, Sweden	2025
MITP Scientific Program: The Arithmetics of Calabi-Yau Manifolds [link] 2 weeks	Mainz, Germany	2025
Nordita Winter School: "Physics of Machine Learning & Machine Learning for Physics" [link] 2 weeks	Remote	2025
Les Houches School: Quantum Geometry [link] 4 weeks; <i>selected for full funding</i>	Les Houches, France	2024
ICTP School of Number Theory and Physics [link] 1 week; <i>G-Research, Institute of Physics</i>	Trieste, Italy	2024
Strings 2024 [link]	CERN, Switzerland	2024

TALKS (*SCHEDULED)

<i>Point Counting over $\mathbb{F}_q$ and Periods of Calabi-Yau Manifolds</i> [link]	MITP Workshop: Arithmetic of Calabi-Yau Manifolds	2025
* <i>Number Theory and Physics: Applications of Point Counting to Black Hole Physics</i>	Oxford: Junior Strings Seminar	2025
* <i>Point Counting and Black Holes: How Physics Helps Us Understand Mathematics</i>	Magdalen College: MCR-SCR Convivum	2025
* <i>Number Theory Applications to Quantum Gravity</i>	Oxford: Particle Theory Seminar	2026

OUTREACH AND EXTRACURRICULAR

I believe scientific fields should be accessible for everyone, no matter their background. Therefore I'm an author, founder ([Girls in STEM](#)) and presenter with inclusivity in STEM being my focus. I have over 400,000 followers on various social platforms. .

UR	Presenter
Presenter for an inclusive educational TV show called "Good to know" (Bra att veta). Out December 2025.	June 2025

Sans Magazine	Columnist
Writing for Fri Tanke's popular science magazine about mathematics. [link]	2024-

Studying STEM — You're smart enough for mathematics	Book
My debut book, best-selling, about studying mathematics, aimed at young people. Published by Fri Tanke. [link]	2024

Technology Development and Management	Piece in anthology
Wrote a piece about the future of technology in the Swedish society. Published by the Swedish Parliament. [link]	2024

Examples of invited talks:

Royal Academy of Engineering Sciences (IVA)	Stockholm, Sweden
Invited to consult on Sweden's strategy to get more young people to study STEM. Ongoing work.	2024 -

NTNU: Trondheim Science Week	Trondheim, Norway
Gave a talk about going into research during your undergraduate degree.	2024

Womxn in Physics Conference	King's College London, UK
Gave talk about pursuing research at a young age.	2023

The Lise Meitner Days	Stockholm, Sweden
Gave a talk about doing physics research in high school.	2022

Example of organisations I've consulted or otherwise worked with include Nobel Prize Foundation, UNESCO, European Union, Swedish Royal Academy of Sciences, The British Royal Society, Swedish Parliament Department of Education, European Space Agency, University of Cambridge, University of Oxford, Stockholm University, Swedish Embassy in the UK and UK Embassy in Sweden.

Last updated on October 29, 2025. Certificates, references and transcripts available upon request.