

# Xavier Kervyn

Peterhouse, 2 Trumpington St.  
CB2 1RD Cambridge, Cambridgeshire, UK  
Born on 18 May 2001. Belgian

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## RESEARCH INTERESTS

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*Keywords:* quantum gravity, supergravity, formal string theory, black holes, asymptotic symmetries, symmetries and dualities, SUSY, integrability, twistor theory, celestial amplitudes, holography

## RESEARCH EXPERIENCE IN THEORETICAL PHYSICS

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**Università degli Studi di Padova**, Padova, Italy

*Summer Research Student, Department of Physics and Astronomy – Theoretical Physics* 2023

- Will join [Prof. Alessandro Sfondrini](#) on the spectrum of a new integrable 2D QFT, deriving its Bethe Ansatz and looking at its relations to string theory & the holographic conjecture in  $\text{AdS}_3$

## EDUCATION

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**Peterhouse, University of Cambridge**, Cambridge, United Kingdom

*Master of Advanced Study in Applied Mathematics* 2022-23

- Part III essay (thesis): *BMS Symmetries of Gravitational Scattering* ([Dr. Prahar Mitra](#))
- Coursework in theoretical physics: QFT; GR; string theory; SUSY; symmetries, particles and fields

**Ecole Polytechnique Fédérale de Lausanne**, Lausanne, Switzerland

*Bachelor of Science in Physics* 2019-22

- Final year at **ETH Zürich** (Zurich, Switzerland) in the frame of the Swiss-Mobility program
- Final year summer project within the CMS collaboration at **CERN** ([Dr. Simone Pigazzini](#))
- Semester project within the Exoplanets and Habitability group: LIFE mission ([Prof. Sascha Quanz](#))

## SELECTED AWARDS, GRANTS & SCHOLARSHIPS

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**Greta Burkill Fund award** – *Peterhouse, University of Cambridge* 03/2023

Travel grant awarded to attend Eurostrings 2023 as a Master student

**Annual Scholarship** – *Swiss Study Foundation* 11/2022

CHF 20'000 awarded for Masters studies at the University of Cambridge [[press statement](#)]

**Excellence Scholarship** – *Colbianco Stiftung* 08/2022

CHF 2'000 awarded for Masters studies at the University of Cambridge

**Fellowship** – *e-fellows.net* 06/2022

Admitted to the career and student network due to my results and extracurricular commitment

**Swiss Study Foundation Fellowship** – *Swiss Study Foundation* 05/2022

The SSF supports outstanding students able to contribute to science and society

**Swiss Mobility Program grant** – *Ecole Polytechnique Fédérale de Lausanne* 09/2021

CHF 1'500 awarded due to my results to pursue my studies at ETH Zurich

**Baccalaureate Merit Award** – *Région Provence-Alpes Côte d'Azur* 07/2019

Awarded for achieving the highest distinction at the French Baccalaureate

**Prix Maupassant de la Jeune Nouvelle** – *Assoc. des Membres d'Or de la Palme Académique* 07/2016

Literary prize, awarded for an essay on the First World War

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## PUBLICATIONS & PREPRINTS

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1. No peer-reviewed publications yet, working on it!

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## CONFERENCES, SCHOOLS AND WORKSHOPS ATTENDED (\*scheduled)

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*XIX Modave Summer School in Mathematical Physics, Modave, Belgium <a href="#">[link]</a>	09/2023
*Advanced school on [...] celestial holography (Celestial 2023), Warsaw, Poland <a href="#">[link]</a>	08/2023
*Integrability, Dualities and Deformations 2023, Durham, UK <a href="#">[link]</a>	07/2023
*Young Researchers Integrability School & Workshop 2023, Durham, UK <a href="#">[link]</a>	07/2023
Eurostrings 2023, Gijon, Spain <a href="#">[link]</a>	04/2023
Young Physicists Forum 2022, ETH Zürich, Switzerland <a href="#">[link]</a>	05/2022

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## CONTRIBUTED TALKS & SEMINARS

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DAMTP Part III Seminar Series, <b>University of Cambridge</b> <i>Gravitational Scattering and covariant phase space methods in Gravity</i>	03/2023
DAMTP Part III Seminar Series, <b>University of Cambridge</b> <i>Holography and Twistor methods in <math>AdS_5</math></i>	12/2022
Group Seminar, <b>ETH Zürich HEP group &amp; CERN CMS collaboration</b> <i>Towards an automatized analysis framework for the upcoming HL-LHC CMS ECAL upgrade</i>	07/2022
LIFEsim Seminar, <b>ETH Zürich Exoplanets and Habitability Group</b> <i>Characterisation of the impact of non-perfect nulls on the detectable planet population by LIFE</i>	12/2021

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## TEACHING EXPERIENCE

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<b>Volunteer Tutor, Village Book Builders</b> (remote)	
• 1:1 weekly online tutoring sessions with a 13yo. child in Mukono, Uganda	2022-23

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## SPECIFIC SKILLS

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**Languages:** French (native); English, German (full working proficiency)  
**Programming:** C++ (OOP), Python (NumPy, Pandas, Matplotlib, Seaborn, Plotly.express, SciPy)  
**Data Analysis:** Python (advanced), MATLAB (intermediate), Microsoft Excel (elementary)  
**Scientific work:**  $\LaTeX$ , Mathematica, scientific writing, funding search and application

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## ACADEMIC REFERENCES

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- **Dr. Prahar Mitra** (*Part III essay setter*)  
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Email: [pm729@damtp.cam.ac.uk](mailto:pm729@damtp.cam.ac.uk)
- **Prof. Matthias Gaberdiel** (*Lecturer for Quantum Mechanics I*)  
Office HIT K 23.1, Institut für Theoretische Physik, ETH Zürich, Wolfgang-Pauli-Str. 27, CH-8093 Zürich, Switzerland.  
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