

Xavier Kervyn

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CB2 1RD Cambridge, Cambridgeshire, UK
Born on 18 May 2001. Belgian

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RESEARCH INTERESTS

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

Università degli Studi di Padova & Institute for Advanced Study, Padova, Italy

Summer Research Student

2023

- Working under [Prof. Alessandro Sfondrini](#) (Padova/IAS) on the spectrum of a new integrable 2D QFT, deriving its Bethe Ansatz and looking at its relations to string theory & holography in AdS_3
- Funding: Fondation du Domaine de Villette

EDUCATION

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
- Funding: Fondation Suisse d'Etudes (Swiss Study Foundation), Colbianco Stiftung

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

Research Grant – *Fondation du Domaine de Villette*

06/2023

CHF 5'000 grant awarded to support summer research in Padova, Italy and Durham, UK

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

PUBLICATIONS & PREPRINTS

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

CONFERENCES, SCHOOLS AND WORKSHOPS ATTENDED (*scheduled)

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

CONTRIBUTED TALKS & SEMINARS

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

TEACHING EXPERIENCE

Volunteer Tutor , <i>Village Book Builders</i> (remote) <ul style="list-style-type: none">• 1:1 weekly online tutoring sessions with a 13yo. child in Mukono, Uganda	2022-23
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SPECIFIC SKILLS

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: L^AT_EX, Mathematica, scientific writing, funding search and application

ACADEMIC REFERENCES

- **Dr. Prahar Mitra** (*Part III essay setter*)
Office B0.02, Department of Applied Mathematics & Theoretical Physics, University of Cambridge, Wilberforce Road, Cambridge CB3 0WA, UK.
Email: pm729@damtp.cam.ac.uk
- **Prof. Matthias Gaberdiel** (*Lecturer for Quantum Mechanics I*)
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