

# Xavier Kervyn

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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

## ACADEMIC TIMELINE

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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](#) to study the spectrum of a new integrable 2D QFT, deriving its Bethe Ansatz and looking at its relations to string theory & the holographic conjecture in  $\text{AdS}_3$
- Funding: Swiss Study Foundation

## EDUCATION

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

*Master of Advanced Study (MASt) 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 programme
- 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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**Annual Scholarship** – *Swiss Study Foundation* 2022

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

**Excellence Scholarship** – *Colbianco Stiftung* 2022

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

**Scholarship** – *e-fellows.net* 2022

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

**Swiss Study Foundation Fellowship** – *Swiss Study Foundation* 2022

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

**Swiss Mobility Program grant** – *EPF Lausanne* 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* 2019

Awarded for achieving the highest distinction at the French Baccalaureate

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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, 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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1. **Kervyn, X.** (Mar. 2023) Gravitational scattering and covariant phase space methods in gravity  
(Talk, given in the frame of the Cambridge DAMTP Part III Seminars series)
2. **Kervyn, X.** (Dec. 2022) Holography and Twistor methods in  $\text{AdS}_5$   
(Talk, given in the frame of the Cambridge DAMTP Part III Seminars series)
3. **Kervyn, X., Roux, N.** (Jul. 2022) Towards an automatized analysis framework for the upcoming CMS ECAL upgrade, aiming at improved amplitude and time resolution with HL-LHC  
(Bachelor project, *viva voce* examination)
4. **Kervyn, X.** (Dec. 2021) Measure and characterisation of the impact of non-perfect nulls on the detectable planet population by LIFE, based on different stellar and planetary properties  
(Semester project, *viva voce* examination)

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## TEACHING EXPERIENCE

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### Tutor (volunteer), Village Book Builders

- 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:**  $\text{\LaTeX}$ , Mathematica, scientific writing, funding search and application

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## ACADEMIC REFERENCES

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- **Dr. Prahar Mitra** (*Part III essay setter*). Office B0.02, Department of Applied Mathematics & Theoretical Physics, University of Cambridge, Wilberforce Road, Cambridge CB3 0WA, UK.  
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