

Guillaume Payeur

Physics MSc Student at McGill University

Email: guillaume.payeur@mail.mcgill.ca

Web: guilleumepayeur.github.io

About me

I am a Master's student in physics at McGill University, working under the supervision of Robert Brandenberger and Evan McDonough. My research is at the intersection of theoretical cosmology and high energy physics. Previously I've also published research on applications of machine learning to physics. While I'm hardworking and committed to producing as much influential research as possible, I'm also an easy-going, cheerful and playful person.

Degrees

- **Champlain College (CEGEP)**
Pure and Applied Science 2017 - 2019
- **McGill University (BSc)**
Honours Math & Physics 2019 - 2023
– GPA: 3.98/4
- **McGill University (MSc) - Ongoing**
Physics - High Energy Theory 2023 - 2025
– GPA: 4/4

Publications

4. Guillaume Payeur, Evan McDonough, and Robert Brandenberger. Do Observations Prefer Thawing Quintessence?, November 2024. arXiv:2411.13637 [astro-ph, physics:gr-qc, physics:hep-ph, physics:hep-th] <https://arxiv.org/abs/2411.13637>
3. Guillaume Payeur, Evan McDonough, and Robert Brandenberger. Swampland conjectures constraints on dark energy from a highly curved field space. *Physical Review D*, 110(10):106011, November 2024 <https://journals.aps.org/prd/abstract/10.1103/PhysRevD.110.106011>
2. Edward W. Kolb, Andrew J. Long, Evan McDonough, and Guillaume Payeur. Completely dark matter from rapid-turn multifield inflation. *Journal of High Energy Physics*, 2023(2):181, February 2023 [https://link.springer.com/article/10.1007/JHEP02\(2023\)181](https://link.springer.com/article/10.1007/JHEP02(2023)181)
1. Guillaume Payeur, Étienne Artigau, Laurence Perreault Levasseur, and René Doyon. Correlated read noise reduction in infrared arrays using deep learning. *The Astronomical Journal*, 163(6):292, may 2022 <https://iopscience.iop.org/article/10.3847/1538-3881/ac69d2>

Academic Awards & Scholarships

Dr & Mrs Milton Leong Fellowship

Amount: 5000\$

McGill University
Fall 2024 - Winter 2025

FRQNT Master's Training Scholarship

Amount: 40000\$

McGill University
Fall 2023 - Winter 2025

NSERC Canada Graduate Scholarship – Master's program

Amount: 17500\$

McGill University
Fall 2023 - Winter 2024

Lorne Trottier Fellowship

Amount: 5000\$

McGill University
Fall 2023 - Winter 2024

Trottier Space Institute Graduate Fellowship

Amount: 2000\$

McGill University
Fall 2023 - Winter 2025

First Class Honours in Mathematics and Physics

McGill University
Winter 2023

Wing Hing Chang Scholarship in Science

Amount: 800\$

McGill University
Fall 2021 - Winter 2022

NSERC Undergraduate Student Research Award

Amount: 6000\$

University of Victoria
Summer 2021

Dean's Honour List

McGill University
Fall 2020 - Winter 2021

Bourse Hors UdeM

Amount: 4000\$

University of Montreal
Summer 2020

Faculty of Science Scholarship

Amount: 700\$

McGill University
Fall 2020 - Winter 2021

Dean's Honour List

McGill University
Fall 2019 - Winter 2020

Dean's List

Champlain College
Winter 2018

Dean's List

Champlain College
Fall 2018

Public Talks

2. **Readout Noise & Machine Learning**
IREX End-of-Summer Presentations

Montreal
Summer 2020

1. **Completely Dark Matter & the de Sitter Swampland Conjecture**
WITP Summer Symposium

Winnipeg
Summer 2022

Teaching

Course Teaching assistant

Gave 1 course lecture, and 6 tutorials

McGill - PHYS 346 Major Quantum Mechanics
Fall 2024

Course Teaching assistant

Gave 3 tutorials and 1 exam review session

McGill - PHYS 142 Electromagnetism and Optics
Winter 2024

Course Teaching assistant

Gave 1 course lecture and 4 tutorials

McGill - PHYS 251 Honours Classical Mechanics 1
Fall 2023

Events

Astromatic 2022

Classified in second place

Montreal
Summer 2022