

EDUCATION

McGill University , Montréal, Canada <i>PhD Physics</i> Supervisors: Prof. Tami Pereg-Barnea, Prof. Kai Wang	Sep. 2023 –
McGill University , Montréal, Canada <i>MSc Mathematics</i> Supervisor: Prof. Vojkan Jakšić	May 2022 – May 2023
CY Institute for Advanced Studies , Cergy-Pontoise, France <i>Visiting MSc Student at the AGM Laboratory</i> Supervisor: Prof. Armen Shirikyan	May 2022 – Jul. 2022
McGill University , Montréal, Canada <i>BSc Joint Honours in Physics and Mathematics, First Class Honours</i>	Sep. 2019 – May 2022

RESEARCH INTERESTS

- Topological band theory, non-Hermitian systems.
- Quantum photonics, many-body physics, disordered quantum systems.

PUBLICATIONS

Research

1. C. Fortin, K. Wang and T. Pereg-Barnea, *Topological amplification of the bosonic Kitaev chain with nonuniform loss*, Phys. Rev. B **112**, 064208 (2025). arXiv:2412.09744
2. K.E.M. Church and C. Fortin, *Computer-assisted methods for analyzing periodic orbits in vibrating gravitational billiards*, Int. J. Bifurcation Chaos (2021).

Thesis

C. Fortin, *Central Limit Theorem and Large Deviations of the Maximum Likelihood Estimator*. Master's thesis. McGill University (2023).

PRESENTATIONS AND POSTER SESSIONS

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| - APS Global Physics Summit 2025 in Anaheim, United States:
<i>Non-Hermitian topological phase transition of the bosonic Kitaev chain.</i> | Mar. 2025 |
| - CONFETI 2025, INTRIQ in Bromont, Canada:
<i>Non-Hermitian topology in bosonic systems.</i> | Jan. 2025 |
| - ICTP Conference on Advances in Topological Condensed Matter in Trieste, Italy:
<i>Non-Hermitian topological phase transition of the bosonic Kitaev chain.</i> | Nov. 2024 |
| - Institute of Photonic Sciences (ICFO) in the Quantum Optics Theory group in Barcelona, Spain:
<i>Topological amplification in the bosonic Kitaev chain.</i> | Oct. 2024 |
| - Fall 2024 INTRIQ meeting in Bromont, Canada:
<i>Non-Hermitian topological phase transition of the bosonic Kitaev chain.</i> | Oct. 2024 |
| - MaQTech Annual Retreat in Ottawa, Canada:
<i>Non-Hermitian topology of the bosonic Kitaev chain.</i> | Jul. 2024 |
| - PQS2D Annual Retreat in Ottawa, Canada:
<i>Non-Hermitian topology of the bosonic Kitaev chain.</i> | Jul. 2024 |

AWARDS

Department of Physics, McGill University

- Chalk-Rowles fellowship (\$11,120)
- Emily Ross Crawford scholarship (\$1,000)

Sep. 2025 – Aug. 2026

Sep. 2020 – May 2021

SCIENTIFIC ARTICLE REVIEWING

Journals: Physical Review Letters, Physical Review A.

UNDERGRADUATE RESEARCH EXPERIENCE

McGill University, Montréal, Canada

Supervisor: Prof. Vojkan Jakšić

- Quantum information theory, parameter estimation of classical Markov chains.

May 2021 – Aug. 2021

McGill University, Montréal, Canada

Supervisor: Prof. Daryl Haggard

- Data analysis of the supermassive black hole Sgr. A* using the Bayesian Blocks algorithm.

Sep. 2020 – Dec. 2020

McGill University, Montréal, Canada

Supervisor: Prof. Jean-Philippe Lessard

- Computer-assisted methods for dynamical systems.

May 2020 – Aug. 2020

RELEVANT EXPERIENCE

Teaching Assistantships (McGill University)

Preparation of tutorial sessions. Substituting lectures. Holding office hours. Marking of assignments and examinations.

List of courses:

- PHYS 230 – Dynamics of Simple Systems
- PHYS 457 – Honours Quantum Mechanics II
- PHYS 551 – Quantum Theory
- PHYS 457 – Honours Quantum Mechanics II
- PHYS 352 – Honours Electromagnetic Waves
- MATH 141 – Calculus 2
- MATH 455 – Honours Analysis 4
- MATH 454 – Honours Analysis 3

Sep. 2025 – Dec. 2025

Jan. 2025 – May 2025

Sep. 2024 – Dec. 2024

Jan. 2024 – May 2024

Sep. 2023 – Dec. 2023

Jan. 2023 – May 2023

Jan. 2023 – May 2023

Sep. 2022 – Dec. 2022

Teaching Assistantships (CY Institute for Advanced Studies)

Preparation of weekly lectures. Marking assignments. List of courses:

- Information-theoretic notions of entropy
- Complex Analysis
- Finite State Markov Chains

May 2022 – Jul. 2022

May 2022 – Jul. 2022

May 2022 – Jul. 2022

SciLearn Peer Collaboration Teaching Assistant (McGill University)

- Providing guidance to undergraduate students in mathematics.

Jan. 2023 – May 2023

Volunteer for the Physics & TSI Outreach group (McGill University)

- Helping run outreach activities for the general public and prospective graduate students.

Sep. 2023 –

PROGRAMMING

Languages: Mathematica, Python, MATLAB, Bash, LaTeX.

LANGUAGES

Fluent: French, English.

Intermediate: Spanish, German.

Beginner: Serbo-Croatian.