# **BORIS ZUPANCIC**

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**EDUCATION** 

### McGill University

Montréal, QC

Ph.D. in Mathematics

2024 - 2028 (expected)

• Cumulative GPA: 4.00/4.00

Queen's University

Kingston, ON

M.Sc. in Mathematics

2023 - 2024

• Cumulative GPA: 4.12/4.30

Queen's University

Kingston, ON

B.Sc. Honours in Mathematical Physics

2019 - 2023

• Cumulative GPA: 4.14/4.30

Research Experience

## Doctoral Research Thesis | McGill University

2024.09 - Present

In Poisson Geometry, Singularity Theory, Mathematical Physics.

- Topic/Title: Resolution of Singularities in Poisson Geometry
- Advisor: Prof. Brent Pym

#### Master's Research Project | Queen's University

2023.09 - 2024.08

In Riemannian and Hyperbolic Geometry, Dynamics.

- Topic/Title: Marked Length Spectrum Rigidity of Surfaces
- Advisor: Prof. Thomas Barthelmé

#### Bachelor's Research Thesis | Queen's University

2022.05 - 2023.08

In Computational Astrophysics, Galactic Dynamics.

- Topic/Title: Fuzzy Dark Matter Dynamics and the Quasi-Particle Hypothesis
- Advisor: Prof. Larry Widrow

## Teaching Experience

Graduate Teaching Assistant | McGill and Queen's Universities

2023.09 - Present

Teaching tutorials and grading assignments/exams.

- McGill: Advanced Calculus, Linear Algebra and Geometry, Differential Calculus.
- Queen's: Ordinary Differential Equations, Calculus, Advanced Calculus.

#### John Ursell Tutor | Queen's University

2022.09 - 2023.04

Undergraduate teaching assistantship.

• Weekly tutoring sessions at the Math Help Center, in Calculus and Linear algebra.

Research and Outreach Fellow | Arthur B. McDonald Institute

2022.05 - 2022.08

Research project and outreach at a science summer camp.

- Early start on undergraduate research thesis.
- Worked in a team of 6 Fellows to collaborate on creating and structuring the Summer of Science camp.
- Prepared and presented educational content in mathematics and physics for a small cohort of advanced junior and senior high-school students.

#### **PUBLICATIONS**

- 1. Boris Zupancic and Lawrence M Widrow. "Fuzzy dark matter dynamics and the quasi-particle hypothesis". In: *Monthly Notices of the Royal Astronomical Society* 527.3 (Nov. 2023), pp. 6189–6197. ISSN: 0035-8711. DOI: 10.1093/mnras/stad3620. eprint: https://academic.oup.com/mnras/article-pdf/527/3/6189/54022942/stad3620.pdf. URL: https://doi.org/10.1093/mnras/stad3620
- 2. Boris Zupancic et al. "A Hydrodynamic Quantum Analogue Walking Droplets". In: Journal of Undergraduate Engineering Physics and Physics Experiments at Queen's (Vol 3. (2022)). URL: https://ojs.library.queensu.ca/index.php/JUEPPEQ/article/view/15686

Awards	<ul> <li>Richard H. Tomlinson Doctoral Fellowship, McGill University</li> </ul>	2024 - 2027
AND	• N. and G. Miller Graduate Fellowship, Queen's University	2023
Honors	• Dean's Honour List, Queen's University	2020 - 2023
	• Queen's University Excellence Scholarship, Queen's University	2019

SKILLS Languages: English, French, Serbian.

Programming and Scripting: Python, C, Julia, Bash.