

Jerome Quintin (he/him) — Curriculum Vitæ

Email: jquintin@uwaterloo.ca

Website: <https://jerome-quintin.github.io/>

Citizenship: Canadian

Languages: French, English

EMPLOYMENT	Perimeter Institute for Theoretical Physics (PI) , Waterloo (ON), Canada	
	Associate Postdoctoral Researcher	Dec 2022-present
	University of Waterloo (UWaterloo) , Waterloo (ON), Canada	
	‘Prestigious Postdoctoral Fellowship’, Dept. of Applied Math	Dec 2022-present
	Associate Postdoc, Waterloo Centre for Astrophysics (WCA)	Dec 2022-present
	Joint postdoc with Fields (see below)	July 2022-Nov 2022
	Fields Institute, University of Toronto , Toronto (ON), Canada	
	Fields Postdoctoral Fellow, jointly affiliated with UWaterloo	July 2022-Nov 2022
	Max Planck Institute for Gravitational Physics (Albert Einstein Institute) , Potsdam, Germany (AEI-Potsdam)	
	Postdoctoral Researcher	Sep 2019-Aug 2022
EDUCATION	Ph.D. and M.Sc. in Physics, McGill U.	Sep 2013-Jun 2019
	Thesis Supervisor: Robert Brandenberger	
	GPA: 4.0/4.0	
	B.Sc. in Physics and Mathematics, Bishop’s U.	Sep 2010-Apr 2013
	Research Advisor: Lorne Nelson	
	GPA: 95.74/100	
	<i>Recipient of the Governor General’s Silver Medal (student graduating with the highest grade point average in the university at the undergraduate level)</i>	
RESEARCH EXPERIENCE	Fields/UWaterloo/Perimeter , independent postdoctoral research	2022-
	AEI-Potsdam , postdoctoral research with Jean-Luc Lehnert	2019-2022
	McGill , doctoral research with Robert Brandenberger	2015-19
	ETH-ITS Zurich , Visiting Graduate Research Student	Oct-Nov 2015
	McGill , M.Sc. Student with Robert Brandenberger & Yi-Fu Cai	2013-15
	Bishop’s , Honors Student with Lorne Nelson & Saul Rappaport (MIT)	2011-13
	Mont-Mégantic Observatory , Visiting Scientist	Aug 2011-12-13, May 2012
	MIT , Visiting Undergraduate Research Student	May 2011
SELECTED HONORS AND AWARDS	UWaterloo Faculty of Mathematics <i>Prestigious Postdoctoral Fellowship</i>	2022-
	Fields Postdoctoral Fellowship, Fields Institute (U. of Toronto)	2022
	AARMS Postdoctoral Fellowship, UNB (declined)	
	NSERC Postdoctoral Fellowship	2019-21
	FRQNT Postdoctoral Research Scholarship	2019-21
	Kavli IPMU Postdoctoral Fellowship, Tokyo (declined)	
	Nordita Postdoctoral Fellowship, Stockholm (declined)	
	Vanier Canada Graduate Scholarship , NSERC	2016-19
	Reinhardt C. Fellowship, McGill	2017
	Walter C. Sumner Memorial Fellowship, McGill	2015-17
	NSERC Alexander Graham Bell Graduate Scholarship - CGS D (declined)	
	FRQNT Doctoral Research Scholarship	2015-16
	FRQNT Masters Research Scholarship	2014-15
	NSERC Alexander Graham Bell Graduate Scholarship - CGS M	2013-14
	Lorne Trottier Accelerator Award, McGill	2013
	NSERC Undergraduate Student Research Award (USRA, 3 times)	2011-13
	Captain Melville Greenshields Memorial Scholarship, Bishop’s	2011-12

PUBLICATIONS

22. C. Jonas, J. L. Lehnert and **J. Quintin**, *Uses of complex metrics in cosmology*, [JHEP **08**, 284 \(2022\)](#), [arXiv:2205.15332 \[hep-th\]](#)
21. C. Ganguly and **J. Quintin**, *Microphysical manifestations of viscosity and consequences for anisotropies in the very early universe*, [PRD **105**, 023532](#), [arXiv:2109.11701 \[gr-qc\]](#)
20. **J. Quintin**, H. Bernardo and G. Franzmann, *Cosmology at the top of the α' tower*, [JHEP **07**, 149 \(2021\)](#), [arXiv:2105.01083 \[hep-th\]](#)
19. C. Jonas, J.-L. Lehnert and **J. Quintin**, *Cosmological consequences of a principle of finite amplitudes*, [PRD **103**, 103525](#), [arXiv:2102.05550 \[hep-th\]](#)
18. J.-L. Lehnert and **J. Quintin**, *Quantum circuit complexity of primordial perturbations*, [PRD **103**, 063527](#), [arXiv:2012.04911 \[hep-th\]](#)
17. Y. Sakakihara, D. Yoshida, K. Takahashi and **J. Quintin**, *Theories with limited extrinsic curvature and a nonsingular anisotropic universe*, [PRD **102**, 084004](#), [arXiv:2005.10844 \[gr-qc\]](#)
16. **J. Quintin** and D. Yoshida, *Cuscuton gravity as a classically stable limiting curvature theory*, [JCAP **2002**, 016](#), [arXiv:1911.06040 \[gr-qc\]](#)
15. **J. Quintin**, R. H. Brandenberger, M. Gasperini and G. Veneziano, *Stringy black-hole gas in α' -corrected dilaton gravity*, [PRD **98**, 103519](#), [arXiv:1809.01658 \[hep-th\]](#)
14. D. Yoshida and **J. Quintin**, *Maximal extensions and singularities in inflationary spacetimes*, [CQG **35**, 155019](#), [arXiv:1803.07085 \[gr-qc\]](#)
13. C. Lin, **J. Quintin** and R. H. Brandenberger, *Massive gravity and the suppression of anisotropies and gravitational waves in a matter-dominated contracting universe*, [JCAP **1801**, 011](#), [arXiv:1711.10472 \[hep-th\]](#)
12. L. Santos, W. Zhao, E. G. M. Ferreira and **J. Quintin**, *Constraining interacting dark energy with CMB and BAO future surveys*, [PRD **96**, 103529](#), [arXiv:1707.06827 \[astro-ph.CO\]](#)
11. D. Yoshida, **J. Quintin**, M. Yamaguchi and R. H. Brandenberger, *Cosmological perturbations and stability of nonsingular cosmologies with limiting curvature*, [PRD **96**, 043502](#), [arXiv:1704.04184 \[hep-th\]](#)
10. Y. B. Li, **J. Quintin**, D. G. Wang and Y. F. Cai, *Matter bounce cosmology with a generalized single field: non-Gaussianity and an extended no-go theorem*, [JCAP **1703**, 031](#), [arXiv:1612.02036 \[hep-th\]](#)
9. B. Kalomeni, L. Nelson, S. Rappaport, M. Molnar, **J. Quintin** and K. Yakut, *Evolution of cataclysmic variables and related binaries containing a white dwarf*, [ApJ **833**, 83](#), [arXiv:1610.03051 \[astro-ph.SR\]](#)
8. **J. Quintin** and R. H. Brandenberger, *Black hole formation in a contracting universe*, [JCAP **1611**, 029](#), [arXiv:1609.02556 \[astro-ph.CO\]](#)
7. **J. Quintin**, Z. Sherkatghanad, Y. F. Cai and R. H. Brandenberger, *Evolution of cosmological perturbations and the production of non-Gaussianities through a nonsingular bounce: Indications for a no-go theorem in single field matter bounce cosmologies*, [PRD **92**, 063532](#), [arXiv:1508.04141 \[hep-th\]](#)
6. Y. F. Cai, E. G. M. Ferreira, B. Hu and **J. Quintin**, *Searching for features of a string-inspired inflationary model with cosmological observations*, [PRD Rapid Communications **92**, 121303](#), [arXiv:1507.05619 \[astro-ph.CO\]](#)
5. S. F. Bramberger, R. H. Brandenberger, P. Jreidini and **J. Quintin**, *Cosmic string loops as the seeds of super-massive black holes*, [JCAP **1506**, 007](#), [arXiv:1503.02317 \[astro-ph.CO\]](#)
4. Y. F. Cai, F. Chen, E. G. M. Ferreira and **J. Quintin**, *New model of axion monodromy inflation and its cosmological implications*, [JCAP **1606**, 027](#), [arXiv:1412.4298 \[hep-th\]](#)

3. E. G. M. Ferreira, **J. Quintin**, A. A. Costa, E. Abdalla and B. Wang, *Evidence for interacting dark energy from BOSS*, [PRD **95**, 043520](#), [arXiv:1412.2777 \[astro-ph.CO\]](#)
2. **J. Quintin**, Y. F. Cai and R. H. Brandenberger, *Matter creation in a nonsingular bouncing cosmology*, [PRD **90**, 063507](#), [arXiv:1406.6049 \[gr-qc\]](#)
1. Y. F. Cai, **J. Quintin**, E. N. Saridakis and E. Wilson-Ewing, *Nonsingular bouncing cosmologies in light of BICEP2*, [JCAP **1407**, 033](#), [arXiv:1404.4364 \[astro-ph.CO\]](#)

INVITED TALKS
(long-term visits
of $\gtrsim 2$ weeks
denoted by **)

32. ****McGill U.** Theoretical High Energy Journal Club Dec 2021
31. **Perimeter Institute** Cosmology Seminar Nov 2021
30. **U. of New Brunswick** Gravity Group Meeting Nov 2021
29. **Lisbon U.** Institute of Astrophysics and Space Science Seminar Nov 2021
28. **Copernicus Webinar Series** Oct 2021
27. **Jagiellonian U.** Theoretical Cosmology Group Meeting Jul 2021
26. **Canadian Association of Physicist (CAP) Congress** Jun 2021
25. **U. of Science and Technology of China** Particle Cosmology Webinar Feb 2021
24. **ICTS Workshop - Physics of the Early Universe** Sep 2021
23. **Quantum Aspects of Space-Time and Matter (QASTM) Online Talk** Apr 2020
22. **U. of Cambridge** DAMTP Cosmology Journal Club Nov 2019
21. **Autumn Workshop on Gravity and Cosmology at Warsaw U.** Nov 2019
20. **Dartmouth College** Cosmology Seminar Apr 2019
19. **Ohio State U.** High Energy Physics Seminar Oct 2018
18. ****Harvard-ITC Luncheon** Sep 2018
17. ****Harvard-ITC** Prof. Avi Loeb Group Meeting Sep 2018
16. **Princeton U.** New Directions in Cosmology and Gravitational Theory Talk Jan 2018
15. **Institut d'Astrophysique de Paris (IAP)** GRECO Seminar Sep 2017
14. **Imperial College London** 3-PAC Seminar May 2017
13. **U. of Cambridge** DAMTP Cosmology Journal Club May 2017
12. **King's College London** Theoretical Particle Physics & Cosmology Seminar May 2017
11. **Queen Mary U. of London** Cosmology and Relativity Seminar May 2017
10. **Portsmouth U.** Institute of Cosmology and Gravitation Seminar May 2017
9. **Tufts U.** Institute of Cosmology Seminar Apr 2017
8. **U. of Pennsylvania** Astrophysics and Cosmology Group Talk Apr 2017
7. ****U. of Tokyo** Research Center for the Early Universe Seminar Jun 2016
6. ****U. of Science and Technology of China** Astronomy Colloquium Jun 2016
5. **Fudan U.** Cosmology Seminar Jun 2016
4. **Tokyo Institute of Technology** Cosmology Seminar Jun 2016
3. **U. of Geneva** Cosmology and Astroparticle Physics Journal Club Oct 2015
2. ****ENS-Lyon** Centre de Recherche Astrophysique de Lyon Seminar Oct 2015
1. **Bishop's U.** Physics Seminar Sep 2015

CONTRIBUTED TALKS

11. [Workshop on Mathematical Relativity, Scalar Curvature and Synthetic Lorentzian Geometry as part of the Thematic Program on Nonsmooth Riemannian and Lorentzian Geometry at the Fields Institute](#) Oct 2022
10. [Atlantic General Relativity Conference](#) May 2022
9. [YITP \(Kyoto U.\) Quantum Cosmology Workshop](#) Nov 2021
8. [Alternative Gravities and Fundamental Cosmology Conference](#) Sep 2021
7. [Northeast Cosmology Workshop at McGill U.](#) Mar 2018
6. [COSMO-17 at Paris U.](#) Sep 2017
5. [Beyond \$\Lambda\$ CDM Conference](#) Jan 2015
4. [Centre for Research in Astrophysics of Qubec \(CRAQ\) Meeting](#) May 2013
3. [American Astronomical Society \(AAS\) Meeting #221](#) Jan 2013
2. [Canadian Undergraduate Physics Conference \(CUPC\)](#) Oct 2012
1. [Centre for Research in Astrophysics of Qubec \(CRAQ\) Meeting](#) May 2012

LOCAL TALKS (number of presentations given inside parenthesis)

- 2022-present: CITA (1), Fields (1; [link](#)), UWaterloo (2)
- 2019-2022: AEI-Potsdam (7)
- 2013-2019: McGill U. [Centre for High Energy Physics](#) (14), [McGill Space Institute](#) (2)
- 2013: Bishop's U. Department of Physics (3)

SELECTED WORKSHOPS, SCHOOLS AND ADDITIONAL CONFERENCES ATTENDED

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| 10th Central European Relativity Seminar @ AEI | Feb 2020 |
| Advanced Winter School on Theoretical Cosmology @ Nordita | Jan 2020 |
| Workshop on Geometry and Duality @ AEI | Dec 2019 |
| Symposium on History for Physics: Quantum Gravity @ AEI | Nov 2019 |
| XI International Symposium: Quantum Theory and Symmetries @ UdeM | Jul 2019 |
| XIX International Congress on Mathematical Physics @ Montréal | Jul 2018 |
| Northeast Cosmology Workshop @ McGill | Mar 2018 |
| Gravity in the Early Universe @ Princeton-PCTS | Jan 2018 |
| McGill-Dartmouth Cosmology Day @ McGill | May 2017 |
| 100 Years, General Theory of Relativity, Einstein Symposium @ ETH Zurich | Nov 2015 |
| Workshop on AdS/CFT and the Resolution of Cosmological Singularities @ CRM | Jul 2015 |
| Summer School on Cosmology @ ICTP | Aug 2014 |
| Theory Canada 8 Conference @ Bishop's | May 2013 |
| AAS Meeting @ Boston | May 2011 |

OUTREACH TALKS

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|--|----------|
| Public talk (in French), “Astronomie en Fût” (Astronomy on Tap), <i>L'univers a-t-il eu un commencement? (Did the universe have a beginning?)</i> @ Montréal | Apr 2017 |
| Speaker and guide for tours at the Bishop's University Observatory | 2011-13 |

PRESS COVERAGE

- [Semeando buracos negros supermassivos \(Sowing supermassive black holes\)](#) by Rua Josephine in Cientistas Feministas (in Portuguese)
- [Evolution of cataclysmic variables and related binaries containing accreting white dwarfs](#) in Phys.org
- [The ‘Dark’ Universe May Be Full of Strange Interactions](#) by Charles Q. Choi in NOVA

PROFESSIONAL ACTIVITIES AND COMMUNITY

- Referee for [PRL](#), [PRD](#), [JCAP](#), [PLB](#), [CQG](#), [EPJ C](#), [NPB](#), [MPLA](#), [Universe](#), [LHEP](#), [Physica Scripta](#), [Ap&SS](#), and [INJP](#)
- Writing reviews for the [American Mathematical Society's Mathematical Reviews Database](#) Sep 2021-present
- Member of the SOC for the [Nordita Winter School on Theoretical Cosmology](#) Jan 2020
- Reviewed a grant proposal for the [National Science Center](#) of Poland Dec 2018
- [McGill HEP-th Journal Club](#) organizer Sep 2017-Dec 18
- Helped with the organization of the [Northeast Cosmology Workshop](#) Mar 2018
- Helped with the organization of the [McGill-Dartmouth Cosmology Day](#) May 2017
- Helped with the organization of the [Theory Canada 8 Conference](#) May 2013

SUPERVISION AND TEACHING

UWaterloo/PI

- Mentoring MMath student [Elly Moghtaderi](#) Sep 2022-present
- Mentoring PhD student [Amir Dehghani](#) Sep 2021-present

AEI-Potsdam

- Mentoring PhD student [Caroline Jonas](#) Oct 2019-Jun 2022

McGill U.

- Substitute Lecturer Sep 2017
Very Early Universe
- Mentor for the [MGAPS](#) mentorship program Sep-Dec 2016
- Teaching Assistant Sep 2013-Apr 2017
General Relativity and Cosmology, Modern Physics and Relativity, Electromagnetic Waves, Introductory Physics – Mechanics, Honours Classical Mechanics 2, Honours Classical Mechanics 1, Topics in Classical Mechanics, Modern Physics and Relativity

Bishop's U.

- Tutor at the Bishop's University Physics Help Centre Sep 2012-Apr 13
- Teaching Assistant Jan 2012-Apr 2013
Introduction to Mechanics, Differential Equations, Thermal and Fluid Physics

Private mathematics and physics tutor (high school and college level)

2009-11, 2015

PROGRAMMING

- Languages I have had experience with: [Python](#) (including [NumPy](#), [SciPy](#), [Matplotlib](#), etc.), [Fortran](#), [C/C++](#), [Java](#), [UNIX shell scripts](#), [Perl](#), [Mathematica](#), [Maple](#)
- Some codes I have run and/or modified over the years: [CAMB](#), [MultiModeCode](#), [MathGR](#), [xAct](#), [PyTransport](#), [CosmicPy](#), [Pyflation](#), [MESA](#)