

Jerome Quintin (he/him) — Curriculum Vitæ

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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

23. G. Geshnizjani, E. Ling and **J. Quintin**, *On the initial singularity and extendibility of flat quasi-de Sitter spacetimes*, [[arXiv:2305.01676](#) [gr-qc]]
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 **)

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| 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/PI (4)
- 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

- Review Editor for [Frontiers in Astronomy and Space Sciences](#) and [Frontiers in Physics, Cosmology section](#) Jan 2023-present
- Referee for [PRL](#), [PRD](#), [JCAP](#), [PLB](#), [CQG](#), [EPJ C](#), [NPB](#), [MPLA](#), [IJMPA](#), [Universe](#), [Symmetry](#), [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 PhD student [Brayden Hull](#) Jan 2023-present
- 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](#)