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## Jerome Quintin – CV

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CONTACT	<a href="mailto:jerome.quintin@aei.mpg.de">jerome.quintin@aei.mpg.de</a>	
EMPLOYMENT	<b>Max Planck Institute for Gravitational Physics (Albert Einstein Institute), Potsdam, Germany</b> Postdoctoral Researcher	Sep 2019-present
EDUCATION	<b>Ph.D. and M.Sc. in Physics, McGill U.</b> Thesis Supervisor: <a href="#">Robert Brandenberger</a> GPA: 4.0/4.0	Sep 2013-Jun 2019
	<b>B.Sc. in Physics and Mathematics, Bishop's U.</b> Research Advisor: <a href="#">Lorne Nelson</a> 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>	Sep 2010-Apr 2013
RESEARCH EXPERIENCE	<b>AEI Potsdam</b> , Postdoctoral Researcher with <a href="#">Jean-Luc Lehnert</a> <b>McGill</b> , Ph.D. Student with Robert Brandenberger <b>ETH-ITS Zurich</b> , Visiting Graduate Research Student <b>McGill</b> , M.Sc. Student with Robert Brandenberger & <a href="#">Yi-Fu Cai</a> <b>Bishop's</b> , Honors Student with Lorne Nelson & <a href="#">Saul Rappaport (MIT)</a> <b>Mont-Megantic Observatory</b> , Visiting Scientist <b>MIT</b> , Visiting Undergraduate Research Student	2019-present 2015-19 Oct-Nov 2015 2013-15 2011-13 Aug 2011-12-13, May 2012 May 2011
HONORS AND AWARDS	<a href="#">NSERC</a> Postdoctoral Fellowship <a href="#">FRQNT</a> Postdoctoral Research Scholarship Kavli IPMU Postdoctoral Fellowship, Tokyo (declined) Nordita Postdoctoral Fellowship, Stockholm (declined) <a href="#">Vanier Canada Graduate Scholarship</a> , NSERC Reinhardt C. Fellowship, McGill Walter C. Sumner Memorial Fellowship, McGill NSERC Alexander Graham Bell Graduate Scholarship - CGS D (declined) FRQNT Doctoral Research Scholarship FRQNT Masters Research Scholarship NSERC Alexander Graham Bell Graduate Scholarship - CGS M Lorne Trottier Accelerator Award, McGill NSERC Undergraduate Student Research Award (USRA, 3 times) Captain Melville Greenshields Memorial Scholarship, Bishop's Richard Tomlinson Scholarship, Bishop's	2019-21 2019-21   2016-19 2017 2015-17  2015-16 2014-15 2013-14 2013 2011-13 2011-12 2010-11
PUBLICATIONS	<ol style="list-style-type: none"><li>21. C. Ganguly and <b>J. Quintin</b>, <i>Microphysical manifestations of viscosity and consequences for anisotropies in the very early universe</i>, <a href="#">arXiv:2109.11701 [gr-qc]</a></li><li>20. <b>J. Quintin</b>, H. Bernardo and G. Franzmann, <i>Cosmology at the top of the <math>\alpha'</math> tower</i>, <a href="#">JHEP <b>07</b>, 149 (2021)</a>, <a href="#">arXiv:2105.01083 [hep-th]</a></li><li>19. C. Jonas, J.-L. Lehnert and <b>J. Quintin</b>, <i>Cosmological consequences of a principle of finite amplitudes</i>, <a href="#">PRD <b>103</b>, 103525</a>, <a href="#">arXiv:2102.05550 [hep-th]</a></li><li>18. J.-L. Lehnert and <b>J. Quintin</b>, <i>Quantum circuit complexity of primordial perturbations</i>, <a href="#">PRD <b>103</b>, 063527</a>, <a href="#">arXiv:2012.04911 [hep-th]</a></li><li>17. Y. Sakakihara, D. Yoshida, K. Takahashi and <b>J. Quintin</b>, <i>Theories with limited extrinsic curvature and a nonsingular anisotropic universe</i>, <a href="#">PRD <b>102</b>, 084004</a>, <a href="#">arXiv:2005.10844 [gr-qc]</a></li></ol>	

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  $\alpha'$ -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  
SEMINARS AND  
CONFERENCE  
TALKS

2021

- *Cosmological Consequences of a Principle of Finite Amplitudes*  
[AltFunCosmo'21](#), Jagiellonian U.
- *Discriminating Between Theories of the Very Early Universe*  
[CAP Congress](#)

- *Quantum Circuit Complexity of Primordial Perturbations*  
[USTC](#)

2020

- *Limiting Curvature in the Very Early Universe*  
[ICTS Workshop - Physics of the Early Universe](#), Cargèse (canceled due to the pandemic)
- *Bouncing Cosmology: the Current State and the Road Ahead*  
[QASTM Online Talk](#)

2019

- *Cuscuton Gravity as a Classically Stable Limiting Curvature Theory*  
[Cambridge-DAMTP](#), [Workshop on Gravity and Cosmology @ Warsaw U.](#), [Dartmouth](#)

2018

- *The Fate of a Contracting Universe and the Evolution of Stringy Black Holes*  
[OSU](#)
- *Black Hole Formation in a Contracting Universe*  
[Harvard-ITC](#)
- *Challenges for the Matter Bounce Scenario*  
[Harvard-ITC](#), [Princeton-PCTS](#), [Northeast Cosmology Workshop @ McGill](#)

2017

- *Stability of Nonsingular Cosmologies with Limiting Curvature*  
[Imperial](#), [COSMO @ Paris VII](#)
- *The Fate of a Contracting Universe: Black Holes Before the Big Bang*  
[Cambridge-DAMTP](#), [UPenn](#), [IAP](#), [KCL](#), [QMUL](#), [Tufts](#), [Portsmouth-ICG](#)

2016

- *No-Go Theorem in Nonsingular Bouncing Cosmology*  
[Tokyo U.](#), [Tokyo Tech](#), [Fudan](#)
- *Conspiracy in the Dark: A New Twist on Dark Matter and Dark Energy*  
[USTC](#)

2015

- *No-Go Theorem in Nonsingular Bouncing Cosmology*  
[Geneva](#)
- *The Successes and Problems of Inflationary Cosmology and its Alternatives*  
[ENS-Lyon](#)
- *Connecting Theories of the Very Early Universe with Cosmological Observations*  
[Bishop's](#)
- *Matter Creation in a Nonsingular Bouncing Cosmology*  
[Beyond  \$\Lambda\$ CDM conference @ Oslo](#)

2013

- *X-Ray Binary Evolution: The Effects of Self-Induced Irradiation*  
[AAS Meeting @ Long Beach](#), [CRAQ Meeting](#), [CUPC @ Vancouver](#)

AEI Potsdam, Theoretical Cosmology Group Meeting/Journal Club (JC)

- On the role of conformal symmetry in the very early universe
- On classical, semi-classical and quantum versions of the null energy condition

**INTERNAL  
SEMINARS**

- Isotropisation mechanisms in bouncing cosmology
- What are primordial standard clocks?
- Cuscuton gravity as a classically stable limiting curvature theory

#### McGill

- Cosmological scalar-tensor theories after GW170817, [MSI Cosmo-ph JC](#)
- The connection between mimetic gravity, limiting curvature, and the cuscuton, HEP-th JC
- The string/black hole correspondence, HEP-th Graduate Seminar
- Nonsingular spacetimes with limiting curvature, HEP-th JC
- Hamiltonian analysis of gauge systems: gravity as an example, HEP-th Graduate Seminar
- The fate of a contracting universe and the state of matter at high density, HEP-th JC
- The search for a theory of the very early universe, MSI Lunch Talk
- [Stability of nonsingular cosmologies](#), HEP-th Graduate Seminar
- Thermal fluctuations in the very early universe, HEP-th Graduate Seminar
- Interacting dark matter and dark energy, how crazy is that?!, HEP-th JC
- Backreaction in cosmology, part I: averaging Einsteins equations, HEP-th Graduate Seminar
- Towards a no-go theorem in bouncing cosmology, HEP-th JC
- Black hole superradiance, Lecture as part of Advanced GR and QFT in curved spacetime (PHYS 731)
- Cosmological perturbations in bouncing cosmology, HEP-th Graduate Seminar
- More on manifolds, Lie groups and Lie algebras, Lecture as part of Geometry/Topology (MATH 691)
- Gravitational particle production: application to bouncing cosmology, HEP-th Graduate Seminar

#### Bishop's

- X-ray Binary Evolution: The Effects of Self-Induced Irradiation, Physics Seminar
- Amazing Astronomy using the New BU Telescope, Physics Seminar

#### WORKSHOPS, SCHOOLS AND ADDITIONAL CONFERENCES ATTENDED

<a href="#">Cosmological Frontiers in Fundamental Physics, Online Conference</a>	May 2021
<a href="#">Gravitational-Wave Primordial Cosmology, Online Workshop</a>	May 2021
<a href="#">The Quantum &amp; The Gravity, Online Workshop</a>	April 2021
<a href="#">Current Challenges in Gravitational Physics, Online Workshop</a>	April 2021
<a href="#">Quantum Gravity, Higher Derivatives and Nonlocality, Online Workshop</a>	Mar 2021
<a href="#">10th Central European Relativity Seminar @ AEI</a>	Feb 2020
<a href="#">Advanced Winter School on Theoretical Cosmology @ Nordita</a>	Jan 2020
<a href="#">Workshop on Geometry and Duality @ AEI</a>	Dec 2019
<a href="#">Symposium on History for Physics: Quantum Gravity @ AEI</a>	Nov 2019
<a href="#">XI International Symposium: Quantum Theory and Symmetries @ UdeM</a>	Jul 2019
<a href="#">XIX International Congress on Mathematical Physics @ Montréal</a>	Jul 2018
<a href="#">Northeast Cosmology Workshop @ McGill</a>	Mar 2018
<a href="#">Gravity in the Early Universe @ Princeton-PCTS</a>	Jan 2018
<a href="#">McGill-Dartmouth Cosmology Day @ McGill</a>	May 2017
<a href="#">100 Years, General Theory of Relativity, Einstein Symposium @ ETH Zurich</a>	Nov 2015
<a href="#">Workshop on AdS/CFT and the Resolution of Cosmological Singularities @ CRM</a>	Jul 2015
<a href="#">Summer School on Cosmology @ ICTP</a>	Aug 2014

	Theory Canada 8 Conference @ Bishop's	May 2013
	AAS Meeting @ Boston	May 2011
<b>OUTREACH TALKS</b>	Public talk (in French), "Astronomie en Fût" ( <a href="#">Astronomy on Tap</a> ), <i>L'univers a-t-il eu un commencement?</i> ( <i>Did the universe have a beginning?</i> ) @ Montréal	Apr 2017
	Speaker and guide for tours at the <a href="#">Bishop's University Observatory</a>	2011-13
<b>PRESS COVERAGE</b>	<i>Semeando buracos negros supermassivos (Sowing supermassive black holes)</i> by Rua Josephine in Cientistas Feministas (in Portuguese)	
	<i>Evolution of cataclysmic variables and related binaries containing accreting white dwarfs</i> in Phys.org	
	<i>The 'Dark' Universe May Be Full of Strange Interactions</i> by Charles Q. Choi in NOVA	
<b>PROFESSIONAL ACTIVITIES AND COMMUNITY</b>	Referee for PRD, PRL, JCAP, PLB, CQG, EPJ C, MPLA, LHEP, Physica Scripta, and Ap&SS	
	Member of the SOC for the <a href="#">Nordita Winter School on Theoretical Cosmology</a>	Jan 2020
	Reviewed a grant proposal for the National Science Center of Poland	Dec 2018
	<a href="#">McGill HEP-th Journal Club</a> organizer	Sep 2017-Dec 18
	Helped with the organization of the <a href="#">Northeast Cosmology Workshop @ McGill</a>	Mar 2018
	Helped with the organization of the <a href="#">McGill-Dartmouth Cosmology Day @ McGill</a>	May 2017
	Helped with the organization of the <a href="#">Theory Canada 8 Conference @ Bishop's</a>	May 2013
<b>SUPERVISION AND TEACHING</b>	AEI	
	• Co-supervised PhD student Caroline Jonas	Oct 2019-Feb 2021
	McGill	
	• Substitute Lecturer	Sep 2017
	<i>Very Early Universe</i> (Instructor: Robert Brandenberger)	
	• Teaching Assistant	Sep 2013-Apr 2017
	<i>General Relativity and Cosmology</i> (Instructor: Robert Brandenberger), <i>Modern Physics and Relativity</i> (Alex Maloney), <i>Electromagnetic Waves</i> (James Cline), <i>Introductory Physics – Mechanics</i> (Kenneth Ragan), <i>Honours Classical Mechanics 2</i> (Guillaume Gervais), <i>Honours Classical Mechanics 1</i> (Robert Brandenberger), <i>Topics in Classical Mechanics</i> (Gilbert Holder), <i>Modern Physics and Relativity</i> (Lilian Childress)	
	Bishop's U.	
	• Tutor at the Bishop's University Physics Help Centre	Sep 2012-Apr 13
	• Teaching Assistant	Jan 2012-Apr 2013
	<i>Introduction to Mechanics</i> (Instructor: Ariel Edery), <i>Differential Equations</i> (Brad Willms), <i>Thermal and Fluid Physics</i> (Sylvain Turcotte)	
	Private mathematics and physics tutor (high school and college level)	2009-11, 2015