

José Manuel Barrientos Ortiz

Curriculum Vitae

PERSONAL DETAILS

Birth March 8, 1989. La Serena, Chile
Address Žitná 25, 115 67 Praha 1, Czech Republic
Phone +420 773 173 542
Mail barrientos@math.cas.cz

CURRENT POSITION

Postdoctoral Researcher 2021
Institute of Mathematics of the Czech Academy of Sciences, Prague, Czech Republic hosted by Professor Vojtěch Pravda

EDUCATION

Doctor of Physical Sciences 2016-2020
Universidad de Concepción, Facultad de Ciencias Físicas y Matemáticas, Departamento de Física
Thesis: *Torsional Horndeski's theory and gravitational waves*
Advisor: Dr. Fernando Izaurieta

Master of Sciences in Physics 2012-2015
Universidad de Concepción, Facultad de Ciencias Físicas y Matemáticas, Departamento de Física
Thesis: *$f(R, T)$ Gravity, Palatini Variation and Surface Singularities*
Advisor: Dr. Guillermo F. Rubilar

Professional Title: Astronomer 2007-2012
Universidad de Concepción, Facultad de Ciencias Físicas y Matemáticas, Departamento de Astronomía

Bachelor in Astronomy 2007-2010
Universidad de Concepción, Facultad de Ciencias Físicas y Matemáticas, Departamento de Astronomía

WORK EXPERIENCE

Teacher Assistant 2018
Universidad de Concepción
Assistant of Quantum Field Theory Lectures, dictated by Dr. Julio Oliva

Physics Teacher 2015
Universidad Católica del Norte
Teaching: **Physics I**, *Engineering in Prevention of Risk and Aquaculture* · **Physics I**, *Industrial Engineering* · **Physics II**, *Industrial Engineering* · **Laboratory Physics II**, *Industrial Engineering*

Physics Teacher 2014
Preuniversitario Universidad Católica

Teacher Assistant 2012
Universidad de Concepción
Assistant of General Relativity Lectures, dictated by Dr. Guillermo Rubilar

RESEARCH AND SCIENTIFIC ACTIVITIES

Oral talk

JT expansion of AdS black holes in quasitopological electromagnetism 2022

Gravity at UdeC/UTA 2022

Universidad de Concepción, Concepción, Chile

Gravitational waves in scalar-tensor theories: The case for torsion 2020

Cycle of talks in Physics

Universidad de La Serena, La Serena, Chile

Gravitational waves and torsion in Horndeski's theory 2020

Gravity and Cosmology Group Udec

Universidad de Concepción, Concepción, Chile

Kundt spacetimes in arbitrary dimension 2020

School of Gravity and General Relativity

Centro de Estudios Científicos (CECs), Valdivia, Chile

Poster

Palatini $f(R, T)$ gravity and curvature singularities of polytropic spheres 2016

XX Simposio Chileno de Física

Universidad Tecnológica Metropolitana, Santiago, Chile

Hertzprung-Russell Diagram 2011

XIV Congreso Internacional de Astronomía Aficionada

Antofagasta, Chile

Tidal Tails in our Galaxy 2010

The Milky Way from the South in the South

Universidad Andrés Bello, Santiago, Chile

ORGANIZED MEETINGS

Gravity at UdeC/UTA 2022: Black Holes, Holography and Beyond 2022

Universidad de Concepción, Concepción, Chile

GRANTS AND PROJECT PARTICIPATION

Fellowship 2021-2023

Czech Academy of Sciences

Programme to support prospective human resources—post Ph.D. candidates, project (L100192101)

Project Participation 2022

FONDECYT

National Fund for Scientific and Technological Development, FONDECYT project (1210500)

Project Participation 2016-2018

FONDECYT

National Fund for Scientific and Technological Development, FONDECYT project (1150719)

Project Participation 2010

FONDECYT

National Fund for Scientific and Technological Development, FONDECYT project (1100540)

Fellowship 2016-2019

ANID

National Research and Development Agency, ANID PhD National grant (21160784)

Fellowship

2013

ANID

National Research and Development Agency, ANID Masters National grant (221320369)

RESEARCH STAYS

Internship

2018-2019

Institute of Mathematics, Czech Academy of Sciences, Prague

Research Internship supervised by Dr. Marcello Ortaggio. Research stay supported by National Research and Development Agency ANID

LIST OF PUBLICATIONS

- [1] J. Barrientos, A. Cisterna, D. Kubiznak, J. Oliva. [Accelerated black holes beyond Maxwell's electrodynamics](#). *Physics Letters B* **834**, 137447 (2022)
- [2] J. Barrientos, J. Mena. [Joule-Thomson expansion of AdS black holes in quasitopological electromagnetism](#). *Physical Review D* **106**, 044064 (2022)
- [3] J. Barrientos, A. Cisterna, N. Mora, A. Vigano. [AdS-Taub-NUT spacetimes and exact black bounces with scalar hair](#). *Physical Review D* **106**, 024038 (2022)
- [4] J. Barrientos, A. Cisterna, C. Corral, M. Oyarzo. [Gravitational instantons with conformally coupled scalar fields](#). *Journal of High Energy Physics* **05**, 110 (2022)
- [5] J. Barrientos, F. Izaurieta, E. Rodríguez, O. Valdivia. [Wave Operators, Torsion, and Weitzenböck Identities](#). *General Relativity and Gravitation* **54**, 3 (2022)
- [6] J. Barrientos, F. Cordonier-Tello, C. Corral, F. Izaurieta, P. Medina, E. Rodríguez, O. Valdivia. [Luminal propagation of gravitational waves in scalar-tensor theories: The case for torsion](#). *Physical Review D* **100**, 124039 (2019)
- [7] J. Barrientos, F. Cordonier-Tello, F. Izaurieta, P. Medina, D. Narbona, E. Rodríguez, O. Valdivia. [Nonminimal couplings, gravitational waves, and torsion in Horndeski's theory](#). *Physical Review D* **96**, 084023 (2017)
- [8] J. Barrientos, P. A. González, Y. Vásquez. [Four-dimensional black holes with scalar hair in nonlinear electrodynamics](#). *European Physical Journal C* **76**, 677 (2016)
- [9] J. Barrientos, G. F. Rubilar. [Surface curvature singularities of polytropic spheres in Palatini \$f\(R, T\)\$ gravity](#). *Physical Review D* **93**, 024021 (2016)
- [10] J. Barrientos, G. F. Rubilar. [Comment on " \$f\(R, T\)\$ gravity"](#). *Physical Review D* **90**, 028501 (2014)

SKILLS

<i>Languages</i>	Spanish (mother tongue) English (fluent)
<i>Software</i>	MAPLE, L ^A T _E X, MATHEMATICA, Wxmaxima, REDUCE