

# Luciano Combi

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La Plata

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## Academic Formation

2011-2016 **Ms.S. in Physics**, *Department of physics*, Faculty of Exact Sciences, *Universidad Nacional de La Plata* (UNLP).

Average mark: 9.60/10

Degree thesis: between General Relativity and Teleparallel Gravity. Mark: 10/10.  
Supervisor: Gustavo E. Romero.

2017-Present **Ph.D. in Physics**, *Department of physics*, Faculty of Exact Sciences, UNLP.  
Supervisor: Gustavo E. Romero.

## Current position

2017-Present **Doctoral Fellow**, *CONICET*.

Supervisor: Gustavo E. Romero.

Research field: gravitation, General Relativity, cosmology, black holes, local physics and cosmology, astrophysics, foundations of physics, scientific philosophy.

Place: Instituto Argentino de Radioastronomía, Bs.As., Argentina

## Ph.D. Courses

2017 **Elements of Quantum Field Theory I.**

Department of Physics, Faculty of Exact Sciences, UNLP

Professor: Horacio Falomir

Duration: 1 semester

## Fellowships

2017 **Ph.D. Research Fellow**, *CONICET*, (National Research Council).

Supervisor: Gustavo E. Romero.

Place: Instituto Argentino de Radioastronomía, Bs.As., Argentina.

## Teaching Experience

2015 **Undergraduate Teaching Assistant** of Calculus II, Department of Mathematics, Faculty of Exact Sciences, UNLP. **Period:** 1th semester

- 2015 - 2017 **Undergraduate Teaching Assistant**, Department of Physics, Faculty of Exact Sciences, UNLP. Courses given: Linear Algebra, General Physics I, General Physics II
- 2015 - 2017 **Undergraduate Teaching Assistant** Faculty of Engineering, UNLP. **Course:** Physics I (Laboratory duties)
- 2017- Present **Graduate Teaching Assistant** Department of Physics, Faculty of Exact Sciences, UNLP. Courses given: Gravitation, General Physics III, Methods in Mathematical Physics. **Current course:** Mechanics I

## Workshops and Schools

- 2016 *Journeys in theoretical physics*, (ICTP-Perimeter Institute). **Place:** Sao Paulo, Brasil. **Duration:** 1 week (40 hs). **Funding:** ICTP-SAIFR
- 2016  *$f(R)$  theories of gravity*, (FCGALP, UNLP). **Place:** La Plata, Argentina. **Duration:** 1 week (40 hs).
- 2018 *LAPIS: Cosmology in the era of large surveys*, (FCGALP, UNLP). **Place:** La Plata, Argentina. **Duration:** 1 week (40 hs). **Funding:** UNLP
- 2018 *International Pulsar Timing Array, student week*, (NRAO). **Place:** New Mexico, USA. **Duration:** 1 week (40 hs). **Funding:** NANOGrav
- 2018 *First Biennial Midwest Summer School in Philosophy of Physics*, (University of Chicago). **Place:** Chicago, USA. **Duration:** 1 week (40 hs). **Funding:** Templeton Foundation
- 2018 *The Sound of Space-Time: The dawn of Gravitational Wave Science*, (ICTP-SAIFR). **Place:** Sao Paulo, Brasil. **Duration:** 3 weeks (120 hs). **Funding:** ICTP-SAIFR
- 2019 *North American Einstein Toolkit Workshop*, (RIT). **Place:** Rochester, USA. **Duration:** 3 days. **Funding:** CCRG-RIT

## Research stays abroad

- 2018 *West Virginia University*, **Place:** Morgantown, West Virginia, USA. **Duration** 1 mont **Funding:** NANOGrav Collaboration
- 2018 *Rochester Institute of Technology*, **Place:** Rochester, NY, USA. **Duration** 6 months. **Funding:** Center for Computational Relativity and Gravitation, RIT **Project:** MHD simulations of spinning binary black hole systems.

## Scientific meetings

### Invited presentation

- 2017 *PuMA proyect: Pulsar Monitoring in Argentina* (in Spanish)  
Encuentro de Estudiantes de Astronomía, Buenos Aires, Argentina. September 2017
- 2018 *First Pulsar Observations in South America*  
Binational meeting SOCHIAS-AAA, La Serena, Chile. Octubre 16

### Contribution presentation

- 2015 *Inconsistency within the Everett interpretation of Quantum Mechanics*

First Latinamerican congress of Scientific Philosophy (In honor to Mario Bunge), Buenos Aires, Argentina. October 2015

- 2019 *Gravitational wave science and pulsars in Argentina*  
Grav19, Cordoba, Argentina. April 12

#### Posters

- 2015 *Force between cylindric magnets: Theory and experiment* (in Spanish)  
Luciano Combi, Lucas Pili, Pablo Pisani, Fernando Monticelli  
100<sup>a</sup> Anual Meeting of the Asociación Argentina de Física (AFA), September 2015
- 2017 *Intensive monitoring of pulsars in the south hemisphere* (in Spanish)  
Luciano Combi, Jorge Combi, Federico García, Guillermo Gancio, Carlos Lousto  
Anual Meeting of the Asociación Argentina de Astronomía (AAA), September 2017
- 2018 *Orbits in inhomogenous expanding space-times*  
Luciano Combi, Eduardo Gutiérrez  
LAPIS: Cosmology in the era of large surveys, April, 2018
- 2018 *The IAR observatory and the PuMA project*  
Luciano Combi, Guillermo Gancio, Carlos Lousto  
IPTA international meeting, Albuquerque, USA

#### Outreach

- 2018 *Friday talks in the Planetarium: Gravitational waves and pulsars*  
Planetarium, La Plata, Argentina
- 2018 **Outreach** department member of Argentine Institute of Radioastronomy  
In charge of social media management and guide for primary school and high-school visits to the Institute

#### Languages

Native **Spanish**  
**English**  
**French**

#### Programming

Mathematica (advanced), Python, C

#### Memberships

PuMA (*Pulsar Monitoring in Argentina* collaboration. **Status:** Full member. **Place:** Argentine Institute of Radioastronomy (IAR), La Plata, Argentina

#### Awards

- 2017 **Joaquín V. Gonzales award** for distinguished graduate of the National University of La Plata. Given by the City Government of La Plata, Capital of Buenos Aires.

## Other activities

**Reviewer in scientific journals** and institutions:

Astrophysics and Space Science (Springer)

Gravitation and Cosmology (Springer)

Estonian Research Council (ETIS)

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## Publications

### Refereed papers in international journals

- 1 **Inconsistency within the Everett interpretation of Quantum Mechanics.**  
Luciano Combi, Gustavo E. Romero.  
*Methateoria* (ISSN 1853-2322) **7**, 47-53, 2017
- 2 **Gravitational energy and radiation of a charged black hole.**  
Luciano Combi, Gustavo E. Romero.  
*Classical and Quantum Gravity*, **34**, 195008, 2017
- 3 **Is Teleparallel Gravity really equivalent to General Relativity?.**  
Luciano Combi, Gustavo E. Romero.  
*Annalen der Physik*, 1700175, 2018
- 4 **A note on geodesics in inhomogeneous expanding spacetimes.**  
D. Perez, G.E. Romero, Luciano Combi, E.M. Gutiérrez.  
*Classical and Quantum Gravity*, **36**, 055002, 2019
- 5 **Electromagnetic fields and charges in expanding universes.**  
Luciano Combi, Gustavo E. Romero  
*Physical Review D*, **99**, 064017, 2019
- 6 **Upgraded antennas for pulsar observations in the Argentine Institute of Radio astronomy.**  
G. Gancio, C.O. Lousto, Luciano Combi, S. del Palacio, F. G. Lopez Armengol, J. A. Combi, F. García, P.Kornecki, A. L. Müller, E. Gutierrez, and F. Hauscarriaga  
*Astronomy and Astrophysics*, 2019 (Submitted)
- 7 **Properties and reference frames in General Relativity.**  
Luciano Combi, Federico Lopez Armengol  
*Philosophy of Science*, 2019 (Submitted)
- 8 **Is space-time material?.**  
Luciano Combi  
*Materialism today*, Syntheses (Springer), 2019 (Forthcoming)

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## Observational experience

### Telegrams

- 1 **Follow up of the radio flare from the magnetar XTE J1810-197 at 1.4 GHz.**  
Del Palacio, S.; Garcia, F.; Combi, L.; Lopez Armengol, F.; Gancio, G.; Muller, A. L.; Kornecki, P., on behalf of the PuMA Collaboration  
*The Astronomer's Telegram*, **12323**, 2018
- 2 **Radio observations following the recent glitch of Vela Pulsar (PSR B0833-45).**  
F. G. Lopez Armengol, C. O. Lousto, S. del Palacio , F. Garcia, L. Combi, J. A. Combi , G. Gancio , A. L. Mueller, P. Kornecki, on behalf of the PuMA Collaboration

*The Astronomer's Telegram*, **12482**, 2019