



Paula Kornecki

Curriculum Vitae

I am currently finishing my Ph.D. based on the study of the production and propagation of cosmic rays in galaxies with active star formation. In particular, I am working on multi-wavelength models that can explain the observed non-thermal emission produced in star-forming galaxies, from radio to gamma rays, and comparing them with self-consistent observations. I have also experience with multi-wavelength data reduction and analysis, as well as managing large astronomical surveys, catalogues, and databases.

Personal Information

Full Name Paula Kornecki
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Experience and Education

2016–Present **PhD in Astronomy**, *La Plata National University, Argentina*.
PhD thesis Production and propagation of γ -rays in galaxies with active star formation
Supervisor Dr. Leonardo J Pellizza.
2010–2016 **M. Sc. in Astronomy**, *La Plata National University, Argentina*.
Master thesis Multi-wavelength research of unidentified X/γ -rays sources
Supervisor Dr. Jorge A. Combi
Qualification 10 (out of 10)
2006–2010 **B. Sc in Astronomy**, *La Plata National University, Argentina*.
PhD courses
2020 **Machine Learning-Applications in data mining and deep learning** (*one month course*).
Professors: Dr. Franco Ronchetti and Dr. Alejandro Rosete Suárez

- 2018 **Computational tools for scientists** (*five months course*). Professors: Luis Ariel Pugnaroni and Carlos Manuel Carlevaro
- 2017 **The English of science** (*five months course*). Qualification 9/10
- 2017 **Introduction to black hole astrophysics** (*five months course*). Professor: Dr. Gustavo Romero
- 2017 **School of Advanced Science on High Energy and Plasma Astrophysics in the CTA Era (SPSAS-HighAstro)**. Sao Paulo, Brasil.
- 20 Feb – 3 Mar 2017 **COSPAR Capacity Building Latin American Workshop: X-ray Astrophysics: Data Analysis of the XMM-Newton, Chandra and NuStar X-ray Missions**. Viedma, Argentina.
- August 2017 **Data analysis of Gamma-ray sources detected with the *Fermi* telescope**. Professors: Dr. Jorge A. Combi and Pedro L. Luque Escamilla. La Plata, Argentina.

Scholarships obtained

- April 2016 **60-months Doctoral Scholarships from CONICET (Scientific and Technical Research Council from Argentina)**
- Topic *Production and propagation of gamma radiation in galaxies with active stellar formation.*
- Workplace Argentinean Institut of Radioastronomy (IAR)
- Supervisor Dr. Leonardo J. Pellizza
- Co-Supervisor Dr. J. Facundo Albacete Colombo
- Oct 2015–Mar 2016 **Training Fellowship from CIC, Scientific Research Council from Buenos Aires province, Argentina**
- Topic Multi-wavelength research of unidentified X/gamma-ray sources
- Supervisors Dr. Jorge A. Combi
- Sep 2014–Sep 2015 **Research Fellowship granted by Argentinian Interuniversity National Council**
- Topic Multi-wavelength research of unidentified X/gamma-ray sources
- Supervisors Dr. Jorge A. Combi

Awards

- December 2016 Distinction Joaquín V. González awarded to students with the highest qualifications at the Faculty of Astronomical and Geophysical Sciences of La Plata University. La Plata City Council, Buenos Aires, Argentina.

Participation in Research Groups and Scientific Associations

- 2021–today External collaborator of the group of the star-formation region at the Cherenkov Telescope Array (CTA) collaboration.
- 2017–today Member of the group Pulsar Monitoring in Argentina (PuMA).
- 2016–today Member of Argentinian Astronomical Society (AAA).
- 2016–today Member of the group Grupo de Astrofísica Relativista y Radioastronomía (GARRA).

Publications

Refereed papers in international journals

- **Non-thermal emission from star-forming galaxies detected in γ -rays**. Kornecki, P.; Peretti E.; del Palacio, S.; Benaglia, P.; Pellizza, L. J. submitted to *Astronomy & Astrophysics* (May-2021)
<https://arxiv.org/abs/2007.07430>
- **γ -ray/infrared luminosity correlation of star-forming galaxies**. Kornecki, P.; Pellizza, L. J.; del Palacio, S.; Muller, A. L.; Albacete-Colombo, J. F.; Romero, G. E. *Astronomy & Astrophysics* 641, A147 (2020).
<https://arxiv.org/abs/2007.07430>
- **PSR J0437-4715: The Argentine Institute of Radioastronomy 2019-2020 Observational Campaign** Sosa Fiscella et al. (including Kornecki, P.) *The Astrophysical Journal* 908, 158 (2021)
<https://arxiv.org/abs/2010.00010>
- **Upgraded antennas for pulsar observations in the Argentine Institute of Radio astronomy** Gancio et al. (including Kornecki, P.) *Astronomy & Astrophysics* 633, A84 (2020)
<https://arxiv.org/abs/1908.07049>

The Astronomer's Telegram (ATel)

- **ATel # 12323**, Follow up of the radio flare from the magnetar XTE J1810-197 at 1.4 GHz, On behalf of the PuMA Collaboration. Del Palacio et al. 2018 (including **Kornecki, P.**).
<http://www.astronomerstelegam.org/?read=12323>
- **ATel # 12482**, Radio observations following the recent glitch of Vela Pulsar (PSR B0833-45), On behalf of the PuMA Collaboration. Del Palacio et al. 2019 (including **Kornecki, P.**).
<http://www.astronomerstelegam.org/?read=12482>

International conferences proceedings

- **A multi-wavelength view of the cosmic ray confinement in star-forming galaxies.** Kornecki et al. 2021. Proceedings of 37th International Cosmic Ray Conference. vol. 395
<https://pos.sissa.it/395/456/pdf>

National conference proceedings

- **γ -rays emission from Galactic superwinds.** Kornecki et al. 2019. Proceedings of Asoc. Arg. Astron. vol. 61B, p.189-191
<https://ui.adsabs.harvard.edu/abs/2020BAAA...61B.189K/abstract>
- **Production and propagation of neutrons in microquasars jets.** Escobar et al. 2018 (including **Kornecki, P.**) Proceedings of Asoc. Arg. Astron. vol. 60, p.95-97
<https://ui.adsabs.harvard.edu/abs/2018BAAA...60...95E/abstract>
- **Star-forming galaxies as gamma radiation emitters.** Kornecki et al. 2018. Proceedings of Asoc. Arg. Astron. vol. 60, p.89-91
<https://ui.adsabs.harvard.edu/abs/2018BAAA...60...89K/abstract>
- **High-energy emission from star-forming galaxies.** Kornecki et al. 2017. Proceedings of Asoc. Arg. Astron. vol. 59, p. 84-86
<https://ui.adsabs.harvard.edu/abs/2017BAAA...59...84K/abstract>
- **Study of 2 X-ray sources associated to the unidentified γ -ray source 2FGL J0534.8-0548.** Kornecki et al. 2016. Proceedings of. Asoc. Arg. Astron. vol.58, p.237-239
<https://ui.adsabs.harvard.edu/abs/2016BAAA...58...237K/abstract>

Referee activities

- Journal Referee of Nature

Teaching Experience

Graduate Experience

May 2019–Present **Teaching assistant, MATHEMATICAL ANALYSIS II (CIBEX)**, Math Department, National University of La Plata (UNLP).

2019 **Teaching Assistant of the Summer Entrance Course**, Faculty of Exact Sciences, La Plata (UNLP).

2018 **Teaching Assistant of the Summer Entrance Course**, Faculty of Exact Sciences, La Plata (UNLP).

October 2017–April 2018 **Teaching assistant, MATHEMATICAL ANALYSIS I**, National University of La Plata (UNLP).

Undergraduate Experience

Summer of 2014 and 2016 **Auxiliary Teacher from the Levelling Course on Elementary Math** at National University of La Plata (UNLP).

September 2014–August 2015 **Teaching assistant**, Tutor from the Distance Levelling Course and other pedagogical activities, National University of La Plata (UNLP).

August 2015–April 2018 **Teaching assistant, MATHEMATICAL ANALYSIS I**, National University of La Plata (UNLP).

Computer Skills

Software–data reduction and analysis SAS, HEASoft, Fermitools, Miriad

Languages Python, Fortran, Latex, IDL

Conference and Meetings

- Contributions
- *A multi-wavelength view of the cosmic ray confinement in star-forming galaxies.* **Kornecki, P. (Talk)**. 37th International Cosmic Ray Conference (online). July 2021, Berlin, Germany.
 - *Gamma-ray luminosity-SFR correlation.* **Kornecki, P. Talk** at the Monthly CTA Meeting of the Star Formation Regions Group. June 23 2021.// <https://indico.cta-observatory.org/event/3517/>
 - *Pulsars radio-observations from the southern hemisphere.* **Kornecki, P. (Invited talk)** representing the PuMA Collaboration. Cosmology Days Cosmo@ar V, Physics Department of the University of Buenos Aires. 2019
 - *γ /infrared correlation in galaxies with active star formation,* **Kornecki, P. (Talk)**. 62 Annual Meeting of the Argentinian Astronomical Society (online). October 2020, Rosario, Argentina.
 - *High-energy emission in galaxies with active star formation due to super winds,* **Kornecki, P. (Talk)**. 61 Annual Meeting of the Argentinian Astronomical Society. September 2019, Rio Negro, Argentina.
 - *Star-forming galaxies as gamma radiation emitters.* **Kornecki et al. (poster)**. 60th Annual Meeting of the Argentinian Astronomical Society. September 2017, Mendoza, Argentina
 - *High-energy emission from star-forming galaxies,* **Kornecki et al. (poster)**. 59th Annual Meeting of the Argentinean Astronomical Society. September 2016, San Juan, Argentina.
 - *Preliminary study of an X-ray source associated with the γ -ray source 2FGL J0534.8–0548,* **Kornecki et al. (poster)**. 58th Annual Meeting of the Argentinean Astronomical Society. September 2015, La Plata, Argentina.
- Attendance
- Pulsar monitoring from the IAR observatory, Mini-course on gravitational waves (FCAG)–UNLP. December 2018, La Plata, Argentina.
 - 49th Annual Meeting of the Argentinian Astronomical Society. September 2006, Córdoba, Argentina.
 - 51th Annual Meeting of the Argentinian Astronomical Society. September 2008, San Juan, Argentina.
 - 52th Annual Meeting of the Argentinian Astronomical Society. September 2009, La Plata, Argentina.
 - 53th Annual Meeting of the Argentinean Astronomical Society. September 2010, Salta, Argentina.
 - Workshop: Observing with Gemini, 2010, La Plata, Argentina.
 - 1st Argentinian-Brazilian Meeting on Gravitation, Astrophysics and Cosmology. October 2011, Foz do Iguacu, Brazil.
 - 1st Meeting of Astronomy Students at the Faculty of Astronomy and Geophysics (FCAG)–UNLP. September 2011, La Plata, Argentina.
 - 2nd Argentinian-Brazilian Meeting on Gravitation, Astrophysics and Cosmology. April 2014, Buenos Aires, Argentina.
 - Workshop Links between Supernovae and Supernova Remnants in Argentina. Nov 2016, La Plata, Argentina.

Languages

- Spanish Mother tongue
English reading, writing and conversationally fluent

Outreach activities

- 2014 Member of a University social Project called *Right to the night sky in contexts of punitive confinement*. The goal of this project is to strengthen access to fundamental rights of young people deprived of their freedom, starting from the holding of Astronomy workshops in prisons. These recreational and educational activities are led and carried out outdoors at night by the project members.

Other Activities

April 2014– April 2016 **Participation in the Faculty's co-governance.** Student Advisor at the Council of La Plata Astronomical and Geophysical Sciences Faculty.