

FLORENCIA LAURA VIEYRO

CAREER PROFILE

2017- Present **Research Scientist**, *Instituto Argentino de Radioastronomía (IAR)*, National Research Council (CONICET).

2014- Present **Instructor of Introduction to Astrophysics**, *Facultad de Ciencias Astronómicas y Geofísicas, La Plata University*.

Research field: High-energy astrophysics, non-thermal processes, particle acceleration and transport, neutrinos, black holes, general relativity, and high-energy plasma phenomena in general.

ACADEMIC FORMATION

2013 **PhD in Astronomy**, *Facultad de Ciencias Astronómicas y Geofísicas, Universidad Nacional de La Plata, Instituto Argentino de Radioastronomía (IAR-CONICET)*.

2009 **Ms.S. in Astronomy**, *Facultad de Ciencias Astronómicas y Geofísicas, La Plata University (UNLP)*, Mark: 9.33/10.0.

FELLOWSHIPS

2016-2017 Postdoctoral Research Fellow, University of Barcelona.

2014-2016 Postdoctoral CONICET Research Fellow (National Research Council).

2012 Cnpq-TWAS Sandwich Program.

2009-2014 PhD CONICET Research Fellow (National Research Council).

GRANTS AND AWARDS

2021-2023 Researcher award by National Research Council. PIP 11220200100554CO.

2018-2020 Young Researcher award by the ANPCyT. PICT-2017-0898.

2009 Joaquín V. González Award for outstanding marks. La Plata, Argentina.

INSTITUTIONAL MANAGEMENT

2020-Pres. Argentinian Astronomy Society Secretariat.

2020-Pres. Scientist Delegate of IAR. (Res. 012/2020)

2019-Pres. Scientist Representative in the Council of IAR.

2015-2016 Fellow Representative in the Council of IAR.

FORMATION OF HUMAN RESOURCES

2021 Supervisor of María Eugenia Ruda, CIN scholarship.

2019-Pres. Advisor Professor of Julián Astudillo, FCAGLP/UNLP.

2017-Pres. PhD co-supervisor of Eduardo M. Gutiérrez, UNLP. Supervisor: G.E. Romero

2017 Ms. Thesis co-supervisor of Eduardo M. Gutiérrez, UNLP. Supervisor: G.E. Romero

RESEARCH STAYS

2016 **Instituto de Ciencias Nucleares (UNAM)**, Mexico City, Mexico, two weeks, 2016.

2014 **Université Paris Diderot**, Paris 7, France, two weeks, 2014.

2013 **Universidade Estadual de Campinas (Unicamp)**, Brazil, six months, 2012.

- 2012 **University of California, Santa Cruz (UCSC)**, USA, two months, 2012.
2012 **Dark Cosmology Centre**, Copenhagen University, Denmark, two weeks, 2012.
2011 **Departament d'Astronomia i Meteorologia**, Universitat de Barcelona, Spain, three weeks, 2011.

INVITED TALKS

- Oct. 2018 *Binational AAA-SOCHIAS meeting*, La Serena, Chile.
Apr. 2014 *2nd Argentinian-Brazilian Meeting - GrACo*, Buenos Aires, Argentina.
Aug. 2011 *Workshop on Relativistic Jets in the Universe*, Copenhagen, Denmark.
- 9 oral conference contributions, and 8 colloquia and seminars in several universities and research institutes.

OTHER ACTIVITIES

- Referee in scientific journals (ApJ, BAAA).
- LOC and SOC Member in several conferences.
2021 Master Thesis tribunal member, UNLP.
2014 Guest Editor, Proceedings of the *2nd Argentinian-Brazilian Meeting - GrACo*, Buenos Aires, Argentina.
- Frequent expositor of public talks at La Plata Planetarium.
2005-Pres. More than ten years of teaching experience in La Plata University.

PUBLICATIONS

Refereed in international journals

- Non-thermal processes in hot accretion flows onto supermassive black holes: an inhomogeneous model**
Gutiérrez, E.M., **Vieyro F.L.**, Romero G.E.
Astronomy & Astrophysics, **649**, A87, 2021
- Cosmic rays from the nearby starburst galaxy NGC 253: the effect of a low-luminosity active galactic nucleus**
Gutiérrez, E.M., Romero G.E., **Vieyro F.L.**
Mon. Not. R. Astron. Soc., **494**, 2, 2020
- Non-thermal emission resulting from a supernova explosion inside an extragalactic jet**
Vieyro F.L., Bosch-Ramon V, Torres-Albà N.
Astronomy & Astrophysics, **622**, A175, 2019
- Primordial black hole evolution in two-fluid cosmology**
Gutiérrez, E.M., **Vieyro F.L.**, Romero G.E.
Mon. Not. R. Astron. Soc., **473**, 4, 2018
- Collective non-thermal emission from an extragalactic jet interacting with stars**
Vieyro F.L., Torres-Albà N., and Bosch-Ramon V.
Astronomy & Astrophysics, **604**, A57, 2017
- A model for the repeating FRB 121102 in the AGN scenario**
Vieyro F.L., Romero G.E., Bosch-Ramon V, Marcote B. and del Valle M.V.
Astronomy & Astrophysics, **602**, A64, 2017
- A model for the polarization of the high-energy radiation from accreting black holes: the case of XTE J1118+480**
Vieyro F.L., Romero G.E., and Chaty S.

Astronomy & Astrophysics, **587**, A63, 7 pp, 2016

8. **A mechanism for fast radio bursts**
Romero G.E., del Vale M.V. and **Vieyro F.L.**
Phys. Rev. D **39**, 2, 023001, 2016
9. **Coronal origin of the polarization of the high-energy emission of Cygnus X-1**
Romero G.E., **Vieyro F.L.**, and Chaty S.
Astronomy & Astrophysics Letters, **562**, L7, 2014
10. **Neutron production in black hole coronae and proton loading of jets**
Vila G.S., **Vieyro F.L.**, and Romero G.E.
International Journal of Modern Physics S, **28**, 1460191, 2014
11. **Neutrinos from collapsars**
Vieyro F.L., Romero G.E., and Peres O.L.
Astronomy & Astrophysics, **558**, A142, 2013
12. **Nonthermal processes and neutrino emission from the black hole GRO J0422+32 in a bursting state**
Vieyro F.L., Sestayo Y., Romero G.E., and Paredes J.M.
Astronomy & Astrophysics, **546**, A46, 2012
13. **Particle transport in magnetized media around black holes and associated radiation**
Vieyro F.L., Romero G.E.
Astronomy & Astrophysics, **542**, A7, 2012
14. **Gravitational lensing of cosmological neutrino sources**
Romero G.E., **Vieyro F.L.**
International Journal of Modern Physics S, **3**, pp. 475-482, 2011
15. **Neutrino flares from black holes coronae**
Vieyro F.L., Romero G.E.
Advances in Space Research, **48**, pp. 979-984, 2011
16. **Non-thermal processes around accreting galactic black holes**
Romero G.E., **Vieyro F.L.**, Vila G.S.
Astronomy & Astrophysics, **519**, A109, 2010

Proceedings

1. **High-energy astrophysics on compact objects**
Vieyro F.L.
Bol. Asoc. Arg. Astron. **61a**, 224-230, 2019
2. **Radiation from hot accretion flows onto black holes**
Gutiérrez, E.M., **Vieyro F.L.**, Romero G.E.
Bol. Asoc. Arg. Astron. **61a**, 243-245, 2019
3. **Non-thermal emission produced by the interaction of a jet with a supernova remnant**
Vieyro F.L., Bosch-Ramon V., Torres-Albà N.
International Journal of Modern Physics D, **27**, 1844021, 2018
4. **Gas de agujeros negros cosmológicos**
Gutiérrez, E.M., **Vieyro F.L.**, Romero G.E.
Bol. Asoc. Arg. Astron. **60**, 142-144, 2018

5. **Non-thermal emission from the interaction of extragalactic jets with stars**
Vieyro F.L., Torres-Albà N., Bosch-Ramon V.
AIP Conference Proceedings, 1792, 050012, 2017
6. **Characterizing the stellar populations interacting with AGN jets**
Torres-Albà N., Bosch-Ramon V., **Vieyro F.L.**
AIP Conference Proceedings, 1792, 050031, 2017
7. **Relativistic Particles in Magnetized Media around Black Holes**
Romero G.E., **Vieyro F.L.**
Proceedings of the Thirteenth Marcel Grossman Meeting on General Relativity, eds: K. Rosquist, R. T., Jantzen, R. Ruffini, World Scientific, 1358, 2015
8. **Neutrino emission from gamma-ray bursts**
Vieyro F.L.
Proceedings of the Second Argentinian-Brazilian Meeting - Gravitation, Astrophysics, and Cosmology, eds: Vila, G. S., Vieyro, F. L., Fabris, J. C., AAA Workshop, 7, ISBN: 9789872494827, 2015
9. **Gravitational Lensing of Neutrino from Collapsars**
Vieyro F.L., Romero G.E.
Gravitation, Relativistic Astrophysics, and Cosmology, eds: F.T. Falciano and L.J. Pellizza, Cambridge University Press, 2014
10. **Neutron production in black hole coronae**
Vieyro F.L., Vila G.S., Romero G.E.
Bol. Asoc. Arg. Astron. **56**, 343-346, 2013
11. **Episodic gamma-ray and neutrino emission from the low mass X-ray binary GRO J0422+32**
Vieyro F.L., Romero G.E.
High Energy Gamma-Ray Astronomy, eds: F. Aharonian, W. Hofmann, F. Rieger, AIP Conference Proceedings 1505, 410-413, 2012
12. **Flares from galactic black holes**
Vieyro F.L., Romero G.E.
RMxAC Serie de Conferencias, Eds. W. J. Henney & S. Torres-Peimbert, 40, pp. 153-154, 2011
13. **Transient high-energy flares from accreting black holes**
Vieyro F.L., Romero G.E.
Proceedings of the International Astronomical Union, Vol. 6, Symposium S275, pp. 313-314, 2011
14. **Gamma-ray flares from black hole coronae**
Vieyro F.L., Romero G.E.
Proceedings of Science, PoS (tsra2010), 174R, 2010
15. **Non-thermal radiation from Cygnus X-1 corona**
Vieyro F.L., Romero G.E., Vila G.S.
International Journal of Modern Physics D **19**, pp. 783-789, 2010
16. **Non-thermal radiation from galactic black hole coronae**
Vieyro F.L., Romero G.E., Vila G.S.
Bol. Asoc. Arg. Astron. **52**, pp. 263-266, 2009