

FLORENCIA LAURA VIEYRO

CAREER PROFILE

2016-Present **Postdoctoral Fellow**, *Department of Astronomy and Meteorology, Universitat de Barcelona.*

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 (FCAGLP).*

PhD Thesis: Relativistic particle effects around accreting black holes

Supervisor: Dr. Gustavo E. Romero

Working place: Instituto Argentino de Radioastronomía (IAR-CONICET)

2009 **Ms.S. in Astronomy**, *Facultad de Ciencias Astronómicas y Geofísicas, Universidad Nacional de La Plata.*

Degree Thesis: Non-thermal radiation around accreting black holes

Supervisor: Dr. Gustavo E. Romero, **Co-Supervisor:** Dr. Gabriela S. Vila

FELLOWSHIPS

2016 Postdoctoral Research Fellow Department of Astronomy and Meteorology, Universitat de Barcelona.

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

2012 Cnpq-TWAS Sandwich Program.

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

AWARDS

2009 Joaquín V. González Award, for outstanding marks during studies.
La Plata government, Buenos Aires, Argentina.

INSTITUTIONAL MANAGEMENT

2015-2016 Member of the Directive Council of the Instituto Argentino de Radioastronomía

TEACHING EXPERIENCE

2013-Present Instructor of Introduction to Astrophysics, FCAGLP.

2014-2015 Teaching Assistant of Introduction to Relativistic Astrophysics and Introduction to Black Hole Astrophysics, FCAGLP.

2010-2013 Teaching Assistant of General Physics I/IV, Faculty of Exact Sciences, UNLP.

- 2008-2010 Teaching Assistant of Calculus I, Faculty of Exact Sciences, UNLP.
- 2006-2009 Teaching Assistant of General Physics I/II, Faculty of Exact Sciences, UNLP.
- 2007-2008 Teaching Assistant of Elementary Math, FCAGLP. Duration: two months.
- 2005-2008 Teaching Assistant of General Physics, Faculty of Natural Sciences and Museum, UNLP.

OUTREACH ACTIVITIES

- 2015 Public talks: *Black holes in the Universe*, La Plata Planetarium.
- 2014 Public talk: *Gamma-ray bursts*, FCAGLP.
- 2013 *Gamma-ray bursts*. Newsletter of the Instituto Argentino de Radioastronomía
- 2011 Public talk: *Black holes in action*, FCAGLP.

ACTIVITIES AS EDITOR OF PROCEEDINGS

- 2014 Guest Editor, Proceedings of the *Second Argentinian-Brazilian Meeting - Gravitation, Astrophysics, and Cosmology*, Buenos Aires, Argentina.

ORGANIZATION OF SCIENTIFIC MEETINGS

- Oct. 2015 **High-Energy Phenomena in Relativistic Outflows (HEPRO) V**, La Plata, Argentina.
LOC Member
- Sept. 2010 **IAU Symposium 275: “Jets at all Scales”**, Buenos Aires, Argentina.
LOC Member

VISITS TO FOREIGN INSTITUTIONS

- 2014 **Université Paris Diderot**, Paris 7, France, May 30 - June 17, 2014
- 2013 **Universidad Estadual de Campinas (Unicamp)**, Brazil, August 21, 2012 - February 14, 2013
- 2012 **University of California, Santa Cruz (UCSC)**, USA, April 24 - July 16, 2012
- 2012 **Dark Cosmology Centre**, Copenhagen University, Denmark, August 17 - 31, 2012
- 2011 **Departament d’Astronomia i Meteorologia**, Universitat de Barcelona (UB), Spain, July 3 - 12, 2011 and September 1 - 10, 2011

INVITED COLLOQUIA AND SEMINARS

- Jun. 2014 **Gamma-ray polarization from back hole coronae**
Institut Lagrange, Paris.
- Sept. 2012 **Relativistic particle interactions around accreting back holes**
Department of Cosmic Rays and Cronology, Universidad Estadual de Campinas (Unicamp), Brazil.
- Jul. 2011 **Non-thermal processes around black holes**
Departament d’Astronomia i Meteorologia, Universitat de Barcelona, Spain.

INVITED CONFERENCE PRESENTATIONS

- Apr. 2014 **Neutrino emission from gamma-ray bursts**
Second Argentinian-Brazilian Meeting - Gravitation, Astrophysics, and Cosmology, Buenos Aires, Argentina.
- Aug. 2011 **Accretion Disks around X-ray Binaries**
Workshop on Relativistic Jets in the Universe, Copenhagen, Denmark.

CONTRIBUTIONS CONFERENCE PRESENTATIONS

- Sept. 2015 **A corona model of the outbursts of XTE J1118+480**
58th meeting of the Asociación Argentina de Astronomía, La Plata, Argentina, 2015.
- Sept. 2013 **Neutron production in black hole coronae**
56th meeting of the Asociación Argentina de Astronomía, Tandil, Argentina, 2013.
- Oct. 2012 **Neutrino emission from Pop III Gamma-ray bursts**
Boris Kayser minicourse/workshop on particle physics: Major Questions and Issues in Particle Physics. Sao Paulo, Brazil.
- Nov. 2010 **Neutrino transient emission from accreting black holes**
XIII Reunión Regional Latino-Americana de la UAI. Morelia, Mexico.
- Sept. 2009 **Non-thermal radiation from galactic black hole coronae**
52nd meeting of the Asociación Argentina de Astronomía, La Plata, Argentina.
- 2009-Present 9 mural contributions presented in scientific meetings, and 7 additional contributions presented by collaborators.

PUBLICATIONS

REFEREED PAPERS IN INTERNATIONAL JOURNALS

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

A mechanism for fast radio bursts

Romero G.E., del Vale M.V. and Vieyro F.L.
Phys. Rev. D **39**, Issue 2, 023001, 2016

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

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

Neutrinos from collapsars

Vieyro F.L., Romero G.E., and Peres O.L.
Astronomy & Astrophysics, **558**, A142, 2013

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

Particle transport in magnetized media around black holes and associated radiation

Vieyro F.L., Romero G.E.
Astronomy & Astrophysics **542**, A7, 2012

Gravitational lensing of cosmological neutrino sources

Romero G.E., Vieyro F.L.
International Journal of Modern Physics S **3**, pp. 475-482, 2011

Neutrino flares from black holes coronae

Romero G.E., Vieyro F.L.
Advances in Space Research **48**, pp. 979-984, 2011

Non-thermal processes around accreting galactic black holes

Romero G.E., Vieyro F.L., Vila G.S.
Astronomy & Astrophysics **519**, A109, 2010

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

COMPLETE PAPERS IN BOOKS AND PROCEEDINGS

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

Neutrino emission from gamma-ray bursts

Vieyro F.L.

Proceedings of the Second Argentinian-Brazilian Meeting - Gravitation, Astrophysics, and Cosmology, accepted, 2014

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

Neutron production in black hole coronae

Vieyro F.L., Vila G.S., Romero G.E.

Bol. Asoc. Arg. Astron. **56**, 343-346, 2013

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

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

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

Gamma-ray flares from black hole coronae

Vieyro F.L., Romero G.E.

Proceedings of Science, PoS (tsra2010), 174R, 2010

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