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Nationality: Mexican

Last Updated: September 13, 2020

Professional Experience

Postdoctoral Fellow

Department of Physics and Astronomy
Purdue University, West Lafayette, IN, USA
MENTOR: Prof. Dimitrios Giannios

October 2018 – Present

Postdoctoral Fellow

Instituto de Física y Matemáticas
Universidad Michoacana de San Nicolás de Hidalgo, Morelia, Mexico
MENTOR: Prof. Francisco S. Guzmán

January – October 2018

Graduate research assistant

Departament d'Astronomia i Astrofísica
Universitat de València, Burjassot, Spain
SUPERVISORS: Prof. Miguel A. Aloy & Dr. Petar Mimica

October 2011 – September 2017

Graduate research assistant

Instituto de Física y Matemáticas
Universidad Michoacana de San Nicolás de Hidalgo, Morelia, Mexico
SUPERVISOR: Prof. José A. Cervera

August 2009 – September 2011

Undergraduate research assistant

Facultad de Ciencias
Universidad Autónoma del Estado de México, Toluca, Mexico
SUPERVISOR: Prof. Francisco S. Guzmán

September 2008 – May 2009

Education

Ph.D. in Physics (Numerical Astrophysics)

Universitat de València, Spain
SUPERVISORS: Prof. Miguel A. Aloy & Dr. Petar Mimica
THESIS: *Numerical treatment of radiation processes in the internal shocks of magnetized relativistic outflows.*
Access: <http://roderic.uv.es/handle/10550/60003>

October 2011 – July 2017

M.Sc. in Physics

Universidad Michoacana de San Nicolás de Hidalgo, Mexico
SUPERVISOR: Prof. José A. Cervera
THESIS: *Study of TOV stars with the SPH method*

August 2009 – September 2011

B.Sc. in Physics

Universidad Autónoma del Estado de México, Mexico
SUPERVISOR: Prof. Francisco S. Guzmán
THESIS: *Numerical solution of null geodesics for the generation of gravitational lenses produced by spherically-symmetric and static spacetimes*

August 2004 – December 2008

Research Grants

NASA Fermi Cycle-12 Guest Investigator Program

A simple model to understand the blazar sequence
PI: Giannios, D., Co-I: Rueda-Becerril, J. M.

Grant #121077
2019

Grants and Fellowships

2018 – 2020: Fellowship from the Mexican Federal Government for a postdoctoral stay abroad awarded by the National Council of Science and Technology (CONACyT).

2018: Fellowship from the Mexican Federal Government under the *Program for the Professional Development of Higher Education Institutions*, awarded by the Secretariat of Public Education.

2014 – 2016: Fellowship from the Mexican Federal Government to study abroad awarded by the National Council of Science and Technology (CONACyT).

Oct. 2011 – Jun. 2014: Fellowship *Santiago Grisolia* awarded by the Council of Education, Research, Culture and Sport of the Valencian Community, Spain.

Sep. 2009 – Aug. 2011: Fellowship for MSc studies at the Institute of Physics and Mathematics, Universidad Michoacana de San Nicolás de Hidalgo, granted by the Mexican Council of Science and Technology (CONACyT).

Jun. – Aug. 2007: Fellowship for a temporary stay (3 months) in a national research center under the *XVII summer of scientific investigation program* awarded by the Mexican Academia of Science.

Publications

Articles.....

- [5] **Rueda-Becerril, J. M.**, Harrison, A. O. & Giannios, D. *Baryon loading of blazar jets independent of accretion rate, not so their luminosity*, (2020), submitted for review to MNRAS [arXiv:2009.02273](#).
- [4] Zhang, H., Christie, I., Petropoulou, M., **Rueda-Becerril, J. M.** & Giannios, D. *Inverse Compton Signatures of Gamma-Ray Burst Afterglows*, **MNRAS** **496**, 974–986, (2020), [arXiv:1910.14049](#).
- [3] **Rueda-Becerril, J. M.**, Mimica, P. & Aloy, M. A. *On the influence of a hybrid thermal–non-thermal distribution in the internal shocks model for blazars*, **MNRAS** **468**, 1169–1182, (2017), [arXiv:1612.06383](#).
- [2] **Rueda-Becerril, J. M.**, Mimica, P. & Aloy, M. A. *The influence of the magnetic field on the spectral properties of blazars*, **MNRAS** **438**, 1856–1869 (2014), [arXiv:1310.5441](#).
- [1] Guzmán, F. S. & **Rueda-Becerril, J. M.** *Spherical boson stars as black hole mimickers*, **Phys. Rev. D** **80**, 084023 (2009), [arXiv:1009.1250](#).

Proceedings.....

- 5. **Rueda-Becerril, J. M.** *A numerical approach for radiative cooling in relativistic outflows*, (2020)
- 4. **Rueda-Becerril, J. M.**, Harrison, A. O. & Giannios, D. *The blazar sequence revised*, (2020)
- 3. **Rueda-Becerril, J. M.**, Mimica, P. & Aloy, M. A. *Numerical simulations of the internal shock model in magnetized relativistic jets of blazars*, **PoS(SWIFT 10)** **233**, 159 (2014), [arXiv:1502.07882](#).
- 2. **Rueda-Becerril, J. M.**, Mimica, P., Aloy, M. A. & Aloy, C. *Numerical study of broadband spectra caused by internal shocks in magnetized relativistic jets of blazars*, **EPJ Web Conf.** **61**, 02007 (2013), [arXiv:1309.4612](#).
- 1. Mimica, P., Aloy, M. A., **Rueda-Becerril, J. M.**, Tabik, S. & Aloy, C. *Numerical simulations of dynamics and emission from relativistic astrophysical jets*, **J. Phys.: Conf. Ser** **42**, 012001 (2013), [arXiv:1211.1794](#).