Javier Alejandro Acevedo Barroso

Doctoral assistant

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Education

2021-2025 — DOCTOR IN PHYSICS[1]
Laboratory of Astrophysics, École polytechnique fédérale de Lausanne (EPFL).
Searching for gravitational lenses at the dawn of the new generation of wide-field surveys.
Advisor: Dr. Frédéric Courbin.

2019-2021 — MASTER IN SCIENCES-PHYSICS
Departamento de Física, Universidad de los Andes.
Searching for extragalactic variable stars using Machine Learning algorithms. *Advisor*: Dr. Alejandro García.

2015-2019 — UNDERGRADUATE PHYSICS STUDIES
Institution: Departamento de Física, Universidad de los Andes. *Dissertation*: Simulating a collisional dark matter fluid using a Lattice-Boltzmann method. *Advisor*: Dr. Jaime Forero.

Selected publications

2024 — *Euclid: The Early Release Observations Lens Search Experiment* — 2024arXiv240806217A
Acevedo Barroso, J. A., O'Riordan, C. M., Clément, B., et al.

2024 — *Strong lensing by edge-on galaxies in UNIONS* — 2024IAUS..381...17A
Acevedo Barroso, J. A., Clément, B., Courbin, F., et al.

2024 — *Euclid. I. Overview of the Euclid mission* — 2024arXiv240513491E
Euclid Collaboration: Mellier, Y., Abdurro'uf, **Acevedo Barroso, J. A.**, et al.

2023 — *The impact of human expert visual inspection on the discovery of strong gravitational lenses* — 2023MNRAS.523.4413R
Rojas, K., [...] , **Acevedo Barroso, J. A.**, et al.

Participation in events

2019 — MOCa 2019: Dark Matter in Colombia (Materia Oscura en Colombia).
Institution: Departamento de Física, Universidad de los Andes. *Talk*: Simulating collisional dark matter.

2019 — MOCa 2019: Dark Matter in Colombia (Materia Oscura en Colombia).
Institution: Departamento de Física, Universidad de los Andes. *Talk*: Simulating collisional dark matter.

2019 — COCOA 2019 Medellín: VI Colombian Congress of Astronomy and Astrophysics (VI Congreso Colombiano de Astronomía y Astrofísica).
Organizers: Universidad de Antioquia, Parque Explora – Planetario de Medellín, Instituto Tecnológico Metropolitano ITM y Sociedad Antioqueña de Astronomía SAA. *Talk*: Simulating Collisional Dark Matter (Simulando materia oscura colisional).

2018 — Uniandes School of Astronomy 2018 (Escuela de Astronomía Uniandes 2018).
Institution: Departamento de Física, Universidad de los Andes.

2018 — MOCa 2018: Dark Matter in Colombia (Materia Oscura en Colombia).

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[1]Defence scheduled for July, 2025

Institution: Departamento de Física, Universidad de los Andes. *Talk*: Simulating Collisional Dark Matter.

Research activities

2019-2020 Search for extragalactic variable stars using Machine Learning algorithms (Búsqueda de estrellas variables extragalácticas usando algoritmos de Machine Learning).
Institution: Departamento de Física, Universidad de los Andes. *Advisor*: Dr. Alejandro García.

2019 Measurement of the rotation velocity of type B and A stars (Medición de la velocidad de rotación de estrellas tipo B y A).
Institution: Departamento de Física, Universidad de los Andes. *Advisor*: Dr. Alejandro García.

2018-2020 Simulating collisional dark matter using a lattice Boltzmann method.
Institución: Departamento de Física, Universidad de los Andes. *Advisor*: Dr. Jaime Forero.

Teaching experience

2019 Teaching assistant, Experimental physics I.
Institution: Departamento de Física, Universidad de los Andes.

2019 Teaching assistant, Experimental physics II.
Institution: Departamento de Física, Universidad de los Andes.

Other works

2019 Design of the book "Las Bolsas de Basura" by Enrique Winter.
Editorial house: Escarabajo editorial.

Awards and scholarships

2019 Teaching assistant with full scholarship for master studies in physics, given by Universidad de los Andes.

2014 Full scholarship for undergraduate studies "Bachilleres por Colombia, Programa Mario Galán Gómez", given by Ecopetrol.

2013 Best student from Santander department. "Prueba Saber 11 2013". given by the Colombian Ministry of Education.

Professional Abilities

- Teamwork, specially in computational tasks.

- High capacity of working under pressure.

- Languages: Spanish (native), English (C1), German (A1).

- Advanced use of Linux.

- Design of articles and books in LaTeX.

- Programming languages: Python (advanced), Bash (intermediate), C (intermediate), R (basic), Java (basic), C++ (basic).

- Reduction and analysis of CCD images.

- Additional software: Anaconda, IRAF, Git, Make, Pandas, Numpy, Pytorch, Sympy and Spyder.