

Jaime E. FORERO-ROMERO

PERSONAL INFORMATION

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GITHUB: github.com/forero
CITIZENSHIP: Colombian
BIRTH DATE: October 14, 1981

RESEARCH INTERESTS

- Cosmology and Galaxy Evolution
- Computational Astrophysics
- The Dark Energy Spectroscopic Instrument (Collaboration Member)

EDUCATION

NOVEMBER 2007 **PhD. Physics**
AUGUST 2005 at the Ecole Normale Supérieure de Lyon (France)

JULY 2005 **M.Sc. Physics (Magistère Interuniversitaire)**
AUGUST 2003 at the Ecole Normale Supérieure (Paris, France)

JULY 2003 **Undergraduate Physics studies** (3rd & 4th year)
AUGUST 2001 at the Instituto Balseiro (Argentina)

JULY 2001 **Undergraduate Physics studies** (1st & 2nd year)
JULY 1999 at the U. Nacional de Colombia

ACADEMIC POSITIONS

PRESENT DAY **Associate Professor**
AUGUST 2015 Physics Department, Universidad de los Andes (Colombia)

JULY 2015 **Assistant Professor**
AUGUST 2012 Physics Department, Universidad de los Andes (Colombia)

JULY 2012 **Gruber Fellow**
OCTOBER 2011 Astronomy Department UC Berkeley (USA)

SEPTEMBER 2011 **Postdoctoral Researcher**
SEPTEMBER 2007 Leibniz Insititute for Astrophysics at Potsdam (Germany)

AUGUST 2007 **Graduate Student**
AUGUST 2006 Ecole Normale Supérieure de Lyon (France)

JULY 2006 **Élève**
SEPTEMBER 2003 Ecole Normale Supérieure (Paris, France)

AUGUST 2003 **Undergraduate Fellow**
AUGUST 2001 Instituto Balseiro (Bariloche, Argentina)

RESEARCH

BIBLIOMETRICS

- Refereed journal articles: 26 published + 1 accepted + 1 submitted (since first paper in 2007).
- Google Scholar statistics. Total Number of Citations: 738. H-index: 14.
- SAO/NASA Astrophysics Data System statistics. Total Number of Citations: 616. H-index: 13.

SELECTED PUBLICATIONS

- *The Local Group in the cosmic web*, **J.E. Forero-Romero**, R. González, ApJ, 799, 1, 2015.
- *Cosmic web alignments with the shape, angular momentum and peculiar velocities of dark matter halos*, **J.E. Forero-Romero**, S. Contreras, N. Padilla, MNRAS, 443, 1090, 2014.
- *The kinematics of the Local Group in a cosmological context*, **J.E. Forero-Romero**, Y. Hoffman, S. Bustamante, S. Gottloeber, G. Yepes, ApJ Letters, 767, 1, 2013
- *Effects of Star Formation Stochasticity on the Ly alpha & Lyman Continuum Emission from Dwarf Galaxies*, **J. E. Forero-Romero** & M. Dijkstra, MNRAS 428, 2163, 2013
- *A Dynamical Classification of the Cosmic Web*. **J.E. Forero-Romero** , Y. Hoffman , S. Gottloeber , A. Klypin, G. Yepes, MNRAS, 396, 1815-1824, 2009

SUPERVISED POSTDOCS

- 2015-2016. Verónica Arias. Dynamics of satellites in the Local Group.

SUPERVISED STUDENTS

2017

- 8 Sebastián Franco Ulloa. Undergraduate thesis in Physics at Universidad de los Andes. *Lattice Boltzmann methods to simulate dark matter.*

2016

- 7 Nicolás Romero Díaz. Undergraduate thesis in Physics at Universidad de los Andes. *Observational evidence of star formation stochasticity in the CALIFA dataset.*
- 6 David Esteban Bernal Neira. Undergraduate thesis in Physics at Universidad de los Andes. *Acotando las velocidades tangenciales de las galaxias satélite de Andrómeda utilizando optimización no lineal.*
- 5 Sergio Hernández Charpak. Undergraduate thesis in Physics at Universidad de los Andes. *Laniakea in a cosmological context.*

2015

- 4 María Camila Remolina Gutiérrez. Undergraduate thesis in Physics at Universidad de los Andes. *The joint effect of outflows and rotation on the Lyman-alpha line.*
- 3 Juan Nicolás Garavito Camargo. Master thesis in Physics at Universidad de los Andes. *The effect of gas bulk rotation on the Lyman-alpha line.*
- 2 Christian Nicanor Poveda Ruiz. Undergraduate thesis in Physics at Universidad de los Andes. *A semi-analytic approach to formation processes in galaxies.*

2014

- 1 Camilo Andrés Rivera Lozano. Undergraduate thesis in Physics at Universidad de los Andes. *Impacto de los parámetros cosmológicos en la estructura a gran escala del Universo.*

GRANTS

- 2017-2021 (coPI) LACEGAL Latin American Chinese European GALaxy Formation network. Funded by MSCA-RISE - Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE). (1.5 MEuro)
- 2016-2020 (PI) COLCIENCIAS grant to work on the Dark Energy Spectroscopic Instrument. (60 KUSD)
- 2012-2016 (PI) UNIANDES grant given as a startup package to assistant professors (25 KUSD).
- 2011-2012 (PI) IAU Peter and Patricia Gruber Foundation Fellowship. (50K USD).

SERVICE

INTERNATIONAL ORGANIZING COMMITTEES

PRESENT DAY OCTOBER 2015	Coordinator for the Andean Regional Office of Astronomy for Development. http://andean.astro4dev.org/
OCTOBER 2015	Main organizer of the Second <i>Workshop Astronomía en los Andes</i> to convene astronomers in the Andean region. Held in Bogotá, Colombia.
JULY 2013	Main organizer of the First <i>Workshop Astronomía en los Andes</i> to convene astronomers in the Andean region. Held in Bogotá, Colombia.
SEPTEMBER 2011	Co-organizer of the international conference <i>Young and Bright: understanding high redshift structures</i> . Held in Potsdam, Germany.

MISCELLANEA

LANGUAGES

SPANISH:	Native
ENGLISH:	Fluent
FRENCH:	Fluent
GERMAN:	Proficient
RUSSIAN:	Beginner

STATEMENT OF PURPOSE

My practice as an astrophysicist is built around the experience of being embodied in this world, in the current times. At least three aspects of this experience can be highlighted.

OUR PLACE IN THE UNIVERSE

Since 2007 the main driver of my research has been finding our place in the Universe. By *us* I mean our Galaxy, the Milky Way; by *Universe* I mean its material distribution on its largest scales. Major achievements of my work have been in finding ways to describe and quantify the filamentary structure of our Universe and placing our Galaxy in that context.

Building this research program from Colombia in South America has also involved supporting the local astronomical community (I helped to create the Colombian Astronomical Congress, first celebrated in 2008) while keeping ties to research institutions abroad.

I have now managed to build in Colombia a small group that forms new scientists, is part of the Latinamerican Chinese European Galaxy Formation Network ¹ (funded by the European Union) and takes part in the US-lead Dark Energy Spectroscopic Instrument (DESI) ², a collaboration that aims at making a map of the Universe with unprecedented accuracy.

UNIVERSE AESTHETICS

You wouldn't destroy a mountain for profits if you knew that it took billions of years to grow. That's at least what I think. This thought was motivated by the experience of living in a country —also in a world— that savages its territory looking for minerals to sell.

That's been my motivation to find out how can you *feel* this knowledge, which by definition means developing an *aesthetic*, a feeling, for the spatial, temporal and energetic scales that made it possible to be here, right now, as human being reading this words, breathing.

I this path I have collaborated since 2011 with artists, art historians, humanists and many people beyond disciplines. This has become a quest to *feel the Universe*.

ASTRONOMY FOR A BETTER WORLD

With the support of International Astronomical Union (IAU) in 2015 we started a Regional Office of Astronomy for Development (OAD) for the Andean Region ³.

“The mission of the OAD is to help further the use of astronomy as a tool for development by mobilizing the human and financial resources necessary in order to realize the field's scientific, technological and cultural benefits to society.”⁴

We follow the structure of the central OAD in South Africa and focus our work on the lines of research, education and outreach. The work we are doing is starting to yield results. This has included the realization that such undertaking is impossible without the collaboration with the Social Sciences and the Humanities.

Two outcomes have started to materialized after my work on the field. First, learning how to challenge traditional and mercantilist concepts of *development*; second, toning down the mentality of efficiency and success indicators to start building networks of *mutual care and understanding*.

¹<https://www.lacegal.com/>

²<http://desi.lbl.gov/>

³<http://andean.astro4dev.org/>

⁴<http://www.astro4dev.org/aboutiauooad/>

DECLARATION

I declare to the best of my knowledge that the information in this application is accurate. I acknowledge that providing misleading or untrue information may lead to my application being rejected, or my membership of the Global Young Academy being revoked.

A handwritten signature in black ink, consisting of a large, stylized 'J' followed by 'E. Forero-Romero'.

Jaime E. Forero-Romero, PhD
Associate Professor
Los Andes University, Colombia

September 23, 2017