Jaime E. FORERO-ROMERO

Born October 14, 1981. Bogotá, Colombia

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Universidad de los Andes
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Main Research Interests

- High Redshift Galaxy Evolution
- Milky Way Assembly
- Cosmic Web Characterization

Education

- PhD. Physics, Ecole Normale Supérieure de Lyon (France) 11/2007
- M.Sc.Physics (Magistre Interuniversitaire) Ecole Normale Supérieure (Paris, France), 08/2005
- Undergraduate Physics studies (3^{rd}-4^{th} years), Instituto Balseiro (Argentina), 08/2001 - 08/2003
- Undergraduate Physics studies (1^{st}-2^{nd} years), U. Nacional de Colombia, 07/1999 - 07/2001

Academic Positions

- Assistant Professor, Physics Department, Universidad de los Andes (Colombia), 8/2012-
- Gruber Fellow at the Astronomy Department UC Berkeley (USA), 10/2011-7/2012
- Postdoctoral Researcher at the Leibniz Institute for Astrophysics-Potsdam (AIP) (Germany), 10/2007-9/2011
- Graduate student at the Ecole Normale Supérieure de Lyon (France), 09/2006-09/2007
- Élève at the Ecole Normale Supérieure (Paris, France), 09/2003-08/2006
- Undergraduate fellow at the Instituto Balseiro (Bariloche, Argentina), 08/2001-08/2003

Honors and Awards

- 2011. IAU Peter and Patricia Gruber Foundation Fellowship

- 2006-2007. Graduate Research Fellowship (Allocation Couplée) of the French Ministry for Research and Education.

- 2003-2006. Scholarship at the Ecole Normale Supérieure (Paris), covers tuition fees plus room and board to pursue graduate studies and PhD research.

- 2001-2003. Undergraduate scholarship (covers tuition fees at the Instituto Balseiro plus room and board) from the Argentinian Atomic Energy Comission.

- 1999. Gold Medal in the National Chemistry Olympiad, Bogotá, Colombia (First Place, National Competition)

Grants

- 2013. (PI) Universidad de los Andes grant to organize the international Workshop *Astronomía en los Andes* to set up a collaboration network in the Andean region (5K USD).

- 2013. (Co-PI) ICTP grant to organize the international Workshop *Astronomía en los Andes* to set up a collaboration network in the Andean region (6K USD).

- 2013. (PI) Astronomy for Development Grant for the outreach project *Astronomía Periférica* (5K USD).

- 2012. (PI) NVIDIA Academic Partnership, Inkind donation of 1 TESLA GPU (worth ∼2K USD).

- 2011. (PI) IAU Peter and Patricia Gruber Foundation Fellowship. (50K USD).

Service

- 2013. Main organizer of the Worskhop *A*stronomía en los Andes to convene astronomers in the Andean region.

- 2013-present. In charge of the Astronomy Undergraduante and Graduate Seminar at Uniandes.

- 2012. Co-organizer and SOC member, 3rd Colombian Congress of Astronomy (Bucaramanga)

- 2011. Co-organizer of the international conference *Young and Bright: understanding high redshigt structures* ($\sim$ 60 attendees), Potsdam.

- 2014-present. Referee for JCAP

- 2013-present. Referee for the Astrophysical Journal

- 2011-present. Referee for Monthly Notices of the Royal Astronomical Society

- 2010-present. Referee for the Colombian funding agency *COLCIENCIAS*

- 2010-present. Referee for *Revista Colombiana de Física*

- 2010/2011. Co-organizer of internal workshops to give an institute wide research update in the extragalactic astronomy branch ($\sim$ 30 attendees), Potsdam.

- 2010. SOC member, 2nd Colombian Congress of Astronomy (Bogotá).

- 2008. Co-organizer and SOC member, 1st Colombian Congress of Astronomy (Medellín).

Teaching

- *Physics II (Electromagnetism).* Universidad de los Andes, 2014-I, Student's rating: 3.55/4.00 (60 students).

- *Computational Methods (Basic).* Universidad de los Andes., 2014-I, Student's rating: 3.76/4.00 (12 students).

- *Physics II (Electromagnetism).* Universidad de los Andes, 2013-II: 3.47/5.00 (61 students).

- *Computational Physics (Basic).* Universidad de los Andes., 2013-II, Student's rating: 3.36/4.00 (28 students).

- *Physics I (Newtonian Mechanics).* Universidad de los Andes., 2013-I, Student's rating: 3.52/4.00. (68 students).

- *Computational Physics (Basic).* Universidad de los Andes., 2013-I, Student's rating: 3.90/4.00 (10 students).

- *Physics I (Newtonian Mechanics).* Universidad de los Andes., 2012-II, Student's rating: 3.41/4.00 (65 students).

- *Introduction to Physics (module on Astrophysics).* Universidad de los Andes. 2012-II

- *Lectures on Galaxy Evolution*, V Colombian Astrophysics Summer School, Observatorio Astronomico Nacional, Summer 2009

- *Introduction to Astrophysics (Teaching Assistant)*, Undergraduate Level Course at the University of Lyon I, Spring 2007.

Students Supervised

- 2014-20: Camilo Andrés Rivera Lozano. Undergraduate thesis in Physics at Universidad de los Andes. *Impaccto de los parámetros cosmológicos en la estructura a gran escala del Universo.*

- Since August 2013: Felipe Gómez. PhD Student at Universidad de los Andes. Research project on the influence of the cosmic web on dark matter halo formation.

- Since October 2012: Nicolás Garavito. Master Student at Universidad de los Andes. Research project on radiative transfer of the Lyman-α line.

- 2013-10: Sebastian Bustamante. Undergraduate thesis in Physcis at Universidad de Antioquia on the large scale environment of the Local Group.

- 2012-10: David Noreña. Undergraduate thesis at Universidad de Antioquia (Colombia) on tidal streams in the Milky Way.

- 2010-10. Julián Mejía. Undergraduate thesis at the Universidad de Antioquia on a halo model of Lyman-α emitters at high redshift.

Jury of Master Thesis

- 2013. Roger Hurtado. Master student at the Observatorio Astronómico Nacional de Colombia. Thesis on gravitational lensing.

Publications

Refereed Journal Articles

ADS statistics. Total Number of Citations: 275. H-index: 9.

21 *Cosmological constraints from the redshift dependence of the Alcock-Paczynski effect in the galaxy density gradient field*, X-D. Li, C. Park, **J.E. Forero-Romero**, J. Kim, ApJ submitted, 2014.

20 *The Local Group in the cosmic web*, **J.E. Forero-Romero**, R. González, ApJ submitted, 2014.

19 *Characterizing SL2S galaxy groups using the Einstein radius*, T. Verdugo, V. Motta, G. Fox, **J. E. Forero-Romero**, R. P. Muoz, R. Pello, M. Limousin, A. More, R. Cabanac, G. Soucail, J. P. Blakeslee, A. J. Mejía-Narvez, G. Magris, J. G. Fernndez-Trincado, A&A accepted, 2014.

18 *The impact of gas bulk rotation on the lyman-alpha line* J.N. Garavito-Camargo, **J.E. Forero-Romero**, M. Dijkstra, ApJ accepted, 2014.

17 *Systematic uncertainties from halo asphericity in dark matter searches* N. Bernal, **J.E. Forero-Romero**, R. Garani, S. Palomares-Ruiz, JCAP, 09, 004, 2014.

16 *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.

15 *The abundance of Bullet Groups in ΛCDM*, J. G. Fernández-Trincado, **J. E. Forero-Romero**, G. Foex, V. Motta, T. Verdugo, V. Motta, ApJ Letter, 787, L32, 2014.

14 *The MultiDark Database: Release of the Bolshoi and MultiDark Cosmological Simulations* , K. Riebe , A. M. Partl, H. Enke, **J.E. Forero-Romero**, S. Gottloeber, A. Klypin, G. Lemson, F. Prada, J. R. Primack, M. Steinmetz, V. Turchaninov, Astronomische Nachrichten, 334, 691, 2013.

13 *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

12 *The velocity shear tensor: tracer of halo alignment*, Libeskind N., Hoffman Y., **Forero-Romero** J.E., Gottloeber S., Knebe A., Steinmentz M., Klypin A., MNRAS 428, 2489, 2013

11 *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

10 *A kinematic classification of the cosmic web*, Y. Hoffman, O. Metuki , G. Yepes, S. Gottloeber, **J. E. Forero-Romero**, N. I. Libeskind, A. Knebe, MNRAS, 425, 2049, 2012

9 *Modelling the fraction of Lyman Break Galaxies with strong Lyman-alpha emission at $5 < z < 7$* **Forero-Romero J.E.**, Yepes G., Gottloeber S., Prada F., MNRAS, 419, 952, 2012

8 *The dark matter assembly of the Local Group in constrained cosmological simulations of a ΛCDM universe* **Forero-Romero** J.E., Hoffman Y., Yepes G., Gottlöber S., Piontek R., Klypin A., Steinmetz M., MNRAS, 417, 1434, 2011

7 *Halo based reconstruction of the cosmic mass density field* Munõz-Cuartas J. C., Müller V, **Forero-Romero** J. E., MNRAS, 417, 1303, 2011

6 `CLARA`*'s view on the escape fraction of Lyman-α photons in high redshift galaxies* **Forero-Romero** J.E., Yepes G., Gottlöber S., Knollmann S., Cuesta A., Prada F., MNRAS, 415, 3666, 2011

5 *Bullet Clusters in the MareNostrum Universe.* **Forero-Romero** J.E., Yepes G., Gottlöber S., ApJ, 725, 1, 2010.

4 *Simulated vs. observed UV emission at high redshift: a hint for a clumpy ISM?* . **Forero-Romero** J.E., Yepes G., Gottlöber S., Knollmann S., Khalatyan A., Cuesta A., Prada F., MNRAS Letters, 403, L31-L35, 2010

3 *The coarse geometry of merger trees in ΛCDM.* **Forero-Romero** J.E., MNRAS, 399, 762-768, 2009

2 *A Dynamical Classification of the Cosmic Web.* **Forero-Romero** J.E., Hoffman Y., Gottloeber S., Klypin A., Yepes G., MNRAS, 396, 1815-1824, 2009

1 LeMoMaF*: Lensed Mock Map Facility.* **Forero-Romero** J.E., Blaizot J., Devriendt J., Van Waerbeke L., Guiderdoni B., MNRAS, 379. 1507-1518, 2007

Non refereed

1 *Visualising Matter and Cosmologies: an Example Based on a Transhistorical Approach*, Lucia Ayala, Jaime E. Forero-Romero, Column 7, pp. 76-82 (2011)

Selected Talks

- 2014, *The Local Group in the Cosmic Web*, 11th Potsdam Thinkshop on Satellite Galaxies and Dwarfs in the Local Group, Potsdam.

- 2013, *Física fundamental y astronomía: conexión a través de la formación de galaxias*, Colombian Physics Conference, Colombia

- 2013, *Stochasticity in high-z dwarf galaxies*, Extragalactic Group Seminar, PUC, Santiago

- 2012, *New Topics on High-z Galaxy formation*, Cosmology Group Seminar, MPA, Garching

- 2012, *Towards a panchromatic picture of high-z galaxies*, Cosmology Group Seminar, Stanford

- 2011, *Building a panchromatic model of high-z galaxies*, Second Workshop on Numerical and Observational Astrophysics: From the First Structures to the Universe Today, Institute for Astronomy and Space Physics (IAFE), Buenos Aires.

- 2011, *Expanding universes: the evolution of numerical simulations in physical cosmology*, Computer Simulations and the Changing Face of Scientific Experimentation, University of Stuttgart, Stuttgart.

- 2011, *Towards a panchromatic model of high-z galaxies*, First Galaxies, Ringberg Castle, Munich.

- 2011, *Spectral and physical properties of high-z galaxies*, Bridging Electromagnetic Astrophysics and Cosmology with Gravitational Waves, Milano.

- 2009 *Understanding High-z Lyman Alpha Emitters*, Fall Meeting German Astronomical Society, Potsdam

- 2009 *The Milky Way in the Semi-Analytic Context*, Open Problems in Galaxy Formation, Potsdam

- 2008 *IR and submm galaxies in Semi-Analytic Models of Galaxy Formation*, Mexican Congress of Astronomy and Astrophysics, Mexico City

- Since 2006, different seminars at Max Planck Institute for Astrophysics, University of British Columbia, Marseille Observatory, Hebrew U. of Jerusalem, U. Nacional Autónoma de México, U. de Antioquia (Colombia), Observatorio Astronómico Nacional (Colombia), U. Nacional de Colombia, U. de los Andes (Colombia), New Mexico State U., Arizona State U., Columbia U., Princeton U., Harvard U., UC Berkeley, UC Santa Cruz, Pontificia Universidad Catolica (Chile), Universidad de Chile.

Art & Science

- 2012: Founding member and organizer of the Art and Science Meetings (Encuentros de Arte y Ciencia) in Bogotá.

- 2011: *Fluid Skies* secured funding for $\sim$ 50 KEuro to make the Carved Air exhibition (Berlin, 2012), print the exhibition catalog and prepare academic meetings on the scientific and historical concepts of the project. The sponsors were: Ernst Schering Foundation (Germany), University of California Institute for Research in the Arts (USA) and the Arts Council Korea (ARKO).

- Since 2011 member of the *Fluid Skies* collaboration together with Yunchul Kim (artist) and Lucia Ayala (Art Historian). *Fluid Skies* is a creative and research platform to explore the fluid materiality of the cosmos from the perspectives of astrophysics, art, history and philosophy.

- 2010, Talk on *Simulations of Large Scale Structure Evolution*, Institut für Raumexperimente - Olafur Eliasson Studio, Berlin.

Languages

Spanish (native), English (fluent), French (fluent), German (proficient)