

# Sebastián Bustamante Jaramillo

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*Curriculum Vitae*

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## GENERAL INFORMATION

**Name** Sebastián Bustamante Jaramillo.  
**Date of Birth** 20<sup>th</sup> June, 1990.  
**Place of Birth** Maceo - Antioquia.  
**Nationality** Colombian.  
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## Education

**2007-2012** **B.Sc. in Physics**, *Institute of Physics, Universidad de Antioquia*, Medellín, Colombia.

**Thesis** "The place of the Milky Way and Andromeda in the cosmic web".

**Description** This study is aimed to characterize the local environment of Local Group (LG)-like systems from dark matter simulations of the large-scale universe. Using two different types of simulations, a unconstrained simulation (Bolshoi project) and a set of constrained simulations (CLUES project), it is first constructed a LG-like sample based upon observational constrains on the kinematic properties and isolation criteria of the real LG and the results of the CLUES simulations. By using a tensorial scheme based upon the peculiar velocity field of dark matter, the V-web scheme, it is classified the local environment of each simulation. Finally, it has been found that LG-like systems lies preferentially in sheet-like regions, furthermore a significant environmental bias for the total mass and the specific energy. No correlations have been found for the specific angular momentum and other studied properties.

## Fields of Interest

Tropical Meteorology, moisture processes, circulation patterns.

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## Occupational and academic Experience

2013-Present Teacher, Geostrophic fluid dynamics, Oceanography, Universidad de Antioquia.

2013-Present Teacher, Introductory physics, Faculty of Engineering, Universidad de Antioquia.

2012 Teacher, Introductory physics for highschool Students, Universidad de Antioquia.

2009 Museum guide of Galileo interactive physics room, Museo Universitario de la Universidad de Antioquia.

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## Research and Professional Activities

- 2012-2013 **Moisture flux over Colombia in the period 1979-2009 using data from the ERA-Interim re-analysis**, Main researcher, Committee for Research Development (CODI), Universidad de Antioquia, Universidad Nacional de Colombia, sede Bogotá.
- 2010-2011 **Analysis of extreme climate events and Circulation patterns over Colombia using the regional climate model REMO**, Training student, Universidad de Antioquia.

## Conferences, schools and workshops attended

- 2012 **Regional WCRP/SPARC Workshop with focus on the Southern Hemisphere and South America.**, Universidad de Buenos Aires, November 26-27, Buenos Aires, Argentina.
- Poster: Moisture Flux across Northern of South America using ERA Interim data.
- 2012 **XI Meeting of teaching in science and mathematics.**, Universidad de Antioquia, Universidad EAFIT, April 19-20, Medellín, Colombia.
- 2011 **XI Colombian Congress of Meteorology.**, Universidad Nacional de Colombia, sede Bogotá, March 23-25, Bogotá, Colombia.
- 2008 **I Colombian Congress of Astronomy and Astrophysics.**, Universidad de Antioquia, Universidad EAFIT, August 19-20, Medellín, Colombia.

## Miscellaneous

- Computer Skills C, Linux, Mathematica, CDO, GrADS .
- Languages Spanish (native), English.

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## References

- **Jaime E. Forero-Romero** (*Advisor*)  
Professor and Researcher, Foundations and Teaching Group of Physics and Dynamical Systems, Atomic and Molecular Physics Group.  
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- **Isabel Cristina Hoyos Rincón** (*Advisor*)  
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