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### EDUCATION

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**2009**                      **Philosophy Doctor in Civil and Environmental Engineering - Hydrologic Sciences and Engineering**

Colorado State University, Fort Collins, CO, 80523, U.S.A.

*Characterization of the Scale Dependence and Scale Invariance of the Spatial Organization of Snow Depth Fields, and the Corresponding Topographic, Meteorologic, and Canopy Controls*

**2000**                      **Master of Science in Civil and Environmental Engineering – Water Resources Engineering**

Universidad de los Andes, Bogotá, Colombia

*Study of Hydrology and Climatology of Glaciated Watersheds: Hydrologic Modeling of the Nevado River Basin (Boyacá, Colombia)*

**1999**                      **Bachelor of Science in Civil Engineering**

Universidad de los Andes, Bogotá, Colombia

*Analysis of Correlations Between Macroclimatic Indices and Hydrologic Variables in Colombia*

### SCHOLARSHIPS AND AWARDS

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2008                      Borland Hydrology Professorial Graduate Student Scholarship, Colorado State University

2007                      Yevjevich Civil Engineering Graduate and Faculty Award, Colorado State University

2007                      Borland Advanced Graduate Student Scholarship, Colorado State University

2006                      Borland Advanced Graduate Student Scholarship, Colorado State University

2005                      Shrake-Culler Scholarship, Colorado State University

2004                      Whitney Borland Scholarship, Colorado State University

2003                      Hsieh Wen Shen Water Resources Graduate Award, Colorado State University

### RESEARCH EXPERIENCE

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**2002 - 08**                      **Research Assistant. Colorado State University, Fort Collins, CO, U.S.A.**

Advisor: Jorge A. Ramírez

Study of the topographic, meteorologic and canopy controls on the spatial scaling properties of snow depth fields using LIDAR measurements over 1-km<sup>2</sup> areas.

- 2006 - 07**                    **Research Assistant. Colorado State University, Fort Collins, CO, U.S.A.**  
 Advisor: Jorge A. Ramírez  
 Data acquisition and development of a long term hydrological and meteorological database for the continental United States.
- 1999**                        **Research Assistant. Universidad de los Andes, Bogotá, Colombia**  
 Advisor: Mario Díaz-Granados  
 Study of the hydrology and climatology of high-elevation watersheds with the influence of glacier melting in the Colombian Andes. Included the hydrologic modeling of the Nevado River basin, Boyacá, Colombia.
- 1998**                        **Undergraduate Research. Universidad de los Andes, Bogotá, Colombia**  
 Advisor: Mario Díaz-Granados  
 Study of correlations between macroclimatic indices such as the Southern Oscillation index (SOI) and Sea Surface Temperatures (SST), and streamflow and precipitation measurements in Colombia.

#### **PROFESSIONAL EXPERIENCE**

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- 2001 - 02**                    **Water Resources Engineer. Hidroestudios Ltda., Bogotá, Colombia**  
**Supervisor: Andres Hermida**  
*Hydraulic and hydrologic modeling of the storm water and sewer system of the city of Bogotá, Colombia, for the evaluation of the existing network.*
- 2000**                        **Water Resources Engineer. Gradex Ingeniería, Bogotá, Colombia**  
**Supervisor: Rafael Ortíz**  
*Hydraulic and hydrologic modeling using HEC-RAS and the Soil and Water Assessment Tool (SWAT) for design applications and water yields estimation.*

#### **TEACHING EXPERIENCE**

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- Fall 2007**                    **Teaching Assistant. Land Use Hydrology, Colorado State University**  
 Professor: Lee MacDonald
- Spring 2005**                **Instructor. Engineering Mechanics: Statics, Colorado State University**
- Summer 2003**              **Instructor. Engineering Mechanics: Dynamics, Colorado State University**
- 1999**                        **Teaching Assistant. Analysis of Water Resources Systems, Universidad de los Andes, Bogotá, Colombia**  
 Professor: Mario Díaz-Granados
- 1999**                        **Teaching Assistant. Ground Water Hydrology, Universidad de los Andes, Bogotá, Colombia**  
 Professor: Carlos Molano
- 1998**                        **Teaching Assistant. Hydrology, Universidad de los Andes, Bogotá, Colombia**  
 Professor: Mario Díaz-Granados

## FIELD EXPERIENCE

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- 2004 Cold Land Processes Experiment (CLPX) follow-up. CO
- 2003 NASA Cold Land Processes Experiment (CLPX). 20-25 February and 26-31 March. CO

## GRADUATE ADVISORS

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**Jorge A Ramírez**, Department of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado, U.S.A.

**Mario Díaz-Granados**, Department of Civil and Environmental Engineering, Universidad de los Andes, Bogotá, Colombia

## PUBLICATIONS

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### Peer-Reviewed Publications

- Trujillo, E., J. A. Ramírez, and K. J. Elder (2009), Scaling Properties and Spatial Organization of Snow Depth Fields in Sub-alpine Forest and Alpine Tundra, *Hydrol. Processes*, DOI: 10.1002/hyp.7270.
- Trujillo, E., J. A. Ramírez, and K. J. Elder (2007), Topographic, Meteorologic, and Canopy Controls on the Scaling Characteristics of the Spatial Distribution of Snow Depth Fields, *Water Resour. Res.*, 43, W07409, doi:10.1029/2006WR005317.

### Non-Peer Reviewed Publications

#### Theses

- Trujillo, E., Characterization of the Scale Dependence and Scale Invariance of the Spatial Organization of Snow Depth Fields, and the Corresponding Topographic, Meteorologic, and Canopy Controls, Ph.D. Dissertation, Colorado State University, Fort Collins, Colorado, 2009.
- Trujillo, E., Estudio de Hidrología y Climatología en Cuencas Nevadas: Modelación Hidrológica de la Cuenca del Río Nevado en Boyacá, Colombia (Study of Hydrology and Climatology of Glaciated Watersheds: Hydrologic Modeling of the Nevado River Basin in Boyacá, Colombia), Master of Science Thesis, Universidad de los Andes, Bogotá, Colombia, 1999.
- Trujillo, E., Análisis de Correlaciones entre Índices Macroclimáticos y Variables Hidrológicas en Colombia (Analysis of Correlations between Macroclimatic Indices and Hydrologic Variables in Colombia), Undergraduate Thesis, Universidad de los Andes, Bogotá, Colombia, 1998.

## CONFERENCE PRESENTATIONS AND PROCEEDINGS

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- Trujillo, E., and J. A. Ramírez (2009), Cellular Automata Model for Simulating Wind Transport of Snow and the Interaction with Topography and Alpine Vegetation, *Proc. AGU Hydrology Days 2009*, edited by J. A. Ramírez, Hydrology Days Publications, Fort Collins, CO. Poster presentation.
- Trujillo, E., J. A. Ramírez, and K. J. Elder (2008), Application of Synthetic Generation Techniques for Illustrating the Differences Between the Spatial Organization of Snow Depth Fields in Subalpine Forest and Alpine Tundra, *Proc. AGU Hydrology Days 2008*, edited by J. A. Ramírez, Hydrology Days Publications, Fort Collins, CO. Oral presentation.
- Trujillo, E., J. A. Ramírez, and K. J. Elder (2007), Differences Between the Spatial Organization of Snow Depth Fields in Sub-alpine Forest and Alpine Tundra, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract C21B-0464.

- Trujillo, E., J. A. Ramírez, and K. J. Elder (2007), Topographic, Meteorologic, and Canopy Controls on the Scaling Characteristics of the Spatial Distribution of Snow Depth Fields  
in:  
*Geophysical Research Abstracts*, Vol. 9, 10544, 2007. European Geosciences Union (EGU), Spring Meeting. Poster presentation.  
*Proc. AGU Hydrology Days 2007*, edited by J. A. Ramírez, Hydrology Days Publications, Fort Collins, CO. Oral presentation.
- Trujillo, E., J. A. Ramírez, and K. Elder (2006), Comparison of the Spatial Organization of Snow Depth Between a Forested Environment and an Alpine Environment, *Proc. AGU Hydrology Days 2006*, edited by J. A. Ramírez, Hydrology Days Publications, Fort Collins, CO. Oral presentation.
- Trujillo, E., J. A. Ramírez, and K. Elder (2006), Spatial Scaling Characteristics of Snow Depth, *Proc. AGU Hydrology Days 2006*, edited by J. A. Ramírez, Hydrology Days Publications, Fort Collins, CO. Oral presentation.
- Trujillo, E., J. A. Ramírez, and K. Elder (2005), Analysis of the Spatial Scaling Characteristics of Snow Depth, *Eos Trans. AGU*, 86(52), Fall Meet. Suppl., Abstract H33E-1427. Poster presentation.
- Trujillo-Gómez, E., J. A. Ramírez, and K. Elder (2005), Analysis of the Scaling Characteristics of Snow Depth in the Colorado Rocky Mountains, *Proc. AGU Hydrology Days 2005*, edited by J. A. Ramírez, Hydrology Days Publications, Fort Collins, CO. Oral presentation.
- Trujillo, E., and M. Díaz-Granados (2000), Hidrología de Cuencas Nevadas: Modelación de la Cuenca del Río Nevado en la Sierra Nevada del Cocuy y Güicán (Hydrology of Glaciated Watersheds: Hydrologic Modeling of the Nevado River Basin in Sierra Nevada del Cocuy y Güicán), *Memorias XIV Seminario Nacional de Hidráulica e Hidrología 2000*, Villa de Leyva, Colombia, Sociedad Colombiana de Ingenieros.

## PROFESSIONAL AFFILIATIONS

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Member of the American Geophysical Union (AGU)

Member of the American Society of Civil Engineers (ASCE)

## JOURNAL REVIEWS

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Water Resources Research

Journal of Water Resources Planning and Management