

Name	Santiago Andrés Triana
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Visa / Nationality	U. S. Permanent Resident, Colombian
Occupational Field	Physicist

Work experience

December 2010 - Present	Postdoctoral Researcher
Activities	Develop software and hardware control systems for the 3-meter Sodium Geodynamo Experiment; conduct experimental runs, perform data analysis and write scientific reports.
Organization	Institute for Research in Electronics and Applied Physics (IREAP), University of Maryland, College Park, MD 20742, USA
January 2002 - November 2010	Graduate Research Assistant
Activities	Designed and built the 3-meter Sodium Geodynamo Experiment; performed a complete hydrodynamical characterization, reported scientific results in peer-reviewed journals.
Organization	Institute for Research in Electronics and Applied Physics (IREAP), University of Maryland, College Park, MD 20742, USA
August 2002 - December 2002	Graduate Teaching Assistant
Activities	In-class tutoring, grading for PHYS 276 "Experimental Physics II: Electricity and Magnetism."
Organization	Department of Physics, University of Maryland, College Park, MD 20742, USA
January 1996 - December 1996	Interactive Scientific Exhibit Designer & Guide
Activities	Design, construction and maintenance of modular, interactive science exhibits; guided visitors ages 5 to 12.
Organization	Museo de la Ciencia y el Juego, Universidad Nacional de Colombia, Bogotá, D. C., Colombia
January 1991 - December 1995	Rock Climbing Instructor
Activities	Taught basic climbing skills, safety techniques and training methods; organized outdoor climbing activities.
Organization	Mountaineering Club, Universidad Nacional de Colombia, Bogotá, D. C., Colombia

Education and training

2010	Ph. D. in Physics
Principal subject	Rotational fluid dynamics
Thesis title	Inertial waves in a laboratory model of the Earth's core.
Advisor	Professor Daniel P. Lathrop
School	University of Maryland
2000	B. Sc. in Physics
Principal subject	Chaos & dynamical systems
Thesis title	Dynamics of the δ -kicked alkali atom, Meritorious Mention.
Advisor	Professor Diógenes Campos
School	Universidad Nacional de Colombia

Personal skills

Languages English, native level proficiency; Spanish, mother tongue.

Technical skills Technical drawing, machining, gas metal arc welding, hazardous materials handling, heavy load rigging.

Computer skills 12+ years of experience on UNIX, GNU/Linux environments. Programming languages: Fortran, C, Python. Data acquisition/analysis: LabView, MATLAB, Spyder. Other: Mathematica, Arduino and Maple microcontrollers IDE's.

Publications

Conference proceedings

D. S. Zimmerman, **S. A. Triana**, D. R. Sisan, W. A. Tillotson, W. Dorland, and D. P. Lathrop.

Characterization of the magneto-rotational instability from a turbulent background state.

AIP Conference Proceedings, 733(1):13–20, 2004

S. A. Triana, D. H. Kelley, D. S. Zimmerman, D. Sisan, and D. P. Lathrop.

Hopf bifurcations with fluctuating gain.

Astronomische Nachrichten, 329(7):701–705, 2008

Peer reviewed

S. A. Triana and D. Campos.

The classical Sinai billiard.

Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales, 23(87):61–71, 1999

D. H. Kelley, **S. A. Triana**, D. S. Zimmerman, B. Brawn, D. P. Lathrop, and D. H. Martin.

Driven inertial waves in spherical Couette flow.

Chaos, 16(4), 2006

D. H. Kelley, **S. A. Triana**, D. S. Zimmerman, A. Tilgner, and D. P. Lathrop.

Inertial waves driven by differential rotation in a planetary geometry.

Geophysical and Astrophysical Fluid Dynamics, 101(5-6):469–487, 2007

D. H. Kelley, **S. A. Triana**, D. S. Zimmerman, and D. P. Lathrop.

Selection of inertial modes in spherical Couette flow.

Physical Review E, 81(2, Part 2), 2010

D. S. Zimmerman, **S. A. Triana**, and D. P. Lathrop.

Bi-stability in turbulent, rotating spherical Couette flow.

Physics of Fluids, 23(6), 2011

H. Matsui, M. Adams, D. H. Kelley, **S. A. Triana**, D. S. Zimmerman, B. A. Buffett, and D. P. Lathrop.

Numerical and experimental investigation of shear-driven inertial oscillations in an Earth-like geometry.

Physics of the Earth and Planetary Interiors, doi:10.1016/j.pepi.2011.07.012, 2011.

In press

M. Rieutord, **S. A. Triana**, D. S. Zimmerman, and D. P. Lathrop.

On the excitation of inertial modes in a spherical Couette flow.

Physical Review E.

Submitted

S. A. Triana, D. S. Zimmerman, and D. P. Lathrop.
Precessional states in a laboratory model of the Earth's core.
Journal of Geophysical Research - Solid Earth.
Submitted

Colloquiums

Precession and inertial waves in an experimental model of the Earth's core. *Department of Physics Colloquium, Universidad de los Andes*. Bogotá D. C., Colombia, August 8, 2011.

Precession and inertial waves in an experimental model of the Earth's core. *National Astronomical Observatory, Universidad Nacional de Colombia*. Bogotá, D. C., Colombia, August 10, 2011.

Contributed talks

Laboratory experiments on liquid metal spherical-Couette flows. *58th Annual Meeting of the APS Division of Fluid Dynamics*. Chicago, IL., November 21, 2005.

Liquid metal flow in a spherical shell: Recent results. *GSNP student talk finalist, APS March Meeting*. Denver, CO., 2007.

Spherical-Couette flow in a 3-meter diameter system. *Applied Dynamics Seminar, IREAP, University of Maryland*. College Park, MD., November 20, 2008.

Spherical-Couette flow in a 3-meter diameter system. *61st Annual Meeting of APS Division of Fluid Dynamics*. San Antonio, TX., November 23, 2008.

Precession in a laboratory model of the Earth's core. *Graduate Student Seminar, IREAP, University of Maryland*. College Park, MD., April 29, 2009.

Laboratory models of geophysical and astrophysical flows. *2010 Joint Research Symposium, Burgers Program for Fluid Mechanics*. College Park, MD., May 28, 2010.

Inertial waves in a laboratory model of the Earth's core. *Graduate Student Seminar, IREAP, University of Maryland*. College Park, MD., November 19, 2010.

Precessional states in a laboratory model of the Earth's core. *63rd Annual Meeting of APS Division of Fluid Dynamics*. Long Beach, CA., November 21, 2010.

Posters

Precession in a Laboratory Model of the Earth's Core. *2009 American Geophysical Union Fall Meeting*. San Francisco, CA., December 16, 2009.

Precessional States in a Laboratory Model of the Earth's Core. *2010 American Geophysical Union Fall Meeting*. San Francisco, CA., December 16, 2010.

Additional Information

Memberships

American Physical Society (APS), American Geophysical Union (AGU)

Other interests

Stereoscopic and time-lapse photography, rock climbing & mountaineering.

References

Professor Daniel P. Lathrop. *Director, Institute for Research in Electronics and Applied Physics (IREAP), University of Maryland*. Phone +1 (301) 405-1594, e-mail: lathrop@umd.edu.

Professor Henri-Claude Nataf. *Directeur de Recherche 1^{ère} classe, CNRS. Laboratoire de Géophysique Interne et Tectonophysique (LGIT), Université Joseph-Fourier*. Phone +33 4 76 63 51 77, e-mail: henri-claude.nataf@ujf-grenoble.fr.

Professor Guido Pupillo. *Institut de Science et d'Ingénierie Supramoléculaires, Université de Strasbourg*. Phone +33 3 68 85 52 33, e-mail: pupillo@unistra.fr.