

Santiago José BENAVIDES

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Dated: June 11, 2020

EDUCATION

Massachusetts Institute of Technology (MIT)

PhD candidate, Department of Earth, Atmospheric and Planetary Sciences

Focus: Nonlinear Dynamics in Geosciences

Advisors: Glenn R. Flierl & J. Taylor Perron

2016-Present

Current GPA: 4.9/5

École Normale Supérieure (ENS) rue d'Ulm, Paris, France

Masters in Macroscopic Physics and Complexity

Advisor: Alexandros Alexakis

2015-2016

mention *Très Bien*

The University of Texas at Austin

Bachelor of Science in Physics (Option: Honors Physics)

Bachelor of Science in Mathematics (Option: Honors Mathematics)

Dean's Scholars Honors Program

Graduation Distinction: Dean's Honored Graduate (Top 1%) and Highest Honors (Top 4%)

2010-2015

GPA: 3.9628/4

PUBLICATIONS

Benavides, S. J., Burns, K. J., & Flierl, G. R., "Rotating magnetohydrodynamic turbulence in the presence of a background magnetic field," (*In Preparation*).

Benavides, S. J., Flierl, G. R., & Burns, K. J., "Complex behavior in two-dimensional, three-component turbulence with rotation," (*In Preparation*).

Benavides, S. J., Deal, E., Perron, J. T., Rushlow, M., & Venditti, J. G., "Sediment entrainment dynamics from intermittent bedload time series," (*Submitted*). Poster:

<https://www.essoar.org/doi/10.1002/essoar.10500386.1>

Alexakis, A., Pétrélis, F., **Benavides, S. J.**, & Seshasayanan, K., "Phase transitions in turbulence and the multiplicative-noise universality class," (*Submitted*).

Benavides, S. J., & Flierl, G. R., "Two-dimensional, partially-ionized, magnetohydrodynamic turbulence," *Journal of Fluid Mechanics* (*Accepted*). <https://arxiv.org/abs/1911.09679>

Benavides, S. J., & Alexakis, A., "Critical transitions in thin layer turbulence," *Journal of Fluid Mechanics*, Volume 822, pg. 364-385 (2017). <https://doi.org/10.1017/jfm.2017.293>

Mentioned in feature article: Ecke, R. E. "From 2D to 3D in Fluid Turbulence: Unexpected Critical Transitions." *Journal of Fluid Mechanics*, Volume 828, pg. 1-4 (2017).

<https://doi.org/10.1017/jfm.2017.507>

Seshasayanan, K., Benavides, S. J., & Alexakis, A., "On the edge of an inverse cascade," *Phys. Rev. E*. Volume 90, 051003(R) (2014). <http://dx.doi.org/10.1103/PhysRevE.90.051003>

SCIENTIFIC EXPERIENCE

Participant in summer school at the Center for Computational Astrophysics

The Flatiron Institute (Simons Foundation), New York, New York

Theme: "Multiscale Modeling of Astrophysical and Space Plasmas" **Summer 2019**

Participant and speaker at workshop of Les Houches School of Physics

Theme: "New Challenges in Turbulence Research V" **April 2019**

Guest Student at Geophysical Fluid Dynamics Summer School

WHOI, Woods Hole, Massachusetts

Theme: Atmosphere, Ocean, and Climate Fluid Dynamics **Summer 2014**

TEACHING EXPERIENCE

Mentor for MIT's Undergraduate Research Opportunities Program

Directly mentoring two undergraduates on research projects collaboration **Summer 2020**

Teaching Assistant at Massachusetts Institute of Technology

12.820: "Turbulence in the Atmosphere and Ocean" (Graduate Course) **Spring 2020**

Teaching Assistant at Massachusetts Institute of Technology

12.800: "Fluid Dynamics of the Atmosphere and Ocean" (Graduate) **Fall 2019**

Overall rating in subject evaluation: 6.7/7.

Undergraduate Teaching Assistant at the University of Texas at Austin

P S 303: "Introductory Physical Science I: Mechanics and Heat." **Fall 2013**

SERVICES AND OUTREACH

Member of Graduate Student Advisory Committee (GSAG)

to the faculty search committee **Spring 2020**

Member of the Diversity Council (EAPS, MIT)

Department-wide committee, including faculty and staff **Fall 2019 – Present**

Host/Organization of Student Seminar (EAPS, MIT)

Department wide, weekly seminar for students **Fall 2018-Spring 2020**

HONORS AND AWARDS

MIT

Jule Charney Prize (\$12,000)
Robert R Shrock Graduate Fellowship (\$78,350)

2016-2019
2016

ENS

ENS-ICFP Scholarship (\$10,000)

2015-2016

ADDITIONAL SKILLS

Programming: Python, Fortran, git. Languages: Spanish (fluent), French (fluent, but limited)