

Santiago José BENAVIDES

s-benavides.github.io

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Dated: October 14, 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-(2021, expected)

Current GPA: 4.9/5

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

Masters ENS-ICFP 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., Gallet, B., & Flierl, G. R., "Inverse cascade suppression and shear layer formation in MHD turbulence subject to a strong background magnetic field and misaligned global rotation," (*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., Rushlow, M., Venditti, J. G., Zhang, Q., Kamrin, K., & Perron, J. T., "Sediment entrainment dynamics from intermittent bedload time series," (*Submitted to Nature Geoscience*).

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

Alexakis, A., Pétrélis, F., **Benavides, S. J.**, & Seshasayanan, K., "Symmetry breaking in a turbulent environment," (*Submitted*).

Benavides, S. J., & Flierl, G. R., "Two-dimensional partially ionized magnetohydrodynamic turbulence," *Journal of Fluid Mechanics*. Volume 900, A28, (2020). <https://doi.org/10.1017/jfm.2020.500>

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, France

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

HONORS AND AWARDS

Future Investigators in NASA Earth

2020-2021

and Space Science and Technology (FINESST) fellowship (\$45,000)

MIT

Jule Charney Prize (\$12,000)

2016-2019

Robert R Shrock Graduate Fellowship (\$78,350)

2016

ENS

ENS-ICFP Scholarship (\$10,000)

2015-2016

TEACHING EXPERIENCE

Mentor for MIT's Undergraduate Research Opportunities Program

Directly mentoring two undergraduates on original research projects

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

Creator and runner of Student Seminar (EAPS, MIT)

Department wide, weekly seminar for students

Fall 2018-Spring 2020

ADDITIONAL SKILLS

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