

**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)

Overall rating in subject evaluation: 6.7/7.

**Fall 2019**

**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)

**2016-2019**

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

**2016**

**ENS**

ENS-ICFP Scholarship (\$10,000)

**2015-2016**

## **ADDITIONAL SKILLS**

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