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Bia Villas Bôas

Education

2014–2020 | **Ph.D. in physical oceanography**, Scripps Institution of Oceanography.

2012–2014 | **MSc. in physical oceanography**, University of São Paulo.

2007–2011 | **BSc. in physics**, Federal University of Rio Grande do Norte.

Research Experience

2020 | **Postdoctoral Scholar - SIO**
My postdoc at Scripps focuses on understanding the role of surface waves in modulating signals detected by the upcoming SWOT mission and evaluating how surface waves can be used to improve understanding of upper ocean currents.

2014–2020 | **Graduate Student Researcher - SIO**
Dissertation title: *Wind, wave, and current interactions.* Advisors: Sarah Gille, Matthew Mazloff, and Bruce Cornuelle.

2012–2014 | **Graduate Student Researcher - IOUSP**
Masters student at the Oceanographic Institute of the University of São Paulo (IOUSP) working on air–sea interactions at mesoscales. Title of the project: ***"The contribution of mesoscale eddies to the surface heat budget in the South Atlantic"***, funded by the São Paulo Research Foundation (FAPESP)

2013 | **Visiting Research Student - LEGOS**
Visiting research student at the *Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS)*, Toulouse, France. Working on the identification of mesoscale eddies and eddy dynamics under the supervision of Dr. Alexis Chaigneau. This work was funded by the Research Internships Abroad (BEPE) program from the the São Paulo Research Foundation (FAPESP). Title of the project: ***"The methods of identifying mesoscale eddies from satellite altimetry data"***.

2011 | **Undergraduate Student Researcher - UFRN**
Undergraduate research project at the Federal University of Rio Grande do Norte (UFRN), working on the dynamics of well-mixed estuaries.

Publications

Ana B. Villas Bôas, Sarah T. Gille, Matthew R. Mazloff, Bruce D. Cornuelle, and Fabrice Ardhuin. Wave-current interactions at meso and submesoscales: Insights from idealized numerical simulations. *Journal of Physical Oceanography*, 2020. doi: 10.1175/JPO-D-20-0151.1

Ana B. Villas Bôas and W. R. Young. Directional diffusion of surface gravity wave action by ocean macroturbulence. *Journal of Fluid Mechanics*, 890:R3, 2020. doi: 10.1017/jfm.2020.116

Sophia Merrifield, Eric Terrill, Travis Schramek, Sean Celona, **Ana B. Villas Bôas**, and Patrick Colin. Typhoon-forced waves around a western pacific island nation. *Oceanography*, 33, 2019. doi: 10.5670/oceanog.2019.411

Ana B. Villas Bôas, Fabrice Ardhuin, Ernesto Rodriguez, Christine Gommenginger, et al. Integrated observations of global surface winds, currents, and waves: requirements and challenges for the next decade. *Frontiers in Marine Science*, 2019. doi: 10.3389/fmars.2019.00425

Sarah Gille, Ryan Abernathey, Teresa Chereskin, Bruce Cornuelle, Heimbach Patrick, Matthew Mazloff, Cesar Rocha, Saulo Soares, Maike Sonnewald, **Ana B**. **Villas Bôas**, and Jinbo Wang. Open Code Policy for NASA Space Science: A perspective from NASA-supported ocean modeling and ocean data analysis. White Paper on Best Practices for a Future Open Code Policy for NASA Space Science, National Academy of Sciences, Washington, DC., 2018

Ana B. **Villas Bôas**, Sarah T. Gille, Matthew R. Mazloff, and Bruce D. Cornuelle. Characterization of the deep water surface wave variability in the California Current Region. *Journal of Geophysical Research: Oceans*, 122(11):8753–8769, 2017. ISSN 2169-9291. doi: 10.1002/2017JC013280

Ana B. Villas Bôas, Olga T Sato, Alexis Chaigneau, and Guilherme P Castelão. The signature of mesoscale eddies on the air-sea turbulent heat fluxes in the south atlantic ocean. *Geophysical Research Letters*, 42(6):1856–1862, 2015. doi: 10.1002/2015GL063105

Guilherme P Castelão, Luiz C Irber, and **Ana B. Villas Bôas**. An objective reference system for studying rings in the ocean. *Computers & Geosciences*, 61:43–49, 2013. doi: 10.1016/j.cageo.2013.07.004

Fellowships and Awards

2018 **Fellow of the Planetary Boundary Layers in Atmospheres, Oceans, and Ice on Earth and Moons Program** – The Kavli Institute for Theoretical Physics, University of California, Santa Barbara

2017 **NASA Earth and Space Science Graduate Fellowship** – Awarded by the National Aeronautics and Space Administration

2017 **Outstanding Mentor Award** – Awarded by Scripps Institution of Oceanography for guidance, leadership, and unwavering commitment to helping fellow students

2014 **T.R. and Edith Folsom Endowed Graduate Fellowship Fund** – Awarded by Scripps Institution of Oceanography

Service

2020	**Funding agency reviewer** – Panel reviewer for the National Aeronautics and Space Administration.
2020	**Session convener** – Convener of "*Wave Breaking in Ocean-Atmosphere Exchanges*" at the 2020 Ocean Sciences Meeting.
2018	**Session convener** – Convener of "*Integrated Observations and Modeling of Surface Currents, Waves, and Winds*" at the 2018 AGU Fall Meeting.
2016–present	**Journal Reviewer** – Reviewer for the Journal of Physical Ocenography, the Journal of Geophysical Research, Geophysical Research Letters, and Remote sensing of Environment.
2016–present	**Outreach** – Help lead various outreach activities at Scripps' Hydrolics Laboratory running demos in the wave tank.
2016–present	**Undergrad mentoring** – Mentor undergraduate research projects. I currently supervise students Roger Wu (Junior, Oceanic and Atmospheric Sciences Major) and Luke Colosi (Sophomore, Oceanic and Atmospheric Sciences Major).
2016–present	**Peer Mentor** – Mentor for first year PhD. students as part of the peer mentor program at Scripps Institution of Oceanography, San Diego, CA.
2016	**Student Committee Member** – Served as a member of the student committee for the observational physical oceanography faculty search at Scripps Institution of Oceanography

Teaching Experience

2019	**Programming with Python** - School of Global Policy and Strategy, UC San Diego.
2019	**"An impractical guide to surfing surface waves"** - Guest lecture for SIO90, UC San Diego.
2018	**Software and Data Carpentry Instructor** - Certified Software and Data Carpentry Instructor. I have taught several SWC workshops for a broad range of audiences, including the Scripps Undergraduate Research Fellowship (SURF) and the UC San Diego library.
2010	**Linear Algebra** - Teaching assistant for linear algebra – Federal University of Rio Grande do Norte, Natal, Brazil.
	Calculus II - Teaching assistant for calculus II – Federal University of Rio Grande do Norte, Natal, Brazil.

Computational skills

Operating Systems	Unix-based operating systems, command–line, Bash, and Shell-Script.
Programming Languages	Python, Fortran, and MatLab.
Tools and Software	LaTeX, VIM, Ansible, version control systems (Git, Mercurial), iPython notebooks, and Markdown.
Numerical Modeleing	WaveWatch III framework.

Languages

Portuguese:	Native language
English:	Full proficiency
Spanish:	Professional working proficiency
French:	Limited working proficiency

References

Dr. Sarah Gille:

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Dr. Bruce Cornuelle:

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