Cesar B. Rocha, Ph.D.

Curriculum Vitae

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Research Interests: observational and theoretical physical oceanography; geophysical fluid dynamics; mesoscale and submesoscale turbulence; internal waves.

Other Interests: long-form, literary journalism; science communication.

Professional Preparation

2018 **Ph.D.**, *Physical Oceanography*.
Scripps Institution of Oceanography, University of California San Diego.

2013 **M.S. (w/ honors)**, *Physical Oceanography*.
University of São Paulo, Brazil.

2011 **B.S. (w/ honors)**, *Oceanography*.
University of São Paulo, Brazil.

Emplyment History

Current **Postdoctoral Scholar**.
Woods Hole Oceanographic Institution.

2016–2018 **Graduate Writing Consultant**.
Writing + Critical Expression Hub, University of California San Diego.
Supervisor: Matthew Nelson.

2013–2018 **Graduate Student Researcher**.
Scripps Institution of Oceanography, University of California San Diego.
Advisor: William R. Young.

Awards

Fellowships

2018 WHOI Postdoctoral Fellowship, Woods Hole Oceanographic Institution.

2016 NASA Earth and Planetary Sciences Graduate Fellowship.

2015 Geophysical Fluid Dynamics Fellowship, Woods Hole Oceanographic Institution.

2011 Master's Research Fellowship, Fundação de Amparo à Pesquisa do Estado de São Paulo.

2010 Undergraduate Research Fellowship, Fundação de Amparo à Pesquisa do Estado de São Paulo.

Honors

2011 Best Honors Thesis, Oceanographic Institute, University of Sao Paulo

Other Awards

2017 French-American Doctoral Exchange Program Laureate, Embassy of France in the USA

Publications

Journal Articles

[1] **Cesar B Rocha**, Gregory L Wagner, and William R Young. Stimulated generation: extraction of energy from balanced flow by near-inertial waves. *Journal of Fluid Mechanics*, 847:417–451, 2018.

[2] Fabrice Ardhuin, Sarah T Gille, Dimitris Menemenlis, **Cesar B Rocha**, Nicolas Rascle, Bertrand Chapron, Jonathan Gula, and Jeroen Molemaker. Small-scale open-ocean currents have large effects on wind-wave heights. *Journal of Geophysical Research: Oceans*, 2017.

[3] **Cesar B Rocha**, William R Young, and Ian Grooms. On Galerkin approximations of the surface active quasigeostrophic equations. *Journal of Physical Oceanography*, 46(1):125–139, 2016.

[4] **Cesar B Rocha**, Sarah T Gille, Teresa K Chereskin, and Dimitris Menemenlis. Seasonality of submesoscale dynamics in the Kuroshio Extension. *Geophysical Research Letters*, 43(21), 2016.

[5] **Cesar B Rocha**, Teresa K Chereskin, Sarah T Gille, and Dimitris Menemenlis. Mesoscale to submesoscale wavenumber spectra in Drake Passage. *Journal of Physical Oceanography*, 46(2):601–620, 2016.

[6] **Cesar B Rocha**, Ilson CA Silveira, Belmiro M Castro, and Jose Antonio M Lima. Vertical structure, energetics, and dynamics of the Brazil Current System at 22 S–28 S. *Journal of Geophysical Research: Oceans*, 119(1):52–69, 2014.

[7] **Cesar B Rocha**, Amit Tandon, Ilson CA Silveira, and Jose Antonio M Lima. Traditional quasi-geostrophic modes and surface quasi-geostrophic solutions in the Southwestern Atlantic. *Journal of Geophysical Research: Oceans*, 118(5):2734–2745, 2013.

Select Seminars

2017 **Laboratoire Météorologie Dynamique Seminar Series**, *École Normale Supérieure*, Paris, France, "Stimulated generation of near-inertial waves".

2017 **Physical Oceanography Seminar Series**, *CICESE*, Ensenada, Mexico, "Stimulated generation of near-inertial waves".

2015 **Oceans and Cryosphere Seminar Series**, *JPL/CalTech*, Pasadena, CA, "Drake Passage wavenumber spectra".

Select Talks

2018 **Ocean Sciences Meeting**, Portland, OR, "Stimulated generation: extraction of energy from balanced flow by near-inertial waves".

2017 **French-American Doctoral Exchange Program, European Institute for Marine Studies**, Brest and Villefranche-sur-Mer, France, "Macroturbulence and internal waves in the upper ocean".

2014 **AGU Fall Meeting**, San Francisco, CA, "Drake Passage upper-ocean spectra".

Select Posters

2017 **French–American Doctoral Exchange Program, Mediterranean Institute of Oceanography**, Marseille, France, "Stimulated generation of near-inertial waves".

2017 **Munk Symposium on Turbulence, Internal Waves, and the Overturning Circulation of the Ocean**, La Jolla, CA, "Near-inertial waves extract energy from barotropic quasi-geostrophic flow".

Service

2018 **Ad hoc referee of journal articles**, Journal of Geophysical Research–Oceans; Journal of Physical Oceanography; Journal of Atmospheric and Oceanic Technology; Geophysical Research Letters.

2017 **Ad hoc referee of journal articles**, Journal of Geophysical Research–Oceans; Journal of Physical Oceanography; Journal of Fluid Mechanics.

2017 **Member of student committee**, SIO teaching award.

2016 **Ad hoc referee of journal articles**, Deep-Sea Research–I; Journal of Fluid Mechanics; Nature Communications; Journal of Geophysical Research–Oceans; Ocean Modelling; Geophysical Research Letters.

2016 **Member of student committee**, SIO faculty search in large-scale observational physical oceanography; Teaching award.

Mentees

2018–2018 **Thomas Bossy**, *University of California San Diego*.
Intern from ENS Lyon (faculty advisor at SIO: William R. Young).
Role: co-advised the student on his research project, particularly setting up computational simulations of horizontal convection.

2015–2016 **Momme Hell**, *University of California San Diego*, Peer-mentoring program.
SIO Ph.D student.
Role: assisted the student navigate the first year of graduate school, particularly hepling him tailor his coursework and choosing an advisor.

Software

The codes are open source, written in Python, and distributed under the MIT license.

`niwqg` QG-NIW coupled model in Python, `https://github.com/crocha700/niwqg`

`pyqg` Python Quasigeostrophic Model, `http://pyqg.readthedocs.io`

`pyspec` Spectral Analysis in Python, `https://github.com/pyspec/pyspec`