



Tiago Carrilho Biló

Assistant Scientist



02 March 1990



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About me

I am an assistant scientist at the Cooperative Institute For Marine And Atmospheric Studies (CIMAS), University of Miami/NOAA, United States. My research interests include, but are not limited to: How energy, mass, and seawater properties are transported and modified by large and mesoscale processes, deep ocean circulation, ocean dynamics, and variability of the Atlantic Meridional Overturning Circulation. As a physical oceanographer, I try implementing the best tools to answer specific scientific questions (ocean *in-situ* observations, remote sensing, modeling, and theory). However, my research approach is primarily based on *in-situ* moored observations.

Besides conducting my own research, I am an education enthusiast and try to get involved in as many teaching and mentoring activities as possible.

Skills and Expertise

Physical Oceanography* Ocean Currents and Circulation* Data Analysis* Oceanographic Instrumentation* Geophysical Fluid Dynamics* Coding (Python, Matlab, Fortran, LaTeX)* Scientific Teaching*

Professional Experience

- 2022-Present Assistant Scientist Cooperative Institute For Marine And Atmospheric Studies, University of Miami, US, based at AOML-NOAA
- 2020-2022 Postdoctoral Scholar Scripps Institution of Oceanography, University of California San Diego, US
Supervisor: Dr. Fiammetta Straneo

Education

- 2015-2020 Ph.D. student in Meteorology and Physical Oceanography
Ph.D. Dissertation: "Pathways of the North Atlantic Deep Water in the North Atlantic subtropics: structure and recirculation dynamics"
Rosenstiel School of Marine and Atmospheric Science, University of Miami, US
- 2013-2015 M.Sc. student in Oceanography
M.Sc. Thesis: "The changing Brazil Current system between 23°S-31°S: vertical structure and mesoscale dynamics"
University of São Paulo, Brazil
- 2008-2012 B.Sc. student in Oceanography
B.Sc. Thesis: "On the Brazil Current System in the Santos Bifurcation area (25°S): Direct velocity measurements"
University of São Paulo, Brazil

Teaching and Mentoring Experience

- Summer 2022 SIO30 - The Oceans Instructor
University of California San Diego, US
- Spring 2022 SIO90 - Undergrad Seminar and SIO-176 - Observational Physical Oceanography Guest Lecturer
University of California San Diego, US
- Spring 2021 SIO-176 - Observational Physical Oceanography Guest Lecturer
University of California San Diego, US
- 2013-2014 Introduction to Matlab Instructor
One week course during the 2013 and 2014 Oceanographic Week (STO) at University of São Paulo, Brazil

As a Postdoctoral Scholar at University of California San Diego, I co-mentored three undergraduate research projects. During my M.Sc. and Ph.D. periods, I had the opportunity to be a Teaching Assistant for three undergraduate-level courses and one graduate-level course at the University of Miami.

Field Experience

- OSNAP Project Research Cruises AR30-04 and DY053
Chief Scientists: Dr. William Johns and Dr. Stuart Cunningham
Moorings and CTD/LADCP operations
- MOCHA Project Research Cruises AE1833, and AB1705
Chief Scientist: Dr. William Johns
Moorings and CTD/LADCP operations
- CERES Experiment Research Cruises CERES V (leg 3) and CERES IV
Chief Scientist: Dr. Ilson Carlos A. da Silveira and Dr. Wellington Ceccopieri Belo
Instruments (XBT, CTD, ADCP, and LADCP) operations, near-real time data processing, and adaptive sampling
- AMBES Experiment Research Cruise AMB09
Chief Scientist: Dr. Ilson Carlos A. da Silveira
Near-real time data processing and adaptive sampling



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Publications

Articles in Journals

Le Bras, I A-A; Callies, J; Straneo, F; Biló, T C; Holte, J; Johnson, H L, 2022: "Slantwise convection in the Irminger Sea", *Journal of Geophysical Research: Oceans*, doi: 10.1029/2022JC019071

Biló, T. C.; Straneo, F; Holte, J; Le Bras, I A-A, 2022: "Arrival of New Great Salinity Anomaly Weakens Convection in the Irminger Sea", *Geophysical Research Letters*, doi: 10.1029/2022GL098857

Desbruyeres, D. G.; Bravo, E P; Thierry, V; Mercier, H; Pascale, L; Cécile, C; Biló, T C; Fried, N; De Jong, M F, 2022: "Warming-to-Cooling Reversal of Overflow-Derived Water Masses in the Irminger Sea During 2002–2021", *Geophysical Research Letters*, doi: 10.1029/2022GL098057

Biló, T. C.; Johns, W. E; Zhao, J., 2021: "Dynamics of deep recirculation cells offshore of the Deep Western Boundary Current in the subtropical North Atlantic (15°–30°N)", *Journal of Physical Oceanography*, doi:10.1175/JPO-D-20-0184.1

Biló, T. C.; Johns, W. E., 2020: "The Deep Western Boundary Current and adjacent interior circulation at 24–30°N: Mean structure and mesoscale variability", *Journal of Physical Oceanography*, doi: 10.1175/JPO-D-20-0094.1

Biló, T. C.; Johns, W. E., 2019: "Interior pathways of Labrador Sea Water in the North Atlantic from the Argo perspective", *Geophysical Research Letters*, doi: 10.1029/2018GL081439

Biló, T. C.; da Silveira, I. C. A., Belo, W. C., Castro, B. M., Piola, A. R., 2014: "Methods for estimating the velocities of the Brazil Current in the pre-salt reservoir area off southeast Brazil (23°S–26°S)", *Ocean Dynamics*, doi: 10.1007/s10236-014-0761-2

Datasets

Biló, T. C. 2019: "North Atlantic Observed Climatological Mean Absolute Geostrophic Velocity Profiles" [Data set], doi: 10.17604/cf5z-x124.

Straneo, F; Torres, D.; Bahr, F.; Holte, J.; Biló, T. C., 2021: "Water temperature, salinity, and velocity collected by CTD, ADCP, and current meters from OSNAP East moorings CF1 - CF7 in the Irminger Sea from 2016-08-16 to 2020-07-17" [Data set], NCEI Accession 0226020, NOAA National Centers for Environmental Information, <https://www.ncei.noaa.gov/archive/accession/0226020>.

Revisions

I acted as a reviewer for several journals and institutions including, but not limited to, the National Science Foundation, *Nature Geoscience*, *Progress in Oceanography*, *Deep Sea Research*, and *Journal of Geophysical Research: Oceans*.

International Conferences Attended

Oral Presentations

Biló, T. C., Straneo, F; Holte, J, 2022: "The East Greenland Coastal Current near Cape Farewell". In: *Arctic-Subarctic Ocean Fluxes, 2022*, Iceland.

Biló, T. C., Straneo, F; Holte, J; Le Bras, I A-A, 2022: "On the Recent Freshening of the Irminger Sea (2015-2020)". In: *Ocean Sciences Meeting, 2022*, Virtual Conference.

Biló, T. C., Johns, W. E., 2019: "Interior pathways of Labrador Sea Water in the North Atlantic from the Argo perspective". In: *EGU General Assembly, 2019*, Vienna.

Poster Presentations

Biló, T. C., Johns, W. E., 2020: "Deep Western Boundary Current variability at 26.5°N and its connection with local abyssal recirculation.". In: *Ocean Sciences Meeting, 2020*, San Diego.

Biló, T. C., Johns, W. E., 2018: "On the mean Deep Western Boundary Current recirculation in the North Atlantic subtropics: structure and forcing mechanisms". In: Ocean Sciences Meeting, 2018, Portland.

Biló, T. C., Silveira, I. C. A., Rocha, C. B., Belo, W. C., 2014: "ON THE BRAZIL CURRENT THICKENING IN SANTOS BASIN (23-28°S)". In: Ocean Sciences Meeting, 2014, Honolulu.

Biló, T. C.; Paloczy, A., Rocha, C. B., Silveira, I. C. A., Ceccopieri, W., 2012: "ON THE BRAZIL CURRENT SYSTEM OFF SOUTHEAST BRAZIL (22°S): TOP - BOTTOM DIRECT VELOCITY MEASUREMENTS". In: Ocean Sciences Meeting, 2012, Salt Lake City.