

Alma Carolina Castillo Trujillo

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- SUMMARY**
- PhD in Physical Oceanography with experience in numerical modeling, instrumentation and coastal and submesoscale ocean dynamics.
 - Excellent quantitative and analytical skills.
 - Excellent collaborative, writing and teaching skills.

- EDUCATION**
- University of Hawai‘i at Mānoa, Honolulu, Hawai‘i , USA**
- PhD Physical Oceanography 2014 – 2018
- Thesis: Ocean dynamics south shore of Oahu, Hawai‘i: From mean circulation to near-inertial waves and submesoscale processes. A set of High-Frequency Doppler Radars (HFDRs) and a regional circulation model (ROMS) were used to describe the interactions between near-inertial oscillations and lower-frequency currents. Generation of submesoscale eddies and their interactions with bathymetry were also explored.
 - Adviser: Pierre Flament
- Master of Science (M.S.) in Physical Oceanography 2011 – 2014
- Thesis: Low-frequency currents south shore of Oahu, Hawai‘i. Coastal circulation and its interactions with larger-scale dynamics using HFDRs.
 - Adviser: Pierre Flament
- Universidad Autónoma de Baja California, Ensenada, México**
- Bachelor of Science (B.S.) in Oceanography 2006 – 2010
- Minor in Physical Oceanography. Adviser: Rubén Castro
 - Cumulative GPA: 9.5 / 10.00

- RESEARCH AND PROFESSIONAL EXPERIENCE**
- Postdoctoral researcher**
- Scripps Institution of Oceanography, San Diego, CA. September 2018 - Present
- Ocean dynamics around and atop the Seychelles Plateau using a series of velocity, pressure and temperature sensors and a regional numerical model. Main topics include island dynamics, near-inertial oscillations and Equatorial dynamics. A regional numerical model (ROMS) was developed to understand the role of the larger-scale Indian Ocean circulation atop the Seychelles Plateau.
 - Supervisors: Sarah Giddings, Geno Pawlak
- Postdoctoral researcher** Mauka to Makai summer bridge program, Honolulu Hawai‘i. 2018 and 2019
- Lead instructor on a summer bridge program which aims to foster pathways between community colleges and UH Manoa in the geosciences.
 - Supervisors: Rosie Alegado, Michael Guidry and Margaret McManus
- Environment Statistics Internship**
- United Nations Headquarters, New York Summer 2017
- Elaboration of frameworks, concepts, methods, definitions and data compilation guidelines to support the development of environmental statistics and indicators for the East African Countries.
 - Supervisor: Reena Shah
- Graduate Research Assistant**
- University of Hawai‘i at Mānoa, Honolulu Hawai‘i. 2011–2014
- Development and maintenance of HFDR.
 - Supervisor: Pierre Flament

- ACADEMIC HONORS & AWARDS**
- Fulbright-García Robles Scholar** 2011 – 2013
- Scholarship to pursue a Physical Oceanography Master’s degree at University of Hawai‘i at Mānoa, Grant includes travel fees, tuition and monthly stipend over the duration of the 2-year Master’s program.

Python in Scientific Computing, UCAR	Apr 2015
Travel award to attend conference and tutorials in large-data analysis using Python.	
Chief Scientist training cruise UNOLS	Oct 2014
Scholarship to attend Chief Scientist Training cruise aboard the R/V Point Sur in Monterey Bay.	
Center for Climate Sciences, Summer School. JPL, NASA	May 2012
Travel grant to attend summer school; Using satellite observations to advance climate models.	

TEACHING EXPERIENCE

Software Carpentry Instructor,	2020
<ul style="list-style-type: none"> • Certified Software Carpentry Instructor • Topics: Python, Unix, Git 	
University of Hawai‘i at Mānoa,	
Earth System Science Databases Teaching Assistant	2015, 2017 and 2018
<ul style="list-style-type: none"> • Topics: Matlab, Data Analysis, Programing • Supervisor: Jim Potemra 	
Global Environmental Sciences (GES) Math teacher,	2016
<ul style="list-style-type: none"> • Math recitations teacher for GES major students • Topics: Pre-calculus, Calculus I and Calculus II • Supervisor: Michael Guidry 	
School of Ocean and Earth Science (SOEST) Tutor,	2015, 2016 and 2017
<ul style="list-style-type: none"> • Science Tutor for SOEST Undergrads students • Topics: Math, Physics and Computer programming • Supervisor: Leona Anthony 	

EXTRA CURRICULAR ACTIVITIES

MAILE Mentoring Bridge, SOEST	
Mentor undergrad students from the Hawaiian community	2015–2018
<ul style="list-style-type: none"> • Recruit and retain Native Hawaiian undergraduates in ocean, earth and environmental science fields and SOEST degree programs through effective, individualized mentoring. • Supervisors: Rosie Alegado, Barbara Bruno 	
Clubes de Ciencias, Harvard, MIT and CONACYT	
Expand access to science in Mexico through mentoring workshops.	2016 and 2020
<ul style="list-style-type: none"> • Mentor high-school and early undergrads in Mexico through summer workshops. 	

PUBLICATIONS

JOURNALS

A.C Castillo-Trujillo, I. Arzeno, S. Giddings, G. Pawlak, J. McClean and L. Rainville, "Circulation around and atop the Seychelles Plateau", *Journal of Geophysical Research: Oceans*, Submitted.

A.C Castillo-Trujillo, P. Flament, B. Powell and D. Partridge, "Vorticity balance south shore of Oahu Hawai‘i derived by high-frequency radio Doppler current observations", *Journal of Physical Oceanography*, vol. 49, no. 1, pp. 211–225, Jan 2019.

J.M. Azevedo Correia de Souza, B. Powell, and A.C Castillo-Trujillo, P. Flament, "The Vorticity Balance of the Ocean Surface in Hawai‘i from a Regional Reanalysis," *Journal of Physical Oceanography*, vol. 45, no. 2, pp. 424–440, Feb 2015.

SEMINARS

A.C. Castillo-Trujillo, S. Giddings, G. Pawlak, I. Arzeno “Circulation around the Seychelles Islands invited seminar in *University of Seychelles*, Mahé, Republic of Seychelles. Jul 2020.

A.C. Castillo-Trujillo, S. Giddings, G. Pawlak, I. Arzeno, J. McClean “The impact of the broad shallow Seychelles Plateau into the Southwestern Tropical Indian Ocean”, presentation in *Ocean Sciences (OSM)*, San Diego CA, USA, Feb 2020.

A.C. Castillo-Trujillo, Guidry, Michael, Rosie Alegado, Margaret Anne McManus, Haunani H. Kane, Mariko Hatta, Victoria Sindorf, Kimberley Kanani Mayfield, and Maxime Grand “A place-based, oceanography summer bridge course as part of an academic and curricular pathway from 2YCs to a 4YC for Native Hawaiian and other underrepresented students in the geosciences”, presentation in *Ocean Sciences (OSM)*, San Diego CA, USA, Feb 2020.

A.C. Castillo-Trujillo, S. Giddings, G. Pawlak, I. Arzeno, J. McClean and H Wang “Ocean dynamics atop the Seychelles Plateau, in the southwestern tropical Indian Ocean”, poster in *Gordon Research Conferences (Coastal Ocean Dynamics)*, Manchester NH, USA, Jun 2019.

A.C. Castillo-Trujillo, P. Flament “The spatial structure of Near-Inertial oscillations in the presence of submesoscale flow”, presentation in *Ocean Sciences (OSM)*, Portland OR, USA, Feb 2018.

A.C. Castillo-Trujillo, P. Flament “The surface expresion of NIO off the south shore of Oahu, Hawai‘i”, poster in *American Geophysical Union (AGU)*, San Francisco, CA, USA, Dec 2016.

A.C. Castillo-Trujillo, P. Flament “The Role of Sub-mesoscale Processes in the Vorticity Balance Derived by HFDR”, presentation in *Ocean Sciences (ASLO)*, New Orleans, LA, USA, Feb 2016.

A.C. Castillo-Trujillo, P. Flament “The Role of Sub-mesoscale Processes in the Vorticity Balance Derived by HFDR”, presentation in *Radio Oceanography Workshop (ROW)*, Woodshole, MA, USA, Nov 2015.

A.C. Castillo-Trujillo, P. Flament “Vorticity Balance derived by High Frequency Doppler Radars”, presentation in *International Meeting of Students in Physical Oceanography (IMSPO)*, Ensenada, México, Sep 2014.

A.C. Castillo-Trujillo, P. Flament “Vorticity Balance Mechanisms inferred From High Frequency Doppler Radar”, presentation in *Radio Oceanography Workshop (ROW)*, Savanna, GA, USA, May 2014.

A.C. Castillo-Trujillo, P. Flament, J. Azevedo Correira de Souza, and B. Powell “Vorticity Balance derived by HFDR and ROMS”, presentation in *Ocean Radio Conference in Asia (ORCA)*, Kaohsiung, Taipei, Apr 2014.

A.C. Castillo-Trujillo, P. Flament, J. Azevedo Correira de Souza, and B. Powell “Wind-forced mechanisms on the nonlinear vorticity balance derived from High Frequency Doppler Radar (HFDR) currents”, presentation in *Ocean Sciences (ASLO)*, Honolulu, HI, USA, Feb 2014.

PROFESSIONAL AFFILIATIONS	American Geophysical Union, Member	2014 – Present
FIELD EXPERIENCE	R/V Nathaniel B. Palmer, P06-leg1 Sydney to Australia LADCP operator Participation on a 46-day cruise as LADCP operator. PI: Sabine Mecking and Andreas Thurnherr.	Summer 2017
	R/V Point Sur, Chief Scientist Training Cruise Chief Scientist Describe the Monterrey Bay circulation using CTDs, ADCPs and Plankton Nets.	2014
	HFDR installation and maintenance, HI, USA Graduate Research Assistant Installation and maintenance of HFDR instruments off the coast of the Oahu and Big Island, Hawai'i as part of the Pacific Islands Ocean Observing System (PacIOOS) program.	2011-2014
	R/V KILO MOANA, Honolulu, HI, USA Participation on a 3-day cruise for Physical Oceanography Students in order to calibrate and test High Frequency Doppler Radars off the coast of Oahu, Hawai'i. PI: Doug Luther.	Aug 2013
	R/V Justo Sierra, Veracruz, México Participation on a 30-day cruise in the the Gulf of México. Deployment and Recovery of ADCP and CTD moorings. PI: Julio Candela.	May 2011
LANGUAGES	Spanish: Native language. English: Fluent (speaking, reading, writing). French: Intermediate (reading); basic (speaking, writing). Portuguese: Intermediate (reading, speaking); basic (writing).	
IT SKILLS	Python, ROMS, Git, Matlab, Linux, Latex	
INTERESTS	Politics, Finance, Historical Fiction, Outdoor Activities	