René Gabriel Navarro-Labastida

Curriculum Vitae

Swedish Meteorological and Hydrological Institute (SMHI),
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Education

2019 – 2023 **PhD in Earth Science and Fluid Mechanics**, *Università degli Studi di Trieste (UniTS) – The Abdus Salam International Centre for Theoretical Physics (ICTP)*

The research project aims to determine the role of the wind-driven shallow overturning circulation in the heat budget of the Tropical Pacific, under both unperturbed and transient climate conditions. The relevant physical processes to the heat budget are represented by the three-dimensional process-based tendency diagnostics for the ocean general circulation model NOAA-GFDL Modular Ocean Model version 5. *Contact*: Prof. R. Farneti (rfarneti@ictp.it)

2013 – 2016 **MSc in Physical Oceanography**, *Center for Scientific Research and Higher Education at Ensenada (CICESE)*, Department of Physical Oceanography

In this study, we estimated the seasonal cycle of the near-bottom transport through some of the main sills of the mid-riff island region of the Northern Gulf of California, using relatively long-time measurements of currents. Additionally, we estimated the seasonal cycle of near-bottom temperatures, surface geostrophic velocities, and measured near-surface velocities in order to characterize the seasonal cycle of the exchange. Contact: Prof. M. López (malope@cicese.mx)

2008 – 2013 **BSc in Oceanography**, *Autonomus University of Baja California (UABC)*, Faculty of Marine Science

In this study, we made a simple assessment of the temporal variability of the Southern Gulf of California coastal winds, by means of observational data and reanalysis products, as well. *Contact*: Prof. R. Castro (rcastro@uabc.mx)

Work Experience

Oct 2023 – ongoing **Postdoctoral Researcher**, *The Rossby Centre - SMHI*, Analysis of Ocean Circulation

The focus of the work is to analysis of ocean circulation in the North Atlantic, in particular the Gulf Stream and the Atlantic Meridional Overturning Circulation (AMOC) system, the driving processes and variability, the potential changes in a warming climate and the impacts on Arctic and European climate. Existing climate simulations for pre-industrial, historical and future climates with the global climate model EC-Earth in high spatial resolution will be analyzed. *Contact*: Dr. Torben Koenigk (torben.koenigk@shmi.se)

Jun 2016 – Jan 2019 **Consultant**, *Oceanographic Observational Network System (cigom.info)*, Statistical Analysis in Line 3: Numerical Simulation of Wave-Current Interaction

Technical support in the statistical description of Gulf of México by the analysis outputs from different numerical models and different oceanographic data sets. I was in charge of the production of scientific reports and seminaries preparation. *Contact*: Dr. Pedro Osuna (osunac@cicese.mx)

Feb 2017 – Jan 2019 **Consultant**, *Mexican Centre for Innovation in Ocean Energy (cemieoceano.mx)*, Data Analysis Support in Line 1: Wave Energy

Technical support in the estimation of global and regional wave-energy by the analysis of numerical outputs and observational data from buoys and moorings. I was in charge of the production of scientific reports and seminaries preparation. *Contact*: Dr. F.J. Ocampo-Torres (ocampo@cicese.mx)

Cruises

May, 2013	**PESCAR-24 Cruise**, *Point Sur RV (Moss Landing Institute of Oceanography)*
Apr, 2016	**IMECOCAL 1604 Cruise**, *Alpha Helix RV (CICESE)*
Jun, 2017	**CICESE-JPL/NASA Cruise**, *Alpha Helix RV (CICESE)*

Teaching Experience

| 2016-2018 | **Probability and Statistics (60 h)**, *Bachelor on Nanotechnology*, Center of Nanoscience and Nanotechnology, UNAM |
| July, 2023 | **Teaching Assistant (68 h)**, *Climatematch Academy*, https://academy.climatematch.io/ |

Skills

Programming	PYTHON, FORTRAN, MATLAB, BASH, SHELL, CDO, NCO, FERRET
Model	User of NOAA-GFDL Modular Ocean Model (MOM) version 5
Writing	LATEX
Languages	SPANISH (Native Speaker), ENGLISH (Full Professional Proficiency), ITALIAN (Professional Working Proficiency)
Operative Systems	LINUX, MACOS, WINDOWS

Scientific Meetings (Highlights)

o Participant (July 2-8, 2023). *Bad Honnef Physics School, Physics of the Ocean*, Physikzentrum Bad Honnef, Germany

o Participant (Jul 1-12, 2019). *2nd ICTP Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics: Convective Organization and Climate Sensitivity*, Trieste, Italy

o Participant (Jul 15-19, 2019). *ICTP-CLIVAR Summer School on Oceanic Eastern Boundary Upwelling Systems*, Trieste, Italy

o Ocampo-Torres F.J., Navarro, R., and Osuna, P., (2018). *Progress in Ocean Surface Waves Hindcast in Ocean Waters Around México*. The Coordinated Ocean Wave Climate Project (COWCLIP) 2018 Workshop. UNESCO building (IOC), Paris, France

o Navarro, R., López, M., (Oct 22-27, 2017). *Ciclo Estacional de las Corrientes y del Transporte en los Umbrales del Golfo de California*, Reunión Anual de la Unión Geofísica Mexicana, Jalisco, México

Publications

o Navarro, R. and Farneti, R. (2023). **The role of shallow and deep circulations in the Tropical Pacific Ocean heat budget**. Frontiers in Marine Science, doi:10.3389/fmars.2023.1208052

o Navarro, R. (2022). **The Role of the Wind-driven Shallow Overturning Circulation in the Heat Budget of the Tropical Pacific: Ocean's Response to Surface Buoyancy and Momentum Flux Perturbations**. Ph.D. Thesis. Università degli Studi di Trieste, Italy

o Todd *et al.,* (2020). **Ocean-only FAFMIP: Understanding Regional Patterns of Ocean Heat Content and Dynamic Sea Level Change**. Journal of Advances in Modeling Earth Systems, doi:org/10.1002/essoar.10501557.1

o Navarro, R., López, M., & Candela, J. (2016). **Seasonal Cycle of Near-Bottom Transport and Currents in the Northern Gulf of California**. Journal of Geophysical Research: Oceans, 121. doi: 10.1002/2016JC012063

o Navarro, R. (2016). **Seasonal Cycle of Currents and Transport on the Sills from Gulf of California**. MSc. Thesis. Centro de Investigación Científica y de Educación Superior de Ensenada, México

o Navarro, R. (2013). **Diurnal, Seasonal and Synoptical Wind Variability at the Southern Gulf of California**. BSc. Thesis. Universidad Autonoma de Baja California, México

Miscellaneous (Highlights)

o **The Ocean in a Tank** as part of the *10th Maker Faire Trieste* (Sept 2-3, 2023) (Science Communication event with +200 participants). Trieste, Italy (Participant)

o **Serata Sperimentale a Scussa**. Open-Stage at a local Pub, usually including an Art Exhibition, Experimental Lecture, and Music. Trieste, Italy (Participant)

o **La Metáfora del Gran Cinturón de Circulación Oceánica: Ventilación del Océano Global y la Infravalorada Contribución del Pacífico** (May, 2022) *XIV Jornada Académica de Oceanología*. Puerto Ángel, México (Invited lecturer)

o CICESE's raising money-food rallies for Haiti's refugee community (2016). Ensenada, México (Organizer)

o **7th International Meeting of Students in Physical Oceanography** (Nov 19-21, 2014) (+30 participants and 7 plenary talks). Ensenada, México (Organizer)

o Collaborator of different student initiatives for Science Communication and Coastal Cleaning (2013). Ensenada, México

o **XX Congreso Estudiantil de la Facultad de Ciencias Marinas** (May 14-18, 2012). Ensenada, México (Organizer)