



Federico Ienna

Date of birth: ...omissis... | Nationality: Italian

● ABOUT MYSELF

Physical oceanographer specializing in the intricate dynamics of marine systems. I like to put a strong emphasis on experimental oceanography, combining fieldwork, advanced in-situ instrumentation, and comprehensive data analysis to explore physical and bio-optical aspects of the ocean.

With extensive scientific cruise experience I am equipped me to lead and conduct experiments on a variety of vessels, gathering crucial data that informs our understanding of oceanic processes.

As a scientist, I am driven by a curiosity that extends beyond traditional boundaries, allowing me to investigate a diverse array of important scientific topics.

● WORK EXPERIENCE

01/11/2023 – 31/07/2024 Lisbon, Portugal

COLLABORATOR MARE CENTER - FACULTY OF SCIENCES OF THE UNIVERSITY OF LISBON

08/07/2021 – 30/10/2023 Lisbon, Portugal

POST-DOCTORAL RESEARCHER MARE CENTER - FACULTY OF SCIENCES OF THE UNIVERSITY OF LISBON

Atlantic Meridional Transect (AMT):

<https://www.amt-uk.org/Cruises/AMT30>

Invited scientist on board the 30th edition of the Atlantic Meridional Transect (AMT-30), a semi-annual research cruise travelling from the Falkland Islands to the UK in collaboration with Plymouth Marine Laboratory (PML) and National Oceanography Center (NOC).

Responsibilities:

- Focus on measurement of the optical properties of surface ocean water and its **Inherent and Apparent Optical Properties** as part of the PML Ocean Optics group.
- Field work procedures, including **set-up, maintenance, quality control, operation** and **data-processing** of high-level oceanographic equipment
- Set-up, deployment, maintenance**, and **data processing** of optical instrumentation:
 - oHyperspectral radiometers (HyperSAS, HSP-1) on board the ship, measuring the above-water **remote sensing reflectance** and **global & diffuse irradiance**
 - oContinuous underway optics system (AC-S,) measuring **particulate optical backscatter, beam attenuation**, and **absorption coefficients** of flow-through "underway" water
- Design, documentation**, and **implementation** of new data-collection procedures for the observation and study of pelagic *Sargassum* samples collected on board.
- Algorithm development** and **deployment** (Python, Octave, MatLab) on board the ship, for immediate data analysis.
- Participation in regular science meetings and preliminary result discussions, presentation of results.
- Observation of numerous launches of **Argo floats** (both BGC and traditional floats) at key points along the transect, as well as the localization and recollection of a deep-sea mooring

Project CERTO: Copernicus Evolution – Research for harmonized and Transitional water Observation

www.certo-project.com

Responsibilities:

- Planning, implementation**, and **participation in fieldwork** and **data-collection** campaigns in the Tagus Estuary, including two main fieldwork cruises (2021, 2022) in the Tagus;
- Deployment** and **maintenance** of **hyperspectral radiometry equipment** (TriOS-RAMSES) on board a ship-of-opportunity in the Tagus
- End-User** and **Stakeholder interviews**, including product demonstration and collection of feedback
- Writing reports and **deliverables** for the relevant Work Packages

·Planning and participation in **outreach** activities, such as: presentations, summer schools, product demonstrations.

Project PRIMUS: Primary-productivity in Upwelling Systems

www.primus-atlantic.org

Responsibilities:

- Data preparation and analysis efforts to **integrate satellite and in-situ observations**.
- Direct involvement in the **communications** work package, developing and maintaining the project's website.

01/12/2019 – 30/11/2022 Lisbon, Portugal

PROJECT MANAGER FCIÊNCIAS.ID – ASSOCIATION FOR THE RESEARCH AND DEVELOPMENT OF THE SCIENCES

·**Project manager** of the H2020 project **PORTWIMS** (Portugal Twinning for Innovation and Excellence in Marine Science and Earth Observation), www.portwims.org.

- **Led the enhancement of the research profile** of the Faculty of Sciences (FCUL) at the University of Lisbon by **collaborating** with two **top-tier** European research centers: Plymouth Marine Laboratory (PML) and Alfred Wegener Institute (AWI).
- Coordinated the **drafting, submission, and validation** *all* project **Deliverables** and **Reports** (Mid-term and Final), ensuring their timely submission to the **European Commission** funding body through the online **Portal**.
- **Facilitated** regular **monthly meetings** among the three main project participants, including both virtual and annual in-person sessions.
- Navigated the project during the Covid-19 challenges, successfully managing two **project extensions** while liaising with the **EU Project Officer**.
- Handled the **travel exchanges** of personnel, one of the core elements of the project.
- **Managed** the project **publication list, conference list, and bibliography**, involving all scientific publications and conference communications during the project.
- Helped to **organize and disseminate** the **summer schools, training workshops, and outreach events**, including the 2022 Innovation Summer School in Lisbon.
- Coordinated the **project finances** with the financial manager at FC.ID.
- **Fostered strong collaborations** with Work Package Leaders and the Project Coordinator at PML, AWI and FCUL, ensuring a cohesive and productive project environment.

01/10/2009 – 01/08/2011 Seattle, WA, United States

RESEARCH SCIENTIST POLLACK LABORATORY - UNIVERSITY OF WASHINGTON BIOENGINEERING DEPARTMENT

- Led **independent research** investigating **evaporation from a water substrate** in a **lab environment**, as well as participating in research projects alongside a senior staff members
- Participated on a joint research project focusing on **physical-molecular structure of water** at the air-water interface
- Conducted in-depth theoretical research and article searches to relate the findings of the study with atmospheric weather phenomena.
- Organized and participated in weekly lab meetings and discussions on ongoing projects.

01/07/2008 – 01/10/2008 Seattle, WA, United States

RESEARCH AIDE UNIVERSITY OF WASHINGTON DEPARTMENT OF EARTH AND SPACE SCIENCES

- Contributed to **earthquake data analysis** by measuring the **travel times of seismic waves** reaching underground **seismometers** using a **Matlab** program.
- Worked **independently** to analyze live incoming data from a network of seismometers.

● **EDUCATION AND TRAINING**

13/06/2008 Seattle, WA, United States

BACHELOR OF SCIENCE IN PHYSICS; MINOR DEGREE IN INTERNATIONAL STUDIES University of Washington

Website www.washington.edu

16/12/2014 Newark, DE, United States

MASTER OF SCIENCE IN MARINE STUDIES, SPECIALIZATION IN OCEANOGRAPHY University of Delaware -
College of the Earth, Ocean and Environment

- Graduate Research Assistant
- NASA Space Grant Graduate Fellow
- **Developed an algorithm in Matlab** for studying **oceanic eddies** as observed from **satellite data** from various sensors (**satellite altimetry, sea surface temperature, SAR**), and **in-situ data (CTD, XBT, Argo)**
- Participated in joint projects with others in research group on diverse oceanographic topics, including observation of ocean plastic and debris by satellite and the study of algal blooms in the Gulf Stream region.

Website <https://www.udel.edu/academics/colleges/ceoe/> | **Field of study** Marine Studies | **Final grade** 3.934 |

Thesis A study of Mediterranean eddies by in situ and remote sensing methods

06/07/2021 Lisbon, Portugal

PH.D., GEOPHYSICAL AND GEOINFORMATION SCIENCES, WITH SPECIALIZATION IN OCEANOGRAPHY
University of Lisbon, Faculty of Science

- FCT Earthsystems PhD Program
- Design and development of a **MatLab algorithm** for further study of deep **Meddies**, in combination with the **MEDTRANS in-situ dataset**, using **satellite altimetry**

Website <https://ciencias.ulisboa.pt/> | **Field of study** Physical Oceanography | **Final grade** Approved with Distinction |

Thesis Mediterranean Water Eddies and their Expressions at the Sea Surface

● **RESEARCH CRUISE & VESSEL EXPERIENCE**

21/02/2023 – 30/03/2023

Atlantic Meridional Transect (AMT-30)

Invited scientist on board the 30th edition of the Atlantic Meridional Transect (AMT-30), a semi-annual research cruise travelling from the Falkland Islands to the UK in collaboration with Plymouth Marine Laboratory (PML) and National Oceanography Center (NOC).

Focus on measurement of the optical properties of surface ocean water and its **Inherent Optical Properties** as part of the PML Ocean Optics group led by Dr. Gavin Tilstone.

Vessel:

RSS Discovery (National Oceanography Centre, UK)

Transit from:

Port Stanley, Falkland Islands - Southampton, UK

Link <https://www.pml.ac.uk/science/publications/AMT-30-Cruise-Report>

05/09/2022 – 09/09/2022

Project CERTO 2022 Tagus Estuary Research Survey

Scientific participation aboard the Project CERTO 2022 Tagus Estuary Research Survey

Vessel:

UAM Fisália (Hydrographic Institute, Portugal)

Transit from:

Alfeite – Tagus Estuary – Alfeite (Portugal).

18/10/2021 – 22/10/2021

CERTO 2021 Tagus Estuary Research Survey

Scientific participation aboard the Project CERTO 2021 Tagus Estuary Research Survey

Vessel:

UAM Fisália (Hydrographic Institute, Portugal)

Transit from:

Alfeite – Tagus Estuary – Alfeite (Portugal).

Link https://www.certo-project.org/News/Comparing_radiometers_in_the_Tagus

19/10/2016 – 05/11/2016

SEA Cruise C-269

Participation aboard the SEA Education Association training vessel for educational and instructional purposes

Vessel:

SSV Corwith Cramer (SEA Education Association)

Transit from:

Cádiz, Spain – Las Palmas, Canary Islands

11/07/2015 – 13/12/2015

Earthsystems Oceanographic Training Cruise

Oceanographic Training Cruise under the guidance of the Portuguese Navy as part of the FCT Earthsystems doctoral program.

Vessel:

NTM Creoula (Portuguese Navy)

Transit from:

Lisbon – Berlenga – Lisbon (Portugal)

09/06/2023 – 10/06/2023

2013 Delaware Bay Survey

Graduate scientist volunteer aboard the 2013 bio-optical survey in the Delaware Bay under the guidance of Dr. Johnathan Sharp (University of Delaware).

Vessel:

RV Hugh R. Sharp (University of Delaware)

Transit from:

Cape May Lewes – Delaware Bay – Cape May Lewes (United States)

PUBLICATIONS

2023

[Spatial structure of in situ reflectance from mobile radiometers in coastal and inland waters: implications for satellite validation](#)

T. Jordan, S. Simis, N. Selmes, G. Sent, **F. Ienna**, V. Martinez-Vicente. "Spatial structure of in situ reflectance from mobile radiometers in coastal and inland waters: implications for satellite validation". *Frontiers in Remote Sensing* 4, **2023**.

Write here the description...

2022

[Meddies and Their Sea Surface Expressions: Observations and theory](#)

F. Ienna, I. Bashmachnikov, J. Dias "Meddies and Their Sea Surface Expressions: Observations and theory". *Journal of Physical Oceanography*, **2022**. 52(11), 2643-2656. doi: <https://doi.org/10.1175/JPO-D-22-0081.1>

Write here the description...

2017

[Surface signature of Mediterranean water eddies in a long-term high-resolution simulation](#)

D. Ciani, X. Carton, AC Barbosa Aguiar, A. Peliz, I. Bashmachnikov, **F. Ienna**. B. Chapron, R. Santoleri. "Surface signature of Mediterranean water eddies in a long-term high-resolution simulation". *Deep Sea Research Part I: Oceanographic Research Papers*. **2017**. 130, 12-29. doi: <https://doi.org/10.1016/j.DSR.2017.10.001>

Write here the description...

2015

[An analysis of the evolution of Meddies in the North Atlantic using floats and multisensor satellite data](#)

YH Jo, **F. Ienna**, and XH Yan. "An analysis of the evolution of Meddies in the North Atlantic using floats and multisensor satellite data", *Journal of Geophysical Research, Oceans*, **2015** 120, 1904-1917. doi: <https://doi.org/10.1002/2014JC10495>
Write here the description...

2014

[A New Method for Tracking Meddies by Satellite Altimetry](#)

F. Ienna, YH Jo and XH Yan. "A New Method for Tracking Meddies by Satellite Altimetry". *Journal of Atmospheric and Oceanic Technology*. **2014** 31, 1434-1445. doi: <https://doi.org/10.1175/JTECH-D-13-00080.1>

2012

[Spatially Resolved Evaporative Patterns From Water](#)

F. Ienna, H. Yoo, and GH Pollack. "Spatially Resolved Evaporative Patterns From Water". *Soft Matter*. **2012** 8(47), 11850-11856 doi: <https://doi.org/10.1039/C2SM26497H>

2010

[Persisting Water Droplets on Water Surfaces](#)

I. Klyuzhin, **F. Ienna**, B. Roeder, A. Wexler, and GH Pollack. "Persisting Water Droplets on Water Surfaces". *The Journal of Physical Chemistry B*. **2010** 114 (44), 14020-14027 doi: <https://doi.org/10.1021/jp106899k>

● **CONFERENCES & SEMINARS**

2018 EGU General Assembly, Vienna, Austria

Deep Coherent Vortices and their Sea Surface Expressions

Federico Ienna, Igor Bashmachnikov, Joaquim Dias, Alvaro Péliz "Deep Coherent Vortices and their Sea Surface Expressions", *EGU General Assembly*, Vienna, Austria, 2018.

2017 9th International Liège Colloquium on Ocean Dynamics, Liège, Belgium

Deep Coherent Vortices and their Sea Surface Expressions

Federico Ienna, Igor Bashmachnikov, Joaquim Dias, Alvaro Péliz, "Deep Coherent Vortices and their Sea Surface Expressions", *49th International Liège Colloquium on Ocean Dynamics*, Liège, Belgium, 2017.

2014 ATINER Annual International Conference on Earth and Environmental Sciences. Athens, Greece

A New Method for Tracking Meddies by Satellite Altimetry

Federico Ienna, Young-Heon Jo, and Xiao-Hai Yan. "A New Method for Tracking Meddies by Satellite Altimetry". *ATINER Annual International Conference on Earth and Environmental Sciences*. Athens, Greece. 2014

2013 Delaware NASA Space Grant Research Symposium, Newark, Delaware.

A New Method for Tracking Meddies by Satellite Altimetry

Federico Ienna, Young-Heon Jo, and Xiao-Hai Yan. "A New Method for Tracking Meddies by Satellite Altimetry". *Delaware NASA Space Grant Research Symposium*, Newark, Delaware, U.S.A.. 2013

2010 Fifth Annual Conference on the Physics, Chemistry, and Biology of Water, West Dover, Vermont

Spatially Resolved Evaporative Patterns on Water

Federico Ienna and Gerald H. Pollack. Spatially Resolved Evaporative Patterns on Water. Poster presentation. *Fifth Annual Conference on the Physics, Chemistry, and Biology of Water*, West Dover, Vermont, U.S.A. 2010

● **HONOURS AND AWARDS**

03/2015

FCT Earthsystems Doctoral Grant – Fundação para a Ciência e a Tecnologia

12/04/2013

NASA Delaware Space Grant Graduate Fellowship Award – NASA/Delaware Space Grant College and Fellowship Program

● OUTREACH ACTIVITIES

22/04/2022

Presentation and guest participation at book launch

Dissemination of ongoing work in the PORTWIMS twinning project. Presentation of recently published book authored by Prof. Vanda Brotas, Director of PORTWIMS, at the Pavilhão dos Conhecimentos, Lisbon, Portugal, 22 May 2022

12/07/2022

Presentation and guest participation at the International Space University summer school

Dissemination of ongoing research work under the CERTO research project, aboard the *Lisboat* vessel in the Tagus estuary, 12 July 2022

Presentation and organization of events in collaboration with the *Ciência Viva* program

Presentation and organization of two public outreach events in collaboration with the *Ciência Viva* program, where researchers explain their ongoing work aboard the *Lisboat* vessel in the Tagus estuary. For this outreach activity, two separate presentations were made, both with a full audience aboard the outbound vessel, throughout July and August 2021

30/11/2016

Participation in the "European Researchers' Night"

Participation in the "European Researchers' Night" (*Noite Europeia dos Investigadores*), exhibition and presentation, Pavilhão dos Conhecimentos, Lisbon, Portugal, 30 November 2016, where researchers present their ongoing scientific research to a general audience.

● LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
PORTUGUESE	C2	C2	C1	C1	B2
FRENCH	B2	B2	B1	B2	A2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

● PROGRAMMING SKILLS

Programming Languages for Research

- *MATLAB*: excellent knowledge for building in-depth algorithms for research, analysis of complex datasets, and large-scale computation
- *GNU Octave*: operational knowledge for research and analysis
- *Python*: operational knowledge for research and analysis