PERSONAL INFORMATION

Mélanie Juza

+34 678 34 04 58 mjuza@socib.es

Sex Female | Date of birth 29/07/1980 | Nationality French

POSITION

PhD and engineer in physical oceanography

WORK EXPERIENCE

December 2011-present

Engineer-Researcher, scientist oceanographer SOCIB

Balearic Islands Coastal Observing and Forecasting System (SOCIB), Palma, Spain, www.socib.es

- Three-dimensional assessment and impacts of marine heatwaves in the Mediterranean Sea using multi-platform observations and numerical simulations.
- Development and analyses of sub-regional ocean indicators in the Mediterranean Sea from event detection in real-time to long-term variations in the context of climate change.
- Development of added-value ocean products and applications to transfer knowledge to society and to support sustainable management of the oceans.
- Dynamical investigations (circulation & variability at various scales, water masses, ocean processes) in the Mediterranean Sea combining multi-platform observations and numerical simulations.
- Development of automatic tools for oceanographic data (data processing, calculations of derived variables and indicators, visualization).
- Systematic & quantitative assessment of oceanic simulations (forecasts and hindcasts) implemented in the Mediterranean Sea using available multi-platform (remote sensing and *in situ*) observations.
- Support to operational models (ocean forecasting systems) in the western Mediterranean Sea: development, maintenance, validation, improvement.

December 2008-2011

PhD

Laboratoire des Ecoulements Géophysiques et Industriels (LEGI), MEOM team, Grenoble, France.

- Numerical simulations and observations of the global ocean: development of interface, assessment of simulations and observational network, dynamical investigations. (Advisors: B. Barnier, T. Penduff)

December 2005-2008

Research engineer CNES-CNRS

Laboratoire des Ecoulements Géophysiques et Industriels (LEGI), MEOM team, Grenoble, France.

- Work integrated into the international project DRAKKAR (multi-resolution modelling of the global ocean).
- Development of tools for the analysis oceanic simulations and reanalysis, of statistical methods for the comparison model/observations. Scientific analysis of the results.
- Construction, maintenance and distribution of post-processed observations & multi-model datasets.

March-August 2005

Internship (Research Master)

Ifremer, Laboratoire d'Océanographie Spatiale (LOS), Brest, France.

- Assessment of the WaveWatch III numerical model using altimetric observations. (Advisors: Y. Quilfen, B. Chapron)

March-August 2004

Internship (College engineering)

Institut de Recherche pour le Développement (IRD), Brest, France.

- Assessment and exploitation of meteorological data (*in situ*, satellites, models) in the Guinea Gulf. Calculations of turbulent air-sea fluxes. (Advisors: D. Dagorne, B. Bourlès)
- Project integrated into the EGEE program (study of the ocean circulation and its variability in the Guinea Gulf).

June-August 2003

University of Queensland, Department of Coastal Engineering, Brisbane, Australia.

- Study of seawater infiltration into beaches. (Advisor: P. Nielsen)

EDUCATION AND TRAINING

2008-2011

PhD

University of Grenoble, France, supported by the CNES. Speciality: Earth, Univers, Environment.

2004-2005

Research Master

University of Bretagne Occidentale, Brest, France: “Physics in ocean and atmosphere”.

2001-2004

Engineering university degree

Institut des Sciences de l’Ingénieur de Toulon et du Var, La Garde, France: « Marine engineering ».

University-level preparation for the French “Grandes Ecoles”

1998-2001

Physics-Chemistry, Paris, France.

PERSONAL SKILLS

Mother tongue(s): French

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C	C	C	C	C
Spanish	C	C	C	C	C
Italian	A	A	A	A	A

Levels: A - Basic user, B - Independent user, C - Proficient user (Common European Framework of Reference for Languages)

Communication skills

- Oral presentations in international, European and national conferences, workshops and meetings
- Poster presentations in international and European conferences
- Scientific peer-reviewed articles, deliverable project reports, technical and internal reports
- Wide public audience communication (TV, radio, press, Open Days)

Job-related skills

- Physical oceanography
- Ocean indicators, extreme events and climate change, marine heat waves
- Multi-platform ocean observations (satellite products, Argo floats, gliders, fixed moorings, HF radars, drifters, animals, saildrones, CTDs, XBTs, currentmeters)
- Mediterranean Sea and Balearic Islands region (circulation, variability, water mass ocean processes)
- Ocean data analysis (from observations and numerical simulations) and dynamical investigations
- Assessment of simulations using multi-platform observations at various spatial and temporal scales
- Ocean numerical modelling (operational models and hindcast simulations)
- Oceanographic products, applications and services
- Participation in European and national projects

Computer skills

- Operating systems: Unix, Windows. Simulations in supercomputers
- Programming languages: Fortran, c, C-shell, Matlab, python
- Management and storage of oceanographic data (observations and numerical simulation outputs)
- Automatic processing tools for oceanographic data
- Visualization tools of oceanographic data: Matlab, Ocean Data View
- Editing and word processing tools: vi, LATEX, Microsoft tools
- Other softwares: Simulations in super computers (IDRIS-CNRS, CINES), SVN (version control system), NVU (web site development), html

Oceanographic campaigns

- ATL2MED mission (2019-2020). Experiment in the southern Balearic Islands with two saildrones (March 2020). Joint R/V-saildrones campaign in the Cabrera National Park (cancelled for Covid-19).
- BLUEFIN TUNA (July 2015). Stations CTD and catches tuna larvae around the Balearic Islands.
- ALBOREX (May 2014). Multi-platform experiment in the western Mediterranean Sea.
- PIRATA-FR19 (July 2009). Substitution of 5 fixed buoys (launching, restoring, and recovery), deployment of 10 autonomous floats, continuous measurements and hydrographic stations (XBT, CTD, water sampling) in the Equatorial Atlantic.

Licences ▪ Driving licence B, nautical licence PNB

PROJECT CONTRIBUTIONS

Contributions to international, European and national projects

- PHYSALIA [EU partners]: team member (2024-2027)
- Euro-Argo-ONE [EU partners]: team member (2024-2027)
- TUNAWAVE [EU partners]: contribution to WP1-3 (2024-2026)
- FOCCUS [EU partners]: contribution to WP2-3 about new coastal observations and WPs7-8 about coastal applications (2024-2028)
- AQUARIUS [EU partners]: Transnational Access (2024-2028)
- BlueCloud26 [EU partners]: contribution to the Virtual Lab using ocean gliders (2023-2026)
- Fast-SWOT [EU partners]: team member (2022-2026)
- TIAMAT [ICMAN – SOCIB – IIM]: elaboration of the "Marine observatory of global change in the National Parks network" (2022-2024)
- Copernicus Marine Service 2 [EU partners]: coordination of In Situ TAC for contributions to Ocean State Report (2021-2024, 2025-2028)
- JERICO-DS [EU partners]: support to SOCIB contribution as national representative (2020-2023)
- JERICO-S3 [EU partners]: SOCIB internal co-coordination, contributions to WP1-2-4-7-8-9-11 (2020-2024)
- Eurofleets+ [EU partners]: contributions to WP2 – Transnational Access (R/V), WP5 - Stakeholder engagement (2019-2023)
- EuroSea [EU partners]: contribution to WP6 – Ocean health demonstrator, collaboration with WP2 – System design (2019-2023)
- ATL2MED [Saildrone US – SOCIB]: Atlantic to Mediterranean – Saildrones. Co-IP SOCIB experiment south of Balearic Islands (2020)
- Copernicus Marine Service 1 [EU partners]: coordination of In Situ TAC for contributions to Ocean State Report (2015-2021)
- CMEMS MED-MFC [EU partners]: development & implementation of model-glider comparisons in Copernicus CalVal system (2016-2018)
- JERICO-Next [EU partners]: contribution to JRAP6: WMOP assessment in the Ibiza Channel using coastal observations (2017-2019)
- MEDCLIC [Caixa Foundation – SOCIB]: contribution to the study of circulation variability in the Mediterranean (2015-2017)
- BLUEFIN TUNA [SOCIB – IEO]: participation to the development of predictive models of Bluefin Tuna spawning locations (2012-2017)
- JELLYFISH [ICMAN – SOCIB]: development of procedures to analyse atmospheric and oceanic conditions during specific jellyfish events in the Balearic Islands (2014-2016)
- TURTLES [Alnitak – SOCIB]: relating turtle trajectories to oceanic conditions in the western Mediterranean Sea (2014-2016)
- DRAKKAR [international partners]: development of numerical simulations at global scale. Participation to the development of tools for the analysis oceanic simulations and reanalysis, of statistical methods for the comparison model/observations (2005-2011)

SCIENTIFIC COMMITTEES

- Ocean Science: guest editor for the Special issue on ocean extremes (55th Liege Colloquium) (2024-2025)
- Oceanpredict Symposium (OP'24): Session chair for 4.3 Extreme events in Global / Basin-scale / Open ocean prediction (2024)
- Ocean Observing Co-design: Co-lead of the "Marine heat waves" exemplar (2024-present)
- Member of the Ocean Observations Physics and Climate (OOPC) Panel (2024-present)
- Steering committee of the Copernicus Marine Service Situ TAC (2021-present)
- Advisory committee for the "Balearic Sea Reports" (Marilles Foundation) (2020-present)
- Liege colloquium 2024: scientific committee "Extreme events" (2023-2024)
- Ocean Observing Co-design: governance board for "Marine heat waves" exemplar (2022-2023)
- JERICO-S3 project: Transnational Access management team (2020-2024)

WEB APPLICATIONS

Science-based web applications

- **Juza**, M. (2025). Ocean gliders in the Ibiza Channel. Balearic Islands Coastal Observing and Forecasting System, SOCIB. https://apps.socib.es/gliders-ibiza-channel. *Under revision*
- **Juza**, M., & Tintoré, J. (2023). TIAMAT: a marine observatory of global change in the Spanish National Parks network. Balearic Islands Coastal Observing and Forecasting System, SOCIB. https://apps.socib.es/observatoriotiamat
- **Juza**, M., & Tintoré, J. (2021). Sub-regional Mediterranean Marine Heat Waves. Balearic Islands Coastal Observing and Forecasting

System, SOCIB. https://apps.socib.es/subregmed-marine-heatwaves

- **Juza**, M., & Tintoré, J. (2021). SOCIB Satellite Imagery. Balearic Islands Coastal Observing and Forecasting System, SOCIB. https://apps.socib.es/satellite-imagery
- **Juza**, M., & Tintoré, J. (2020). Sub-regional Mediterranean Sea Indicators. Balearic Islands Coastal Observing and Forecasting System, SOCIB. https://apps.socib.es/subregmed-indicators
- Álvarez-Berastegui, D., Frontera, B., Rotllán, P., Heslop, E., Fernandez, J. G., Tugores, M. P., **Juza**, M., Mourre, B., & Tintoré, J. (2020). Mediterranean Surface Exploration Tool. Balearic Islands Coastal Observing and Forecasting System, SOCIB. https://apps.socib.es/MSET

COMMUNICATIONS

(The detailed list of publications and conference presentations is provided in Appendix)

- Publications: peer-reviewed articles, proceedings in international conferences, newsletters, books.
- Conferences: oral presentations, posters, invited talks.
- Technical reports: product users manuals, project deliverables, reports
- Datasets (moorings, gliders)
- Divulgation: TV, radio, press, Open Days, events, videos.