PERSONAL INFORMATION

Mélanie Juza

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

POSITION

PhD and engineer in physical oceanography

WORK EXPERIENCE

December 2011-present

Engineer-Researcher, Modelling and Forecasting Facility

Balearic Islands Coastal Observing and Forecasting System (SOCIB) in the Modelling and Forecasting Facility, Palma de Mallorca, Spain. www.socib.es.

- Support to operational models (ocean forecasting system and meteo-tsunamis prediction) in the western Mediterranean Sea: development, maintenance, validation, improvement.
- Systematic and quantitative assessment of regional oceanic simulations (forecasts and hindcasts) implemented in the western Mediterranean Sea using available multi-platform observations (remote sensing and *in situ* measurements).
- Dynamical investigations (circulation and variability at basin and sub-basin scales, ocean processes) in the western Mediterranean combining observations and numerical simulations.

December 2008-2011

PhD

Laboratoire des Ecoulements Géophysiques et Industriels (LEGI) in the Modélisation des Ecoulements Océaniques à Moyenne et grande échelle (MEOM) team, Grenoble, France.

Advisors: Bernard Barnier , Thierry Penduff

- Numerical simulations and observations of the global ocean: development of interface, assessment of simulations and observational network, dynamical investigations.

December 2005-2008

Research engineer CNES-CNRS

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 datasets.

March-August 2005

Internship (Research Master)

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

Advisors: Yves Quilfen, Bertrand Chapron

- Assessment of the WaveWatch III numerical model using altimetric observations.

March-August 2004

Internship (College engineering)

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

Advisors: Dominique Dagorne, Bernard Bourlès

- Assessment and exploitation of meteorological data (*in situ*, satellites, models) in the Guinea Gulf. Calculations of turbulent air-sea fluxes.
- 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.

Advisor: Peter Nielsen

- Study of seawater infiltration into beaches.

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 (ISITV), La Garde, France: « Marine engineering ».

1998-2001 **University-level preparation for the French “Grandes Ecoles”**

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: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Good communication skills:

- Oral presentations at international conferences, meetings and workshop (in English, French, Spanish)
- Poster presentations at international conferences and meetings
- Articles (scientific and public journals), internal reports

Job-related skills

- Physical oceanography
- Ocean numerical modelling (operational models and hindcast simulations)
- Multi-platform observations (satellite products, Argo floats, CTDs, XBT, gliders, drifters, fixed moorings, HF radar, animals)
- Assessment of simulations using multi-platform observations at various spatial and temporal scales
- Data analysis (observations and numerical simulations)
- Western Mediterranean Sea (circulation, variability, ocean processes)

Computer skills

- Operating systems: Unix, Windows. Simulations in supercomputers
- Programming languages: Fortran, C-shell, Matlab
- Management and storage of oceanographic data (observations and numerical simulation outputs): NetCDF format, development of processing tools
- Visualization tools of oceanographic data: Matlab, Ocean Data View, MEOM tool based on NCAR graphics
- 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), ...

Oceanographic campaigns

Participation to oceanographic campaigns:
- 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.

Driving licence

- B

ADDITIONAL INFORMATION

Publications

- Von Schuckmann, K. et al., 2017: « The Copernicus Marine Environment Monitoring Service Ocean State report ». *Journal of Operational Oceanography, 9, S2, s235-s320, http://dx.doi.org/10.1080/1755876X.2016.1273446*.
- **Juza**, M., R. Escudier, A. Pascual, M.-I. Pujol, C. Troupin, B. Mourre, and J. Tintoré, 2016: « Improvement of reprocessed altimetry absolute dynamic topography: the Western Alboran Gyre variability ». *Advances in Space Research, 58, 277-288, http://dx.doi.org/10.1016/j.asr.2016.05.026*.
- Escudier, R., B. Mourre, M. **Juza**, and J. Tintoré, 2016: « Sub-surface circulation and mesoscale variability in the Algerian sub-basin from altimeter-derived eddy trajectories ». *Journal of Geophysical Research, 121, 6310-6322, doi:10.1002/2016JC011760*.
- **Juza** et al., 2016: « SOCIB operational ocean forecasting system and multi-platform validation in the western Mediterranean Sea ». *Journal of Operational Oceanography, 9: sup1, s155-s166, doi: 10.1080./1755876X.2015.1117764.*
- Capo, E., J.M. Sayol, D. Conti, M. **Juza**, S. Ruiz, M.G. Sotillo, E. García-Ladona, G. Simarro, B. Mourre, J. Tintoré, and A. Orfila, 2016: « Assessment of operational models in the Balearic Sea during the MEDESS experiment ». *Deep Sea Research Part II, doi:10.1016/j.dsr2.2016.03.009*.
- Alvarez-Berastegui, D., J.M. Hidalgo, M.P. Tugores, P. Reglero, A. Aparacio, L. Ciannelli, M. **Juza**, B. Mourre, A. Pascual, J.L. Lopez-Jurado, A. García, J.M. Rodriguez, J. Tintoré, and F. Alemany, 2016: « Pelagic seascape ecology for operational fisheries oceanography: modeling and predicting spawning distribution of Atlantic Bluefin tuna in western Mediterranean». *ICES Journal of Marine Science, doi:10.1093/icesjms/fsw041.*
- **Juza** et al., 2015: « WMOP: Western Mediterranean SOCIB high-resolution ocean forecasting system ». *Submitted to 7th EuroGOOS conference, full paper.*
- **Juza**, M., B. Mourre, and J. Tintoré, 2015: « Assessment and intercomparison of numerical simulations in the western Mediterranean: a multi-variable and multi-scale approach ». *Submitted to 7th EuroGOOS conference, full paper.*
- **Juza**, M., B. Mourre, J.-M- Lellouche, M. Tonani, and J. Tintoré, 2015: « From basin to sub-basin scale assessment and intercomparison of numerical simulations in the western Mediterranean Sea ». *Journal of Marine Systems, 149, 36-49, doi:10.1016/j.jmarsys.2015.04.010.*
- **Juza**, M., L. Renault, S. Ruiz, and J. Tintoré, 2013: « Origin and pathways of Winter Intermediate Water in the North-western Mediterranean Sea using observations and numerical simulation ». *Journal of Geophysical Research: oceans, 118, 1-13, doi:10.1002/2013JC009231.*
- **Juza**, M., T. Penduff, B. Barnier, J.-M. Brankart, 2012: « Estimating the distortion of the mixed layer property distributions induced by the ARGO sampling ». *Journal of Operational Oceanography, 5, 1.*
- Hasson, A., A. Koch-Larrouy, R. Morrow, M. **Juza**, and T. Penduff, 2011: « The origin and fate of mode water in the Southern Pacific Ocean ». *Ocean Dynamics, 62, 335-354, doi:10.1007/s10236-011-0507-3.*
- **Juza**, M., T. Penduff, and B. Barnier, 2011: « How should the Argo array be extended to better monitor the Global Ocean heat content variability? ». *Mercator Ocean Quarterly Newsletter, special issue with Coriolis, 41*.
- Penduff, T., M. **Juza**, B. Barnier, J. Zika, W.K. Dewar, A.-M. Treguier, J.-M. Molines, and N. Audiffren, 2011: « Sea-level expression of intrinsic and forced ocean variabilities at interannual time scales ». *Journal of Climate, 24, 5652–5670, doi :10.1175/JCLI-D-11-00077.1.*
- Penduff, T., M. **Juza**, L. Brodeau, G.C. Smith, B. Barnier, J.-M. Molines, A.-M. Treguier and G. Madec, 2010: « Impact of global ocean model resolution on sea-level variability with emphasis on interannual time scales ». *Ocean Science, 6, 269–284.*
- Mathiot, P., B. Barnier, H. Gallée, J.-M. Molines, J. Le Sommer, M. **Juza**, and T. Penduff, 2010: « Introducing katabatic winds in global ERA40 fields to simulate their impact on the Southern Ocean and sea-ice ». *Ocean Modelling, 35, 3, 146-160. doi:10.1016/j.ocemod.2010.07.001*.
- Koch-Larrouy, A., R. Morrow, T. Penduff, and M. **Juza**, 2010: « Origin and mechanism of Sub Antarctic Mode Water formation and transformation in the Southern Indian Ocean ». *Ocean Dynamics, doi:10.1007/s10236-010-0276-4*.
- Penduff, T., M. **Juza**, and B. Barnier, 2007: « Assessing the realism of ocean simulations against hydrography and altimetry ». *Clivar Exchanges, No 42 (vol 12 No 3), 11-12.*
- Le Sommer, J., B. Barnier, L. Brodeau, M. **Juza**, G. Madec, P. Mathiot, J.-M. Molines, T. Penduff and A.-M. Tréguier, 2007: « Southern Ocean processes and climate variability in the DRAKKAR hierarchy of ocean/sea-ice models ». *Mercator Ocean Quarterly Newsletter*. http://www.mercator-ocean.fr/documents/lettre/lettre_27_en.pdf.

Reports and documentations of processing tools

- **Juza**, M., 2016: « Integration of glider data in the operational validation of the WMOP forecasting system». Internal report, SOCIB, Palma de Mallorca, Spain.
- **Juza**, M., 2016: « Procedures to analyse atmospheric and oceanic conditions during specific jellyfish events». Technical report, SOCIB, Palma de Mallorca, Spain.
- **Juza**, M., 2008: « Collocation and validation tools for the DRAKKAR ensemble simulations ». Technical report, MEOM-LEGI, Grenoble, France.
- Brankart, J.-M., F. Castruccio, M. **Juza**, Y. Ourmières, 2008: « A set of operators for ocean NetCDF files ». Technical report, MEOM-LEGI, Grenoble, France.

Contributions to national and international projects

- CMEMS INSTAC: coordination of INSTAC for contributions to Ocean State Report (2015-present).
- CMEMS MED-MFC: development and implementation of model-glider comparisons in the Copernicus CalVal system (2016-present).
- JERICO-Next: contribution to JRAP6: WMOP assessment in the Ibiza Channel using coastal observations (2017-present).
- MEDCLIC [Caixa Foundation – SOCIB]: contribution to the study of circulation variability in the Mediterranean (2015-present).
- BLUEFIN TUNA [SOCIB-IEO]: participation to the development of predictive models of Bluefin Tuna spawning locations (2012-present).
- 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: 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).