





## PERSONAL INFORMATION

### Maria Manuela (Emma) Reyes Reyes

Ph.D. in Marine Sciences, Physical Oceanographer

	SOCIB - Edificio Naorte. Bloque A, 2º piso, puerta 3, Parc Bit, 07122 Palma
	+34 971 43 98 08
	<a href="mailto:ereyes@socib.es">ereyes@socib.es</a>
	<a href="https://twitter.com/ReyesReyesEmma">@ReyesReyesEmma</a>
Google Scholar	<a href="https://scholar.google.es/citations?hl=en&amp;user=aww-lzoAAAAJ">https://scholar.google.es/citations?hl=en&amp;user=aww-lzoAAAAJ</a>
ORCID	<a href="https://orcid.org/0000-0003-4350-739X">https://orcid.org/0000-0003-4350-739X</a>
ResearcherID	<a href="https://www.researchgate.net/profile/Emma_Reyes">https://www.researchgate.net/profile/Emma_Reyes</a>
OceanExpert	<a href="https://www.oceanexpert.net/expert/ereyes">https://www.oceanexpert.net/expert/ereyes</a>
Nationality	Spanish

## EDUCATION

- 2015 European Ph.D. in Marine Sciences  
University of Cadiz, Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, Cadiz, Spain.  
**PhD Thesis Title:** "A high-resolution modelling study of the ocean response to wind forcing within the Strait of Gibraltar". [DOI: 10.13140/RG.2.2.28881.07525](https://doi.org/10.13140/RG.2.2.28881.07525) and URI: <http://hdl.handle.net/10498/17501>  
**Advisors:** PhD. Alfredo Izquierdo González and PhD. Miguel Bruno Mejías
- 2005 Advances Studies Diploma in Marine Sciences  
Cadiz University, Cadiz, Spain
- 2003 B. Sc. Marine Sciences  
Cadiz University, Cadiz, Spain

## WORK EXPERIENCE

- CURRENT POSITION**  
February 2016 present  
Head of Coastal High-Frequency radar facility, SOCIB  
Balearic Islands Coastal Observing and forecasting System (SOCIB)
- Calibration and operation of the HF radar system from the Ibiza Channel (daily remote check, data flow and backup; near-real time and delay-mode validation; development and implementation of added-value HFR data products; APM calibration).
  - Preparation and participation in validation experiments in the Ibiza Channel.
  - Identification of surface circulation patterns and its variability in the Ibiza Channel.
  - Coordination and writing of research grant proposals.
  - Work jointly with other scientists in the context of the HF radar networks (at European and Global level) and in the scope of international funded projects.
  - Coordination of public-private partnership projects.
  - Representation of SOCIB-HF radar Facility at local, national and international scene.
  - Representation of SOCIB-HF radar Facility at outreach events organized by other members of the Outreach and Education Facility.
- July 2015  
February 2016  
Post-doctoral researcher position  
Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.
- Improvement and maintenance of the met-ocean forecast.
  - Data acquisition, processing and analysis.
  - Design and technical support for research oceanographic cruises.
  - Creation of bash-scripts to automate routine tasks within the scope of the operational oceanography system.
  - Assisting in the development and preparation of continuing funding opportunities.
- October 2014  
June 2015  
Early-Career Researcher position  
Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.
- Implementation of data storage optimization routines.
  - Maintenance of the web-based GIS Operational Oceanography System.
  - Upgrading of OceanUCA-Maps by the addition of WMS, GIS and new met-ocean layers.

- Inter-comparison of oil spills drift models.
- Participation and presentation of results in workshops.
- Communication and dissemination project activities.
- Edition of technical reports.
- Participation on modelling exercises involving main end-users.

March 2014  
October 2014

Researcher position

Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.

- Hydrodynamic characterization of the North-Atlantic Coast of the Strait of Gibraltar.
- Assessment of tidal energy resource and identification of the best suitable locations for marine renewable energy.

April 2013  
February 2014

Researcher position

Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.

- Improvement and optimization of the automation processes for the model forecasts.
- Met-ocean modelling and performance assessment.
- Oil spill modelling simulations.
- Supervision of the development of user-friendly web decision-support tool.

January 2012  
January 2013

Researcher position

Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.

- Quality assessment of CODAR SeaSonde HF radar current measurements from the Strait of Gibraltar against ADCPs observations, Lagrangian drifters trajectories and sea surface temperature as well as ocean color satellite images.
- Data acquisition, processing and analysis.
- Study the surface current patterns measured by the HF radar, by applying Empirical Orthogonal Functions.
- Ocean model-HFR inter-comparison.
- Study of the subinertial variability of HF radar surface currents related to changes in atmospheric pressure over Ligurian sea.

May 2009  
December 2011

Researcher position

Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.

- Improvement of the local ocean model's results including the effect of wind forcing.
- Meteo-ocean model performance assessment (wind-forced ocean model and the ocean-alone model with tidal forcing).
- Study of the wind induced circulation patterns.
- Participation in fieldwork design for oceanographic surveys.
- Data acquisition and processing.
- Edition of reports.

May 2006  
January 2007

Researcher position

Applied Physics Department, Physical Oceanography: Dynamics (ref. RNM-2015) research group, University of Cadiz, Cadiz, Spain.

- Implementation of the mesoscale atmospheric model MM5 in the Andalusian region.
- Model performance evaluation against meteorological measurements from automatic weather stations over land and meteo-ocean buoys.
- Development of GrADS scripts for model outputs display through web interfaces.

RESEARCH  
Publications

1. Lorente, P., Aguiar, E., Bondoni, M., Berta, M., Brandini, C. Cáceres-Euse, A., Capodici, F., Cianelli, D., Ciraolo, G. Corgnati, L., Dadić, V., Doronzo, B., Drago, A., Dumas, D., Falco, P., Fattorini, M., Gauci, A., Gómez, R., Griffa, A., Guérin, C-A., Hernández-Carrasco, I. Hernández-Lasheras, J., Ličer, M., Magaldi, M., Mantovani, C., Mihanović, H., Molcard, A., Murre, B., Orfila, A., Révelard, A., **Reyes, E.**, Sánchez, J., Saviano, S., Sciascia, R., Taddei, S., Tintoré, J., Toledo, Y., Ursella, L., Uttieri, M., Vilbić, I., Zambianchi, E., Cardin, V. Coastal HF radars in the Mediterranean: Status of operations and a framework for future development, *Ocean Sci. Discuss.* [preprint], <https://doi.org/10.5194/os-2021-119>, in review, 2021.
2. **Reyes, E.**, Aguiar, E., Bondoni, M., Berta, M., Brandini, C. Cáceres-Euse, A., Capodici, F., Cardin, V. Cianelli, D., Ciraolo, G. Corgnati, L., Dadić, V., Doronzo, B., Drago, A., Dumas, D., Falco, P., Fattorini, M., Fernandes, M.J., Gauci, A., Gómez, R., Griffa, A., Guérin, C-A., Hernández-Carrasco, I. Hernández-Lasheras, J., Ličer, M., Lorente, P., Magaldi, M., Mantovani, C., Mihanović, H., Molcard, A., Murre, B., Révelard, A., Reyes-Suárez, C., Saviano, S., Sciascia, R., Taddei, S., Tintoré, J., Toledo, Y., Uttieri, M., Vilbić, I., Zambianchi, E., Orfila, A. (preprint under review). Coastal HF radars in the Mediterranean: Applications in support of science priorities and societal needs, *Ocean Sci. Discuss* [preprint], <https://doi.org/10.5194/os-2021-115>, in review, 2021
3. Rubio, A., Solabarieta, L., Corgnati, L., Mantovani, C., **Reyes, E.**, Rotllán-García, P., Novellino, A., Goringe, P., Griffa, A., and Mader, J. (2021). Building a reliable and standardized long-term data set of surface coastal ocean currents from the European HF Radars. In: Fernandez Vicente, Lara-Lopez Ana, Eparkhina Dina, Cocquempot Lucie, Lochet Corine, Lips Inga (eds.) (2021). *Advances in operational oceanography : expanding Europe's ocean observing and forecasting capacity. Proceedings of the 9th EuroGOOS International Conference. 3 – 5 May 2021, Online Event 2021, EuroGOOS. Brussels, Belgium.* 574 pp. <https://archimer.ifremer.fr/doc/00720/83160/>
4. Corgnati, L., Mantovani, C., Rubio, A., **Reyes, E.**, Rotllán, P., Novellino, A., Goringe, P., Solabarieta, L., Griffa, A., and Mader, J. (2021). The EuroGOOS High Frequency Radar Task Team: a success story of collaboration. To be kept alive and made growing. In: Fernandez Vicente, Lara-Lopez Ana, Eparkhina Dina, Cocquempot Lucie, Lochet Corine, Lips Inga (eds.) (2021). *Advances in operational oceanography : expanding Europe's ocean observing and forecasting capacity. Proceedings of the 9th EuroGOOS International Conference. 3 – 5 May 2021, Online Event 2021, EuroGOOS. Brussels, Belgium.* 574 pp. <https://archimer.ifremer.fr/doc/00720/83160/>
5. Hernández-Lasheras, J., Murre, B., Orfila, A., Santana, A., **Reyes, E.**, & Tintoré, J. (2021). Evaluating High-Frequency radar data assimilation impact in coastal ocean operational modelling. *Ocean Science Discussions*, 2021, 1–29. <https://doi.org/10.5194/os-2021-34>
6. Révelard, A., **Reyes, E.**, Murre, B., Hernández-Carrasco, I., Rubio, A., Lorente, P., Fernández, C. D. L., Mader, J., Álvarez-Fanjul, E., & Tintoré, J. (2021). Sensitivity of Skill Score Metric to Validate Lagrangian Simulations in Coastal Areas: Recommendations for Search and Rescue Applications. In *Frontiers in Marine Science* (Vol. 8, p. 191). <https://www.frontiersin.org/article/10.3389/fmars.2021.630388>
7. Lorente, P., Lin-Ye, J., García-León, M., **Reyes, E.**, Fernandes, M., Sotillo, M. G., Espino, M., Ruiz, M. I., Gracia, V., Perez, S., Aznar, R., Alonso-Martirena, A., & Álvarez-Fanjul, E. (2021). On the Performance of High Frequency Radar in the Western Mediterranean During the Record-Breaking Storm Gloria. *Frontiers in Marine Science* 8, (p. 205) doi:[10.3389/fmars.2021.645762](https://doi.org/10.3389/fmars.2021.645762)
8. Alexander Barth, Charles Troupin, **Emma Reyes**, Aida Alvera Azcarate and Jean-Marie Beckers, Joaquín Tintoré (2021). Variational interpolation of high-frequency radar surface currents using DIVAnd. *Ocean Dynamics*, Vol. 71, Issue 2. <https://doi.org/10.1007/s10236-020-01432-x>
9. M. Berta, L. Corgnati, M. G. Magaldi, A. Griffa, C. Mantovani, A. Rubio, **E. Reyes** and J. Mader (2020). Small scale ocean weather during an extreme wind event in the Ligurian Sea. In: Copernicus Marine Service Ocean State Report, Issue 4, *Journal of Operational Oceanography*, 13:sup1, s149–s155; <http://doi.org/10.1080/1755876X.2020.1785097>
10. **E. Reyes**, I. Hernández-Carrasco, A. Révelard, B. Murre, P. Rotllán, E. Comerma, T. Tajalli Bakhsh, A. Rubio, J. Mader, L. Ferrer, C. De Lera Fernández, E. Álvarez-Fanjul and J. Tintoré (2020). IBISAR service for real-time data ranking in the IBI area for emergency responders and SAR operators. In: Copernicus Marine Service Ocean State Report, Issue 4, *Journal of Operational Oceanography*, 13:sup1, s92–s99; <http://doi.org/10.1080/1755876X.2020.1785097>
11. A. Rubio, I. Hernández-Carrasco, A. Orfila, M. González, **E. Reyes**, L. Corgnati, M. Berta, A. Griffa and J. Mader (2020). A Lagrangian approach to monitor local particle retention conditions in coastal areas. In: Copernicus Marine Service Ocean State Report, Issue 4, *Journal of Operational Oceanography*, 13:sup1, s54–s59; <http://doi.org/10.1080/1755876X.2020.1785097>
12. I. Ruiz-Parrado, A. Genua-Olmedo, **E. Reyes**, B. Murre, P. Rotllán, P. Lorente, M. García-Sotillo and J. Tintoré (2020). Coastal ocean variability related to the most extreme Ebro River discharge over the last 15 years. In: Copernicus Marine Service Ocean State Report, Issue 4, *Journal of Operational Oceanography*, 13:sup1, s160–s165; <http://doi.org/10.1080/1755876X.2020.1785097>
13. Mantovani C., Corgnati L., Horstmann J., Rubio A., **Reyes E.**, Quentin C., Cosoli S., Asensio J.L., Mader J., Griffa A. (2020). “Best Practices on High Frequency Radar Deployment and Operation for Ocean

- Current Measurement" [Review]. *Frontiers in Marine Science*. 7(210). <https://doi.org/10.3389/fmars.2020.00210>
14. Aguiar E., Mourre B., Juza M., **Reyes E.**, Hernández-Lasheras J., Cutolo E., Mason E., Tintoré J. (2020). "Multi-platform model assessment in the Western Mediterranean Sea: impact of downscaling on the surface circulation and mesoscale activity". *Ocean Dynamics* 70, 273–28, <https://doi.org/10.1007/s10236-019-01317-8>
  15. Tintoré, J., N. Pinardi, E. Álvarez-Fanjul, E. Aguiar, D. Álvarez-Berastegui, M. Bajo, R. Balbin, R. Bozzano, B. B. Nardelli, V. Cardin, B. Casas, M. Charcos-Llorens, J. Chiggiato, E. Clementi, G. Coppini, L. Coppola, G. Cossarini, A. Deidun, S. Deudero, F. D'Ortenzio, A. Drago, M. Drudi, G. El Serafy, R. Escudier, P. Farcy, I. Federico, J. G. Fernández, C. Ferrarin, C. Fossi, C. Frangoulis, F. Galgani, S. Gana, J. García Lafuente, M. G. Sotillo, P. Garreau, I. Gertman, L. Gómez-Pujol, A. Grandi, D. Hayes, J. Hernández-Lasheras, B. Herut, E. Heslop, K. Hilmi, M. Juza, G. Kallos, G. Korres, R. Lecci, P. Lazzari, P. Lorente, S. Liubartseva, F. Louanchi, V. Malacic, G. Mannarini, D. March, S. Marullo, E. Mauri, L. Meszaros, B. Mourre, L. Mortier, C. Muñoz-Mas, A. Novellino, D. Obaton, A. Orfila, A. Pascual, S. Pensieri, B. Pérez Gómez, S. Pérez Rubio, L. Perivoliotis, G. Petihakis, L. P. de la Villéon, J. Pistoia, P.-M. Poulain, S. Pouliquen, L. Prieto, P. Raimbault, P. Reglero, **E. Reyes**, P. Rotllan, S. Ruiz, J. Ruiz, I. Ruiz, L. F. Ruiz-Orejón, B. Salihoglu, S. Salon, S. Sammartino, A. Sánchez Arcilla, A. Sánchez-Román, G. Sannino, R. Santoleri, R. Sardá, K. Schroeder, S. Simoncelli, S. Sofianos, G. Sylaios, T. Tanhua, A. Teruzzi, P. Testor, D. Tezcan, M. Torner, F. Trotta, G. Umgiesser, K. von Schuckmann, G. Verri, I. Vilibic, M. Yucel, M. Zavatarelli and G. Zodiatis (2019). "Challenges for Sustained Observing and Forecasting Systems in the Mediterranean Sea." *Frontiers in Marine Science* 6(568). <https://doi.org/10.3389/fmars.2019.00568>
  16. Rubio, A., Manso-Narvarte, I., Caballero, A., Corgnati, L., Mantovani, C., **Reyes, E.**, Griffa, A. and Mader, A. (2019). The seasonal intensification of the slope Iberian Poleward Current. In: "Copernicus Marine Service Ocean State Report, Issue 3." *Journal of Operational Oceanography* 12(sup1): S1-S123. <https://doi.org/10.1080/1755876X.2019.1633075>
  17. González, C. J., **E. Reyes**, Ó. Álvarez, A. Izquierdo, M. Bruno and R. Mañanes (2019). "Surface currents and transport processes in the Strait of Gibraltar: Implications for modeling and management of pollutant spills". *Ocean & Coastal Management* 179: 104869. <https://doi.org/10.1016/j.ocecoaman.2019.104869>
  18. Roarty, H., T. Cook, L. Hazard, D. George, J. Harlan, S. Cosoli, L. Wyatt, E. Alvarez Fanjul, E. Terrill, M. Otero, J. Largier, S. Glenn, N. Ebuchi, B. Whitehouse, K. Bartlett, J. Mader, A. Rubio, L. Corgnati, C. Mantovani, A. Griffa, **E. Reyes**, P. Lorente, X. Flores-Vidal, K. J. Saavedra-Matta, P. Rogowski, S. Prukpitikul, S.-H. Lee, J.-W. Lai, C.-A. Guerin, J. Sanchez, B. Hansen and S. Grilli (2019). "The Global High Frequency Radar Network." *Frontiers in Marine Science* 6(164). <https://doi.org/10.3389/fmars.2019.00164>
  19. Mourre, B., E. Aguiar, M. Juza, J. Hernández-Lasheras, **E. Reyes**, E. Heslop, R. Escudier, E. Cutolo, S. Ruiz, E. Mason, A. Pascual and J. Tintoré (2018). Assessment of high-resolution regional ocean prediction systems using multi-platform observations: Illustrations in the Western Mediterranean Sea". *New Frontiers in Operational Oceanography*. GODAE OceanView. E. P. Chassignet, A. Pascual, J. Tintoré and J. Verron. Tallahassee, Florida: 81. <https://doi.org/10.17125/gov2018.ch24>
  20. Hernández-Carrasco I., Solabarrieta, L., Rubio, A., Esnaola, G., **Reyes, E.**, and Orfila, A. (2018). Impact of HF radar currents gap-filling methodologies on the Lagrangian assessment of coastal dynamics. *Ocean Sci. Discuss.* <https://doi.org/10.5194/os-2018-26>
  21. Dastis, C., A. Izquierdo, M. Bruno, **E. Reyes**, E. Sofina and N. L. Plink (2018). "Influence of the atmospheric pressure fluctuations over the Mediterranean Sea on the mesoscale water dynamics of the Strait of Gibraltar and the Alboran Sea." *Fundamentalnaya i Prikladnaya Gifrofizika* 11(1): 29-39. <https://doi.org/10.7868/S2073667318010033>
  22. Chioua, J., C. Dastis, C. J. González, **E. Reyes**, R. Mañanes, M. I. Ruiz, E. Álvarez, Yanguas, J. Romero, O. Álvarez and M. Bruno (2017). "Water exchange between Algeciras Bay and the Strait of Gibraltar: A study based on HF coastal radar". *Estuarine, Coastal and Shelf Science*. Volume 196, 5 September 2017, Pages 109-122. <https://doi.org/10.1016/j.ecss.2017.06.030>
  23. Chioua J., Bruno M., Vázquez A., **Reyes M.**, Gomiz J. J., Mañanes R., Álvarez O., González C. J., López L., Gómez-Enri J. (2013). "Internal waves in the Strait of Gibraltar and their role in the vertical mixing processes within the Bay of Algeciras". *Estuarine, Coastal and Shelf Science*, 126, 70-86 pp. <https://doi.org/10.1016/j.ecss.2013.04.010>
  24. Ramirez-Romero E., Macias D., Bruno M., **Reyes E.**, Navarro G., and García C.M. (2012). "Submesoscale, tidally-induced biogeochemical patterns in the Strait of Gibraltar". *Estuarine, Coastal and Shelf Science*, 101,24-32 pp. <http://doi.org/10.1016/j.ecss.2012.02.010>
  25. Plomaritis, T., Benavente, J., del Rio, L., **Reyes, E.**, Dastis, C., Gomez, M., and Bruno, M. (2012). "Storm Early warning system as a last plug-in of a regional operational oceanography system: the case of the Gulf of Cadiz". *Coastal Engineering Proceedings*, 1(33), management.54. <http://dx.doi.org/10.9753/icce.v33.management.54>
  26. A. Álvarez and **E. Reyes** (2010). "Volumetric estimation of thermal fields inferred from glider-like and remote sensing measurements in under-sampled coastal regions". *Journal of Geophysical Research*, 115, C11006. <https://doi.org/10.1029/2009JC005791>.

Reports and  
guidelines

- Marasco, M., **Reyes, E.**, Fernández, J.G., Charcos, M., Notario, X., Rotllán, P., Rújula, M.A., Tintoré, J. (2021). SOCIB - Coastal High Frequency Radar Data Management Plan (Version 1.0). Balearic Islands Coastal Observing and Forecasting System, SOCIB. <https://doi.org/10.25704/ydas-qz53>
- Rubio, A., **Reyes, E.**, Mantovani, C., Corgnati, L., Lorente, P., Solabarrieta, L., Mader, J., Fernández, V., Pouliquen, S., Novellino, A., Karstensen, J. and Petihakis, G.: European High Frequency Radar network governance, D3.4 . EuroSea Deliverable, 41 pp., [doi:10.3289/eurosea\\_d3.4](https://doi.org/10.3289/eurosea_d3.4), 2021.
- **Reyes, E.**, Rotllán, P., Rubio, A., Corgnati, L., Mader, J., & Mantovani, C. (2019). Guidelines on how to sync your High Frequency (HF) radar data with the European HF Radar node (Version 1.2). Balearic Islands Coastal Observing and Forecasting System, SOCIB. <https://doi.org/10.25704/9XPF-76G7>
- Horstmann, J. Corgnati, L., Mantovani, C., Quentin, C., **Reyes, E.**, Rubio, A., del Río, J., and Berry A. (2019) Report on Best Practice in the implementation and use of new systems in JERICO-RI. Part 1: HF-radar systems and Part 2: Cabled coastal observatories. WP2, Deliverable 2.4. Version 1.0. Brest, France, Ifremer for JERICO-NEXT, 141pp. (JERICO-NEXT-W2-D2.4.-07052019-V1.0). DOI: <http://dx.doi.org/10.25607/OBP-1005>
- **Reyes, E.**, I. Ruiz, B. Frontera, M. A. Rújula, T. Cañellas and J. Tintoré (2017). SOCIB - INCREASE-CMEMS Second Consultancy Report., HF Radar Facility and Data Center. December 2017. This second and final report represents the contributions and results of SOCIB HF Radar Facility and Data Center of the consultancy services to ETT Solutions about the best practices, innovation and networking for the integration of Coastal Radar into (European) marine services in the framework of INCREASE-CMEMS project (CMEMS Service Evolution 21-SE-CALL1) along the year 2017.
- **E. Reyes** and C. Troupin (2016). "SOCIB – INCREASE CMEMS. First Consultancy Report. HF Radar Facility and Data Center". December 2016. This report represents the contributions and results of SOCIB HF radar Facility and Data Center of the consultancy services to ETT Solutions about the best practices, innovation and networking for the integration of the coastal radar into European marine services in the framework of INCREASES-CMEMS project.
- A. Álvarez and **E. Reyes** (2009). "Mission planning of gliders guided by remote sensing". NATO Technical Report Unclassified. [NURC-FR-2009-004](https://doi.org/10.25704/17GS-2B59).
- A. Izquierdo, R. Mañanes, M. Bruno, Ó. Álvarez and **M. Reyes** (2007). "Characterization of marine dynamics and its effects on fish cages from the off-shore fish farm PIAGUA (Piscifactoría de Aguadulce) in Almería".
- A. Izquierdo, R. Mañanes, M. Bruno and **M. Reyes** (2007). "Study of the hydrodynamic conditions of Salado River and the coastal area from the mouth of the river to the Roche Cape"
- Hernández I., Echevarría F., Haddad I., Navarro G., Ortega A., **Reyes M.**, Nebot E., Perales J.A., Garrido M.C., Manzano M., Acevedo A., Pérez-Lloréns J.L., Guadix S., González-Duarte M., Mourente G., Medina A., Abascal F.J., Brun F.G., Rivero J.L., Lebrero J.C., Acuña R., Revuelta R. (2006). "Marine biology and ecology study for the environmental impact assessment of the off-shore wind farm of Cadiz"
- A. Izquierdo, R. Mañanes, M. Bruno, **M. Reyes Reyes** (2005). "Hydrodynamic characterization of the coastal strip of Roche Cape (Conil)"

Published  
Datasets

- Tintoré, J., Lana, A., Marmain, J., Fernández, V., Casas, B., & **Reyes, E.** (2020). HF Radar Ibiza data from date 2012-06-01 (Version 1.0) [Data set]. Balearic Islands Coastal Observing and Forecasting System, SOCIB. <https://doi.org/10.25704/17GS-2B59>
- **Reyes, E.**, Mourre, B., Wirth, N., Balaguer, P., Casas, B., Troupin, C., Muñoz, C., Orfila, A., & Tintoré, J. (2020). SOCIB INT RadarAPM Jul2016. Lagrangian Experiment Ibiza Channel (Version 1.0) [Data set]. Balearic Islands Coastal Observing and Forecasting System, SOCIB. <https://doi.org/10.25704/BB7M-ZV61>
- **Reyes, E.**, Mourre, B., Hernández-Lasheras, J., Hernández-Carrasco, I., Wirth, N., Balaguer, P., Casas, B., & Tintoré, J. (2020). SOCIB INT RadarAPM Nov2018. Lagrangian Experiment Ibiza Channel (Version 1.0) [Data set]. Balearic Islands Coastal Observing and Forecasting System, SOCIB. <https://doi.org/10.25704/84ZE-SF42>

Oral  
Presentations

1. Lorente, P., **Reyes, E.**, et al., Coastal HF radars in the Mediterranean: status of operations and multidisciplinary science-based applications. 10<sup>th</sup> MONGOOS workshop. 26-28 Oct, 2021, virtual
2. **Reyes E.** IBISAR service: Supporting operations and emergency response at sea. Ocean Protection and monitoring technologies and services workshop for stakeholders' engagement. 20 Oct, 2021, virtual.
3. **Reyes E.** IBISAR: helping SAR operators and emergency responders to select the most accurate ocean forecast. SICOMAR-Plus HF Radar Summer School, 26-28 May, 2021, virtual.
4. **Reyes, E.**, Lorente, P et al., 2021. Mediterranean High-Frequency radar network: regional coordinated efforts meeting end users and science-driven requirements. Ninth International Conference of EuroGOOS, 3-5 May, virtual.
5. Corgnati, L., Mantovani, C., Rubio, A., **Reyes, E.**, Rotllán, P., Novellino, A., Gorringer, P., Solabarrieta, L., Griffa, A., Mader, J., 2021. The EuroGOOS High Frequency Radar Task Team: a success story of collaboration. To be kept alive and made growing. Ninth International Conference of EuroGOOS, 3-5 May, virtual.
6. Rubio, A., Solabarrieta, L., Corgnati, L., Mantovani, C., **Reyes, E.**, Rotllán, P., Novellino, A., Griffa, A., Mader, J.. Building a reliable and standardized long-term data set of surface coastal ocean currents from the European HF radars. Ninth International Conference of EuroGOOS, 3-5 May, 2021, virtual.

7. Hernandez Lasheras, J., Mourre, B., Orfila, A., Santana, A., **Reyes, E.**, and Tintoré, J.: Comparing High Frequency Radar radial and total derived observations capability to correct surface currents using Data Assimilation, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-15588, <https://doi.org/10.5194/egusphere-egu21-15588>, 2021
8. **Reyes Reyes, E.**: IBISAR downstream service: one year of supporting emergency response at sea, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-14919, <https://doi.org/10.5194/egusphere-egu21-14919>, 2021
9. Lorente, P. and the RADAR-MED: The High Frequency coastal radar network in the Mediterranean: joint efforts towards a fully operational implementation, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-16311, <https://doi.org/10.5194/egusphere-egu21-16311>, 2021
10. Lorenzo Corgnati, Carlo Mantovani, Anna Rubio, **Emma Reyes**, Paz Rotllán, Antonio Novellino, Patrick Gorringe, Jose Luis Asensio Igoa, Annalisa Griffa and Julien Mader. The European HF Radar node: two years distributing standardized and quality-controlled data to the major European Marine Data Portals. *Bollettino di Geofisica*, Vol.62 (124:125)- Supplement 1 (2021). IMDIS Conference, Online, 12-14 April, 2021.
11. **Emma Reyes**. "Scientific and Societal applications of High Frequency Radar surface currents from the Ibiza Channel". Ferry Box and High Frequency Radar Joint Workshop (online), 17-18 March, 2021.
12. **Emma Reyes**. "IBISAR: one year of supporting emergency response at sea". Copernicus Marine Service – General Assembly (online), 26-28 January, 2021.
13. **Emma Reyes** "Los radares de alta frecuencia: un componente esencial de los sistemas de observación costeros". VI Jornadas Doctorales Escuela Internacional de Doctorado en Estudios del Mar (EIDEMAR). Universidad de Cádiz. On-line (Campus virtual UCA), 1-2-December, 2020. Invited Talk.
14. **Emma Reyes**, A. Révelard, B. Mourre, P. Rotllán, I. Hernández, A. Rubio, P. Lorente, C. De Lera Fernandez, J. Mader, E. Álvarez-Fanjul, J. Tintoré. "IBISAR: one year of supporting emergency response at sea". MonGOOS virtual Workshop, 24-25 November, 2020.
15. **Emma Reyes**, Joaquín Tintoré et al. "Ocean Observatories. SOCIB: A multi-platform integrated ocean observing and forecasting system". MarRISK workshop, Santiago de Compostela (Spain), 19-20 October, 2020. Invited Talk.
16. Corgnati, L., Mantovani, C., Rubio, A., Mader, J., **Reyes, E.**, Asensio Igoa, J. L., Novellino, A., Gorringe, P., and Griffa, A.: The European HF Radar Node: focal point to promote land-based remote sensing of coastal surface currents and its applications, EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020-1537, <https://doi.org/10.5194/egusphere-egu2020-1537>, 2019
17. **Emma Reyes**, Pablo Lorente, Nydia Catalina Reyes Suarez, Aldo Drago, Adam Gauci, Giuseppe Ciruolo, Fulvio Capodici, Enrico Zambianchi, Pierpaolo Falco, Marco Uttieri, Lorenzo Corgnati, Carlo Mantovani, Alkiviadis Kalampokis, Gerasimos Korres, Vassilis Zervakis, Carlo Brandini, Stefano Taddei, Matjaz Licer, Branko Čermelj, Charles-Antoine Guérin, Anne Molcard, Vanessa Cardin, Enrique Álvarez-Fanjul, Joaquín Tintoré. "Unlocking HF radar data potential for scientific and societal applications" (submitted). MONGOOS Workshop, Trieste (Italy) 3-5 December 2019.
18. Alvarez-Berastegui D., **Reyes E.**, Mourre B., Alou E., Allen J., Cabornero A., March D., Rotllán P., Fernández J.G. Hernández-Lasheras J., Révelard A., Ruiz I, Tintoré J. "Integrated operational oceanography in response to science and society needs in the Western Mediterranean Sea" (submitted). MONGOOS Workshop, Trieste (Italy) 3-5 December 2019.
19. **Emma Reyes**, Adèle Révelard, Baptiste Mourre, Paz Rotllán, Eric Comerma, Tayebah Tajalli Bakhsh, Anna Rubio, Julien Mader, Luis Ferrer, Christian de Lera Fernández, Enrique Álvarez-Fanjul and Joaquín Tintoré. "IBISAR downstream service: unlocking HF radar data potential for maritime safety and environmental applications" EuroGOOS HFR Task Team workshop, San Sebastian (Spain), 13-14 November 2019.
20. **Emma Reyes**, Adèle Révelard, Baptiste Mourre, Paz Rotllán and Joaquín Tintoré. "Contribution of coastal HF Radar to enhance maritime safety and environmental applications". Radiowave Oceanography Workshop, Ocean Networks Canada (Victoria, BC, Canada), 28-30 August 2019.
21. Adèle Révelard, **Emma Reyes**, Baptiste Mourre, Paz Rotllán, Eric Comerma, Tayebah Tajalli Bakhsh, Anna Rubio, Julien Mader, Luis Ferrer, Christian de Lera Fernández, Enrique Álvarez-Fanjul and Joaquín Tintoré. "IBISAR downstream service: helping SAR operators and emergency responders to select the most accurate ocean forecast". CMEMS General Assembly 2019. Brussels (Belgium), 22-24 May, 2019
22. Jaime Hernández-Lasheras, Baptiste Mourre, **Emma Reyes**, Alejandro Orfila, Eva Aguiar, Adèle Révelard, Mélanie Juza and Joaquín Tintoré. 2019. "Impact of HF radar data assimilation on surface currents in the Ibiza Channel". Ocean Predict'2019, GODAE OceanView Symposium, Halifax, Canada, 6-10 May 2019.
23. **Emma Reyes**, I. Hernández-Carrasco, A. Révelard, B. Mourre, P. Rotllán, E. Comerma, T. Tajalibakhsh, A. Rubio, J. Mader, L. Ferrer, C. De Lera Fernández, E. Álvarez-Fanjul, J. Tintoré. "IBISAR downstream service: Lagrangian assessment of CMEMS and regional model products supporting emergency decision-making at sea". EGU2019, Vienna, (Austria), 7-12 April 2019.
24. Anna Rubio, J. Mader, L. Corgnati, C. Mantovani, A. Griffa, J.L. Asensio, **E. Reyes**, S. Tarot. "High Frequency Radar-derived surface currents: a powerful new data set for CMEMS". EGU2019, Vienna, Austria), 7-12 April 2019.
25. Lorenzo Corgnati, C. Mantovani, J.L. Asensio, A. Rubio, J. Mader, **E. Reyes**, A. Novellino, P. Gorringe, A. Griffa. "The European High Frequency Radar Node". EGU2019, Vienna, (Austria), 7-12 April 2019.

26. **Emma Reyes** and Adèle Revélar. "IBISAR downstream service: helping SAR operators and emergency responders to select the most accurate ocean forecast." CMEMS for Spain. Session - How Spain contributes to CMEMS Service Evolution and User Uptake programs. Madrid, 28 March 2019.
27. Barth, Alexander; Charles, Troupin; **Reyes, Emma**; Tintoré, Joaquín; Beckers, Jean-Marie. "Quantifying the Impact of Dynamical Constraints for Reconstructing Surface Currents " World Ocean circulation user consultation meeting (WOC), Rome (Italy), 21-22-February-2019.
28. Paz Rotllán, Biel Frontera, Emma Heslop, Baptiste Mourre, Melanie Juza, Amaya Álvarez, Lluís Pujol, Miquel Àngel Rújula, Inmaculada Ruíz, Xisco Notario, Cristian Muñoz, Miguel Charcos, **Emma Reyes**, Miquel Gomila, Sonia Gómara, Juan Gabriel Fernández, Joaquín Tintoré. "SOCIB and Balearic Islands Lifeguards: An example of data products and services that provide direct social benefits". Bollettino di Geofisica, Vol.59 - Supplement 1 (2018): 280-282. IMDIS Conference, Barcelona (Spain), 5-7- November 2018.
29. **Emma Reyes**, Baptiste Mourre, Paz Rotllán, Ismael Hernández, Eric Comerma, Tayebah Tajalli Bakhsh, Anna Rubio, Julien Mader, Luis Ferrer, Christian De Lera Fernandez, Enrique Álvarez-Fanjul, Alejandro Orfila and Joaquín Tintoré. " IBISAR: Skill Assessment service for real-time ranking of met-ocean data products in the IBI area for emergency and SAR operators". Bollettino di Geofisica, Vol.59 - Supplement 1 (2018): 299-301. IMDIS Conference, Barcelona (Spain), 5-7- November 2018.
30. Anna Rubio, Julien Mader, Lorenzo Corgnati, Carlo Mantovani, Annalisa Griffa, Antonio Novellino, **Emma Reyes** and Patrick Goringe. "Present and future of the European HF radar network: outcomes of the INCREASE project". The 4th Ocean Radar Conference for Asia-Pacific (ORCA), Naha, Okinawa (Japan), 2-4, June 2018.
31. Carlos J. González, **Emma Reyes**, Óscar Álvarez, Alfredo Izquierdo, Miguel Bruno and Rafael Mañanes, 2018. "Surface currents in the Strait of Gibraltar from field and 3-D model data: impacts on oil-spill modeling and forecasting". VI International Symposium on Marine Sciences. Vigo (Spain), 20-22, June 2018.
32. Eva Aguiar, Baptiste Mourre, Mélanie Juza, Jaime Hernández, **Emma Reyes**, Eugenio Cutolo, Evan Mason, Joaquín Tintoré, 2018. "Multi-platform model assessment in the Western Mediterranean Sea". VI International Symposium on Marine Sciences. Vigo (Spain), 20-22 June 2018.
33. **Emma Reyes**, 2018. "Skill assessment service for real-time ranking of met-ocean data products in the IBI area for emergency and SAR operators". 3rd Workshop of Remote Sensing and SAR exercises organized by the Spanish Maritime Safety and Rescue Agency. Madrid (Spain), 12-13 June 2018.
34. Alexander Barth, C. Troupin, **E. Reyes**, A. Alvera Azcárate, J. Tintoré, J. -M. Beckers, 2018. "Variational analysis of high-frequency radar surface currents using DIVA". EGU2018, Viena, Austria, 8-13 April 2018.
35. Jaime Hernandez Lasheras, Baptiste Mourre, **Emma Reyes**, Alejandro Orfila, Melanie Juza, Eva Aguiar, and Joaquín Tintoré. "Assimilating Ibiza Channel HF radar currents in a high-resolution model" EGU2018, Viena, Austria, 8-13 April 2018.
36. Eva Aguiar, B. Mourre, **E. Reyes**, J. Hernández, E. Heslop, M. Juza, E. Mason, J. Tintoré "Downscaling CMEMS Mediterranean model over the Western basin: impacts on mean flows and mesoscale eddies". EGU2018, Viena, Austria, 8-13 April 2018.
37. Miguel V. Charcos-Lloréns, M. À. Rújula, E. Heslop, A. Novellino, P. Goringe, J. G. Fernández, B. Frontera, C. Muñoz, X. Notario, **E. Reyes**, P. Rotllán, I. Ruiz, and J. Tintoré. "Multi-Platform Data Distribution Challenges from Observing Systems to Data Distribution". EGU2018, Viena, Austria, 8-13 April 2018.
38. **Emma Reyes**, Baptiste Mourre, Alejandro Orfila, Eric Comerma, Tayebah Bakhsh Christian De Lera Fernández, Joaquín Tintoré. "Real-Time Met-Ocean Data Ranking for Emergency Responders (SAR Operators)". Oceanology Internacional, 13 - 15 March 2018, London (UK).
39. Mourre B., E. Aguiar, A. Álvarez-Ellacuría, S. Gómara, M. Gomila, J. Hernández, E. Heslop, M. Juza, T. Oguz, **E. Reyes**, M.A. Rújula, M. Torner and J. Tintoré. "SOCIB: observaciones, predicciones y servicios marinos en el Mediterráneo Occidental". Servicios marinos y supercomputación: experiencias y retos futuros, Santiago de Compostela (Spain), 2017.
40. Cristian Muñoz, Charles Troupin, Juan Gabriel Fernández, Biel Frontera, Paz Rotllán, Inmaculada Ruíz, **Emma Reyes**, Miquel Gomila, Sonia Gómara, David March, Emma Heslop, Diego Alvarez, Lluís Gomez-Pujol, Miquel Àngel Rújula, and Joaquín Tintoré. "The Data Lifecycle at SOCIB: responding to science and society needs". EuroGOOS International Conference: Operational Oceanography serving sustainable marine development. 3-5 October 2017, Bergen (Norway).
41. Julien Mader, Anna Rubio, Carlo Mantovani, Lorenzo Corgnati, Antonio Novellino, Guillaume Charria, Louis Marié, **Emma Reyes**, Céline Quentin, Annalisa Griffa, Patrick Goringe, Joaquín Tintoré and Patrick Farcy. "Future scenarios for the growing European HF Radar network". EuroGOOS International Conference: Operational Oceanography serving sustainable marine development. 3-5 October 2017, Bergen (Norway).
42. **E. Reyes**, B. Mourre, A. Orfila, E. Comerma, TST. Bakhsh, C. De Lera Fernández, J. Tintoré. "Operational Data Delivery and Forecasting for emergency responders (SAR operators)". Copernicus Marine Week- HF Radar in Europe, 26 September 2017, Brussels (Belgium)
43. J. Mader, A. Rubio, A. Griffa, C. Mantovani, L. Corgnati, A. Novellino, J. Schulz-Stellenfleth, C. Quentin, L. Wyatt, M. Ruiz, P. Lorente, M. Hartnett, **E. Reyes** and P. Goringe (2017). Joint initiatives towards raising HF radars as a key component of European Coastal Observatories. Copernicus Marine Week- HF Radar in Europe, 26 September 2017, Brussels (Belgium)

44. **E. Reyes**, B. Mourre, J. Hernández, E. Aguiar, M. Juza, A. Orfila and J. Tintoré. "HF Radar: a keystone for validating high-resolution ocean models". Radiowave Oceanography Meeting, 19-21 September 2017, Lüneburg (Germany)
45. L. Corgnati, C. Mantovani, S. Cosoli, **E. Reyes**, L. Petersen, T. Updyke, A. Rubio, A. Griffa and J. Mader (2017). Toward the pan-European High Frequency Radar network: progress on common protocols and QC for HF radar data. Radiowave Oceanography Meeting, 19-21 September 2017, Lüneburg (Germany)
46. J. Hernández Lasheras, B. Mourre, **E. Reyes**, J. Marmain, A. Orfila and J. Tintoré. "Model velocities assessment and HF radar data assimilation in the Ibiza Channel". European Geosciences Union (EGU 2017) General Assembly 2017. Vienna (Austria). 23-28 April 2017.
47. Hernández, I., Orfila, A., **Reyes, E.** 2016. "Control of surface Coastal transport by Lagrangian Coherent Structures derived from HF radar". XXXII Trobades científiques de la Mediterrània – Josep Miquel Vidal. Planeta Oceà. Maó (Menorca). October 2016.
48. **Reyes, E.**, Troupin, C., Kriemeyer, A., Frontera, B., Mourre, B., Orfila, A. and Tintoré, J. "The importance of an accurate antenna pattern. QA/QC & related practices". INCREASE HF Radar Experts Workshops. CNR-ISMAR, Lerici (La Spezia, Italy). September 2016.
49. Troupin C., J. Marmain, **E. Reyes**, A. Lana, V. Fernandez, B. Mourre, M. Juza, A. Orfila and J. Tintoré. "SOCIB HF Radar: a key contribution to multi-platform ocean observation". JERICO-NEXT HF Radar workshop, March 2016, San Sebastian (Spain).
50. **E. Reyes**, C. González and O. Álvarez. "OceanUCA-Maps: an effective tool to reinforce oil spill response in Andalusia". Special Session on Application of Numerical Modelling in Oceanography and Meteorology. XXIV Congress on Differential Equations and Applications / XIV Congress on Applied Mathematics. Cadiz (Spain). 8-12 June 2015.
51. Bolado M., J. Jesús Gomiz, **E. Reyes**, A. Vázquez, G. Navarro and M. Bruno. "A methodology to assess the role of the river discharges to the Gulf of Cadiz on the nutrient supply to the Alboran Sea". SWAT Conference. Sardinia (Italy). June 2015.
52. Pérez, P., M. Luisa Fernández, G. Ayensa, P. Montero, L. Navarro, I. Rodríguez, M. Dolores Jiménez, P. Montilla, R. Silva, Y. de Miguel, A. Santiago, C. González, **E. Reyes**, R. Fernandes, M. M. Santos, H. Oliveira, T. Tuohy, P. Shanahan, A. Kibble and D. John (2015). ARCOPLatform. Protecting the Atlantic European coast from maritime pollution. InterSpill2015, Amsterdam (Netherlands), 24 March 2015.
53. **E. Reyes**. "Hydrodynamic modelling systems and decision support tools in Andalusia". ARCOPLplus Conference in Andalusia. Coastal pollution response: Technology Transfer, Training and Innovation. Puerto Real, Cádiz (Spain). 23-24 January 2014.
54. **E. Reyes**, C. J. González, C. Dastis, O. Álvarez, A. Izquierdo and M. Bruno. "COASTMAP: an effective tool for environmental prediction and management". 3rd Joint Seminar on Environment and Climate Change. Cádiz (Spain). 8-10 July 2013.
55. C. Dastis, **E. Reyes**, M. Bruno, P. Lorente, M. I. Ruiz and E. Álvarez. "Calibration and validation of high frequency radar current measurements in the Strait of Gibraltar". II Encuentro Oceanografía Física Española (Madrid). 14-16 November 2012.

## Posters

1. Miguel V. Charcos Llorens, Françoise Pearlman, Jay Pearlman, Juan Gabriel Fernández, Lorenzo Corgnati, Milla Johansson, Lauri Laakso, Taavi Liblik, Julien Mader, Carlo Mantovani, Simone Marini, Marc Picheral, **Emma Reyes**, Ana Rubio, Inmaculada Ruiz, Jukka Seppala, Lars Stemmann, Timo Tamminen and Joaquín Tintoré. Data To Product Thematic Services Integration into e-JERICO. Bollettino di Geofisica, Vol.62 (195:196)- Supplement 1 (2021). IMDIS Conference, Online, 12-14 April, 2021.
2. Joaquín Tintoré, **Emma Reyes**, Paz Rotllán, Juan Gabriel Fernández, Baptiste Mourre, John Allen, Verónica Ortiz and all SOCIB and IMEDEA team. "SOCIB: Multi-platform Ocean Observing and Forecasting Infrastructure. Scientific excellence with impact on society". OceanObs'19 - An Ocean of Opportunity, University of Hawaii, 16-20 September 2019.
3. Rubio A, Mader J, Corgnati L, Mantovani C, Griffa A, **Reyes E**, Asensio J-L, Álvarez-Fanjul E, Lorente P, Ruiz M-I, Horstmann J, Zambianchi E, Cardin V, Reyes C, Montero P, Vila B, Hartnett M, Barrera C1, Christensen K-H, Goringe P, Novellino A, Ciraolo G, Varela R, Piedracoba S, Zervakis V, Kalampokis A, Dadić V, Fernandes C, Cermelj B, Charria G, Tarot S, Caldeira R, Jousset S, Cariou V, Mando de Jong, Conley D, Drago A, Gauci A. "The European High Frequency Radar Network". OceanObs'19 - An Ocean of Opportunity, University of Hawaii, 16-20 September 2019.
4. **Emma Reyes** & SOCIB-IMEDEA teams in collaboration with AZTI, CNR-ISMAR, RPS Ocean Science, the Spanish Port System and Spanish Maritime Safety Agency. (2019). "SOCIB HF Radar system: Enhancing HF radar data discovery and use". Summer School on HF and X-band radars ISSOR'19. Ocean Networks Canada (Victoria, BC, Canada), 25-28 August 2019.
5. Adèle Revélard, **Emma Reyes**, Baptiste Mourre, Paz Rotllán, Eric Comerma, Tayebah Tajalli Bakhsh, Anna Rubio, Julien Mader, Luis Ferrer, Christian de Lera Fernández, Enrique Álvarez-Fanjul and Joaquín Tintoré. "IBISAR downstream service: helping SAR operators and emergency responders to select the most accurate ocean forecast". CMEMS General Assembly 2019. Brussels (Belgium), 20-24 May 2019.
6. Mourre B., J. Hernández Lasheras, M. Juza, E. Aguiar, A. Révelard, M. À. Fernández Mora, J. M. García-Valdecasas, A. Buils, P. Rotllán, J. G. Fernández, D. Álvarez Berastegui, D. March, **E. Reyes**, E. Heslop and J. Tintoré (2019). SOCIB ocean prediction systems and applications in the Western



Mediterranean Sea. Ocean Predict'2019, GODAE OceanView Symposium, Halifax, Canada, 6-10 May 2019.

7. J. Tintoré, **E. Reyes**, P. Rotllán, J.G. Fernandez, B. Mourre, J. Allen, E. Ortiz, and all SOCIB and IMEDEA team. 2018 "SOCIB, a Regional Ocean observing and forecasting infrastructure contributing to a long term sustained EOOS". EOOS Conference, Brussels (Toulouse) 21-23, November 2018.

8. Ismael Hernández, **Emma Reyes**, Baptiste Mourre, Paz Rotllán, Eric Comerma, Tayebah Tajalli Bakhsh, Anna Rubio, Julien Mader, Luis Ferrer, Christian De Lera Fernández, Enrique Álvarez-Fanjul, Alejandro Orfila, Joaquín Tintoré. 2018 "IBISAR: service for real-time ranking of met-ocean data products for emergency and SAR operators". EOOS Conference, Brussels (Toulouse) 21-23, November 2018.

9. Lorenzo Corgnati, Carlo Mantovani, Anna Rubio, Jose Luis Asensio Igoa, **Emma Reyes**, Antonio Novellino, Patrick Gorringer, Annalisa Griffa and Julien Mader. Building strong foundations towards the pan-European High Frequency Radar network. Session 3: Marine Environmental infrastructures for observation data. IMDIS Conference, Barcelona (Spain), 5-7- November 2018.

10. **Emma Reyes**, Baptiste Mourre, Paz Rotllán, Ismael Hernández, Eric Comerma, Tayebah TajalliBakhsh, Anna Rubio, Julien Mader, Luis Ferrer, Christian De Lera Fernández, Enrique Álvarez-Fanjul, Alejandro Orfila, Joaquín Tintoré. 2018 "IBISAR: service for real-time ranking of met-ocean data products for emergency and SAR operators". 4th GEO Blue Planet. Toulouse, (France), 4-6 July 2018.

11. Lorenzo Corgnati, C. Mantovani, A. Rubio, **E. Reyes**, C. Quentin, S. Cosoli, A. Novellino, J. Mader, A. Griffa. "The European common data and metadata model for real-time High Frequency Radar surface current data". EGU2018, Viena, (Austria).

12. Ismael Hernández-Carrasco, L. Solabarrieta, G. Esnaola, **E. Reyes**, A. Rubio, A. Orfila, 2018. "Skill assessment of gap filling methodologies for HF-radar currents". EGU2018, Viena, (Austria).

13. Joaquín Tintoré, Heslop, E; Casas, B; Pascual, A; Allen, J; Orfila, A; Ruiz, S; Torner, M; Gomez-Pujol, L; Mourre, B; Alvarez, D; March, D; Castilla, C; Fernandez, EA; Hernández, J; Canellas, T; Álvarez, A; Fontera, B; Carrasco, MA; Pitarch, S; Alemany, F; Reglero, P; Velez-Belchi, P; Ruiz, J; Oguz, T; Gomez, M; Gomara, S; Miralles, A; Balaguer, P; Juza, M; Lizaran, I; Alou, E; Muñoz, C; Rujula, A; Wirth, N; Simonet, M; Ruiz, I; **Reyes, E**; Fernández, JG; Revuelta, O. 2017. Paradigm change in ocean studies: multi-platform observing and forecasting integrated approach in response to science and society needs. Copernicus Marine Week, 25-29 September. Brussels (Belgium)

14. E. Aguiar, B. Mourre, M. Juza, J. Hernández, E. Heslop, **E. Reyes**, R. Escudier and J. Tintoré (2017). Multi-platform model validation in the Western Mediterranean Sea: impact of downscaling. Copernicus Marine Week, 25-29 September. Brussels (Belgium).

15. J. Hernández, B. Mourre, **E. Reyes**, J. Marmain, J. Orfila, J. Tintoré (2017). First steps towards HF radar data assimilation in the Ibiza Channel. Copernicus Marine Week, 25-29 September. Brussels (Belgium).

16. **E. Reyes** & SOCIB team. 2017. SOCIB HF Radar system: keeps the coast in focus. Summer School on HF and X-band radars ISSOR'17. University of Caen (France), August 21-25.

17. Hernández, J., B. Mourre, **E. Reyes**, J. Marmain, A. Orfila and J. Tintoré (2017). Model velocities assessment and HF radar data assimilation in the Ibiza Channel. EGU General Assembly, Vienna (Austria), 23-28 April 2017.

18. Mourre B., J. Vitorino, S. Ciliberti, L. Ferrer, G. Korres, L. Laakso, H. Wedhe, J. Hernandez, M. Juza, E. Aguiar, **E. Reyes**, E. Heslop, E. Jansen, L. Perivoliotis, J. Mader, A. Rubio, J. Tintoré and I. Puillat (2017). "Operational oceanography and coastal forecasting" Joint Research Activity Project in JERICO-NEXT, the European Coastal Observatory Network. 5th GODAE Ocean View Coastal Ocean and Shelf Seas Task Team International Meeting. Cape Town, South Africa, 3-7 April 2017.

19. Aguiar, E., M. Juza, J. Hernández, B. Mourre, E. Heslop, **E. Reyes**, R. Escudier and J. Tintoré (2017). Multi-platform coastal model assessment and impact of downscaling in the Western Mediterranean Sea. 5th GODAE Ocean View Coastal Ocean and Shelf Seas Task Team International Meeting. Cape Town, South Africa, 3-7 April 2017.

20. Mourre, B., J. Vitorino, S. Ciliberti, L. Ferrer, G. Korres, L. Laakso, H. Wedhe, J. Hernández, M. Juza, E. Aguiar, **E. Reyes**, E. Heslop, E. Jansen, L. Perivoliotis, J. Mader, J. Rubio, J. Tintoré and I. Puillat (2017). Multi-platform coastal model assessment and impact of downscaling in the Western Mediterranean Sea. 5th GODAE Ocean View Coastal Ocean and Shelf Seas Task Team International Meeting. Cape Town, South Africa, 3-7 April 2017.

21. Hernandez J., B. Mourre, **E. Reyes**, J. Marmain, A. Orfila and J. Tintoré (2017). Model velocities assessment and HF radar data assimilation in the Ibiza Channel. EGU General Assembly 2017, Vienna (Austria), 23-28 April 2017.

22. Hernández, I., Orfila, A., **Reyes, E**. 2016. Submesoscale blocking of Chl-a by HF radar LCSs. Nonlinear processes in oceanic and atmospheric flows (NLOA), Madrid (Spain). 6-8, July 2016.

#### National Projects

- **MEGAN** (Mesoscale and submesoscale processes in the Strait of Gibraltar: The Trafalgar-Alborán connection). Funded by: Spanish Ministry of Economy and Competitiveness (CTM2013-40048-C2-2-R). Duration: 2013-2016. IP: Prof. Miguel Bruno Mejías (Cadiz Univ.)
- **MAGALLANES** (Scientific and technical assessment to the project MAGALLANES). IP: Prof. Miguel Bruno Mejías (University of Cadiz).
- **MONGACLIMAR** (Numerical modelling of the hydrodynamics and associated biological response in the strait of Gibraltar and Alboran Sea. A retrospective and prospective analysis of relevant climatic scenarios".

Funded by: Spanish Science and Innovation Ministry (CTM-2008-06124). Duration: 2008-2012. IP: Prof. Miguel Bruno Mejías (University of Cadiz)

- **ESEOO** (Establishment of a Spanish Operational Oceanography System, Andalusian Region Coast). Funded by: Spanish Science and Technology Ministry (VEM2003-20577-C14-07). Duration: 2004-2006. IP: Dr. Alfredo Izquierdo González (University of Cadiz)

#### European Projects

- **JERICO-S3** (Joint European Research Infrastructure of Coastal Observatories: Science - Service - Sustainability). Programme: H2020-INFRAIA-01-2018-2019. Duration: 02/2020-01/2024. Coordinator: IFREMER (France). Role: Researcher member of the HF radar task team contributing to the integration of HFR BPs into an homogenized handbook for the coastal observing platforms in the OBPS repository; the implementation of functional tools for HFR community; the definition of KPPIs for HFR network.
- **EuroSea** (Improving and Integrating European Ocean Observing and Forecasting Systems for Sustainable use of the Oceans). Programme: H2020-EU.3.2.5.1 - Climate change impact on marine ecosystems and maritime economy (project Grant agreement ID: 862626). Duration: 1/11/2019-31/12/2023. Coordinator: Helmholtz Zentrum Für Ozeanforschung Kiel (Germany). Role: Researcher member of the HF radar task team in charge of developing tools for supporting the HFR community (outage reporting, historical data reprocessing, model assessment).
- **COPERNICUS\_IN SITU TAC- Phase II**. Programme: Copernicus Marine Environmental Monitoring Service In Situ TAC - Phase II (Thematic Assembly Centre), European Commission. Main Contractor: Mercator Ocean International. Duration: 01/2018-03/2021. Coordinator: IFREMER. Role: member of the HF radar task team in charge of task 6.4- Service evolution task for the improvement of the monitoring tools and services for users.
- **67-UU-DO-CMEMS-DEM4 - IBISAR** (Skill assessment service for real-time met-ocean data product ranking in the IBI area for emergency and SAR operators). Programme: Copernicus Marine Environmental Monitoring Service - User Uptake, European Commission. Main Contractor: Mercator Ocean International. Duration: 05/2018-12/2019. Coordinator: SOCIB. Role: Principal Investigator.
- **JERICO-NEXT** (Joint European Research Infrastructure network for Coastal Observatory – Novel European eXpertise for coastal observatories). Programme: H2020. Project number 654.410. Duration: 09/2015-08/2019. Coordinator: IFREMER. Role: Researcher (participation in the main HF Radar activities are: Harmonization, Networking, Added-value products developments, Data management, Virtual access
- **CMEMS-SE INCREASE** (Innovation and Networking for the integration of Coastal Radars into European marine Services). Programme: CMEMS- Service Evolution 21-SE-CALL1. Duration: 04/2016-04/2018. Coordinator: AZTI (Julien Mader). Role: Researcher (subcontractor of ETT S.p.A.). Consultancy in data harmonization, data distribution and access, evaluation of the developed standardization tools, development of HFR added-value products, networking, promotion activities and user engagement.
- **ARCOPOLplatform** (Platform for improving maritime coastal pollution preparedness and response in Atlantic regions). Programme: Atlantic Area Transnational Programme, EU Commission / ERDF (2013-1/252). Duration: 01/2014-06/2015 (18 months). IP: Dr. Óscar Álvarez Esteban (University of Cadiz). Atlantic project award in the Atlantic Marine & coastal environment category in September 2016. Role: Researcher in charge of the implementation of data storage optimization routines; maintenance and upgrade of the web-based GIS Operational Oceanography System.
- **ARCOPOLplus** (Improving maritime safety and pollution response through technology transfer, training and innovation). Programme: Atlantic Area Transnational Programme, EU Commission / ERDF (2011-1/150). Duration: 01/2012-12/2013 (24 months) IP: Dr. Óscar Álvarez Esteban (University of Cadiz). Role: Researcher in charge of improving and optimizing the automation processes for the met-ocean model forecasts and model skill assessment.
- **TRADE** (Trans-regional RADards for Environmental applications). Programme: EU/INTERREG (0419\_TRADE\_5\_E). Duration: 2011-2013. IP: Dr. Miguel Bruno Mejías (University of Cadiz). Role: Researcher in charge of HF radar surface current Quality Assessment and scientific data exploitation.

#### Courses

- **2021/June**. Python – “Introduction and libraries for data analysis”. Lecturer: Isaac Lera Castro. 12 hours.
- **2020/July**. Machine Learning – Data Science in Python. Lecturer: Juan Gabriel Gomila Salas. 48 hours of online video tutorials.
- **2020/March**. Copernicus MOOC (Massive Open Online Course), University of Luxembourg Competence Centre and PwC for the European Commission. 24 hours along 12 weeks.
- **2019/Aug**. ISSOR'19. Summer School on HF and X-band radars. Ocean Networks Canada, Victoria - BC (Canada)
- **2018/Oct**. HFR Work-camp "The EU standard: make it your own" (3 days). Organized by AZTI and CNR-ISMAR. Held in Bilbao (Spain), 22-24 October 2018.
- **2018/Sep**. COSMO Lagrangian model (<http://doi.org/10.5281/zenodo.3522268>) training workshop (1 day). Organized by ICM-CSIC. Held in Barcelona (Spain), 18 September 2018. Educator: Joaquim Ballabrera Poi (COSMO project PI)
- **2018/Jul**. Course "Python for Scientists: Introduction and basic libraries for data analysis" (25 hours). Held in University of Balearic Islands, Palma (Spain), 9-13 July 2018. Educators: Isaac Lera Castro, Gabriel Moyà Alcover and Joan Huguet Garcia.

- **2017/Aug.** ISSOR'17. Summer School on HF and X-band radars. University of Caen (France)
- **2016/Oct.** Online course "Monitoring the Oceans from Space" (5 weeks, 3hours per week). 24.Oct-25. Nov.2016. Created by EUMETSAT. Educators: Mark Higgins, Helen Czerski and Hayley Evers-King.
- **2016/Jan.** Course "Python applied to Oceanography". (12 hours). 27-29. Jan.2016. University of Cadiz, provided by SOCIB. Educators: Charles Troupin and Evan Mason.
- **2015/Jul.** Webinar "Introduction to metadata standard for data catalogue service". Pedro Montero. (1 hour). Organized by PROTECMA.
- **2013/Oct.** "Supercomputing: parallel programming and optimization using available software development tools " course (15 hours). University of Cádiz provided by CESGA and Hewlett Packard.
- **2009/Dec.** "Optical Physical and Ecosystem Regional Assessment (OPERA)" workshop. NATO Undersea Research Centre, La Spezia, Italy.
- **2009/Jul.** Intensive course on "free software for Science and Engineering: Elmer" (20 hours). University of Cadiz.
- **2008/Oct.** "3rd European Gliding Observatories Workshop and Glider School". NATO Undersea Research Centre, La Spezia, Italy.
- **2007/Dec.** "Introduction to the usage and programming of supercomputer resources" (12 hours). University of Cadiz, Spain
- **2006/Sep.** "Coastal Dynamics Modelling" summer school (22.5 hours). Organised by CNRS in Toulon, France.
- **2006/Aug.** "Climate Change impacts on marine ecosystems" summer school. Middle East Technical University Ankara, Turkey.

#### Scholarships

- **2008.** Assistant project manager (3 months) of "ICZM curriculum adaptation to the two-level system (EU-COMET2)". Funded by: TEMPUS-TACIS III Joint European Project (CD\_JEP-25236-2004).
- **2007.** Research assistantship (6 months). Title of the work: "Characterization of marine dynamics and its effects on fish cages from the off-shore fish farm PIAGUA (Piscifactoría de Aguadulce) in Almería". Funded by: Public Enterprise for Agriculture and Fisheries Development of Andalusia.
- **2005-06.** Mapfre Foundation Research training grant (1 year). Title of the work: Development of an operative oil spill dispersion model in the marine environment: the case of the Strait of Gibraltar"
- **2005.** Research assistantship (2 months). Title of the work: "Hydrodynamic characterization of the coastal strip facing Cabo Roche (Conil)". Funded by: Public Enterprise for Agriculture and Fisheries Development of Andalusia (OT2004-166).
- **2004-05.** Assistantship at the Office of the Vice-rector for International Relations (6 months).
- **2002.** MAEC-AECID grant in the University of San Carlos of Guatemala (Guatemalan)

#### Research stays

- **2010.** Max Plank Institute für Meteorologie. Ozean im Erdsystem Department, Hamburg, Germany (3 months). Duties: Implementation of atmospheric forcing to local ocean model.
- **2008.** NATO Underwater Research Center (NURC), Environmental Processes and Prediction Branch. La Spezia, Italy (4 months). Duties: Adaptive sampling during the sea trial TSS-08 and validation of COAMPS with meteo-buoy data in the Black and Marmara Seas.
- **2006.** MeteoGalicia (3 weeks), Santiago de Compostela, Spain. Duties: learning the use of state-of-the art meteorological models and analysis of their results.
- **2003-04.** Carl Von Ossietzky Universität in Oldenburg, Institute for Chemistry and Biology of the Marine Environment (ICBM), Marine Physics Department, Germany (6 months). Duties: Laboratory classes associated with the project "EU-CRAFT-Projects Fluosense" (detection of oil spills on the ocean surface using LiDAR system)
- **2002-03.** Carl Von Ossietzky Universität in Oldenburg, ICBM, Marine Physics Department, Germany (8 months). Erasmus Scholarship. Duties: programming and data evaluation in the scope of the project "Estimation of remote-sensing reflectance from above-surface measurements".
- **2002.** University of San Carlos of Guatemala, Aquaculture and Marine Studies Centre, Guatemala (2 months). International Scholarship of Spain's Ministry of Foreign Affairs and Cooperation (MAEC) and the Spanish Agency for International Development Cooperation (AECID) Spain-Latin America Duties: monitoring of harmful algae bloom on the Pacific coast of Guatemala.

#### Sea expeditions

- **ALOMEx15** (Atlantic LiDAR Optical Measurements Experiment 2015)  
On board of the NRV Alliance – Alboran Sea, Nov/2015. Model performance assessment; detection of internal waves with LiDAR; support of real-time met-ocean forecast and MODIS-Aqua and VIIRS satellite images.
- **MEGAN2015** (Mesoscale and submesoscale processes in the Strait of Gibraltar: The Trafalgar-Alboran connection)  
Gulf of Cadiz-Strait of Gibraltar-Alboran Sea, Sep-Oct/2015. Near-real time on-land support
- **ALBORAN2011**  
On board BH Malaspina – Algeciras Bay and Alboran Sea, Oct/2011. HF radar current measurement validation against ADCP records and Lagrangian buoy trajectories; analysis of the changing vertical density structure over the entire water column due to internal waves.

- **ZEE-09** (Exclusive Economic Zone-EEZ)  
On board BIO Hesperides – North-western Iberia Peninsula, Jul-Aug/2009. Data acquisition and analysis for describing the surface current patterns and assessing the physicochemical properties of surface water in the Western Cantabrian Sea during summer.
- **TSS-08** (Turkish Strait System)  
On board NRV Alliance – Aegean, Marmara and Black Seas, Aug-Oct/2008. Adapting Sampling and validation of COAMPS.
- **TRAFALGAR**  
On board BH Malaspina – Coastal strip of Trafalgar Cape, Apr/2006. Data acquisition and analysis for environmental impact assessment of the offshore wind farm in the area.
- **ESTRECHO**  
On board BH Malaspina – Gibraltar Strait and Trafalgar Cape, Nov/2005. CTD casts analysis.
- **BFU04** (Baltic Floating University)  
On board Centaurus II – Finland Gulf and Baltic Sea, Jul-Aug/2004. Training on board: shipboard data collection, processing and analysis; daily lectures.
- **GEMA III** (Strait of Gibraltar-Alboran Sea)  
On board BH Tofiño – Alboran Sea and strait of Gibraltar, Nov-Dec/2001. Acquisition of tide-gauge data to assess the ocean model's forecasts reliability.

#### Professional Memberships

- **2021 – present. Member of the Steering Committee** of the Educational Coordination Agreement between SOCIB and the University of Cádiz.
- **2020 - present. Member** of EuroGOOS Data-MEQ Working Group and **ambassador of MONGOOS** in EuroGOOS.
- **2019-present. Co-chair of the HF Radar Task Team in MONGOOS** (Mediterranean Operational Network for the Global Ocean Observing System), <http://www.mongoos.eu/home>
- **2018-present. Member** of EuroGOOS HF Radar Task Team (leader of three tasks: edition and distribution of the biannual newsletter; searching for new opportunities for joint proposals and promoting partnership; boosting of HFR community interaction and collaboration).
- **2018-present. Coordinator** of the collaborations between SOCIB and the Spanish Port System.
- **2017-present. Member of the Steering Committee** of the Agreement between SOCIB and the Spanish Maritime Safety and Rescue Agency.

#### Workshop Organization

- **2021. 10<sup>th</sup> MONGOOS workshop** “MONGOOS: 10 Years of Operational Oceanography in the Mediterranean Sea – Towards a Full Ocean Data Integration”. 26-27 October 2021, virtual event. Topic: integration of science-based knowledge and promotion of solution-oriented research in the Mediterranean Sea. Content: 3 sessions, 25 talks, more than 140 registrations from 19 different countries.
- **2020. Expert-led 2-day workshop** on HFR with **Dr. Sun Yong Kim** (Environmental Fluid Mechanics Laboratory -EFML-, Department of Mechanical Engineering, School of Mechanical and Aerospace Engineering, Korea Advanced Institute of Science and Technology, -KAIST-, South Korea). SOCIB, Palma (Spain), 23-24 January 2020. Topics: HF radar multiyear data analysis, data assimilation approaches, Lagrangian applications, submesoscale eddies monitoring, quality assessment techniques.
- **2017. Expert-led 2-day workshop** on HFR with **Dr. Alexander Barth** (GHER -GeoHydrodynamic and Environmental Research – group of the University Liège, Belgium). SOCIB, Palma (Spain), 30-31 October, 2017. Topics: HF radar gap-filling methods, data assimilation and ROMS nesting procedures.

#### TEACHING EXPERIENCE

Student Internship Supervisor 2022

- **Ms Daisy Pemba Garcia Steinebronn.** Student supervisor at SOCIB (400 hours) -15 Sep 2021 – 14 Jan 2022. Final report available: [https://www.socib.es/files/documents/2\\_MemoriaPracticas\\_DaisyPembaGarc%C3%ADa.pdf](https://www.socib.es/files/documents/2_MemoriaPracticas_DaisyPembaGarc%C3%ADa.pdf). Executive summary available: [https://www.socib.es/files/documents/1\\_ExecutiveSummary\\_DaisyPembaGarc%C3%ADa.pdf](https://www.socib.es/files/documents/1_ExecutiveSummary_DaisyPembaGarc%C3%ADa.pdf)

Final Degree Project Supervisor 2021

- **Ms. Daisy Pemba Garcia Steinebronn.** Final Degree Project “Particle retention at the northwestern coastal margin of the strait of Gibraltar with the estimation of residence times using HFR measurements” (University of Cádiz, Spain). <http://hdl.handle.net/10498/25532>

Online seminar 2020

- **Lecturer:** delivery of a webinar focused on “Scientific and Societal applications of ocean currents data from high-frequency radars” for Search and Rescue operators and students from the Jovellanos Centre of the Spanish Maritime Safety and Rescue Agency. 30 Jun 2020. [Link to the video.](#)

BSc. Lecturer 2011

- **Teaching assistant:** practical session of Atmosphere-ocean interaction during one semester in the third year of the Degree in Nautical Sciences and Maritime Transport (University of Cádiz, Spain). Design of teaching materials: ICT integration. Average group size, 20 students.

MSc Supervisor  
2010

- **Mr. Augusto Antonio Sepp Neves.** MSc Thesis: "Use of altimeter data for the improvement and validation of an operational oceanography system in the Strait of Gibraltar- Spain". Erasmus Mundus joint Master Degree in Water and Coastal Management (University of Cádiz, Spain)
- **Ms. Josephine Ffion Atkins.** MSc Thesis: "Using MODIS SST and Chl-a to validate a 3D hydrodynamic model of barotropic internal waves in the Strait of Gibraltar- Spain". Erasmus Mundus joint Master Degree in Water and Coastal Management (University of Cádiz, Spain)

## THESIS DISSERTATION COMMITTEES

November  
2020

- **Thesis Committee** for Marina Bolado-Penagos. "Análisis de los procesos hidrodinámicos de meso y submesoescala que condicionan el transporte de propiedades hacia el mar de Alborán a través del estrecho de Gibraltar". University of Cádiz. 20 November, 2020.

## SKILLS

Mother tongue(s)  
Other language(s)

Spanish

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
German	C1	B2	B2	B2	B1
Italian	B1	B1	B1	B1	A2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
[Common European Framework Of Reference For Languages](#)

Communication  
skills

- **Effective communication**, both written and verbal, **and good social skills** and active listening abilities gained during the participation at national/international conferences.
- Demonstrated **strong personal presentation skills**, with ease and natural style, during oral and poster presentations at international conferences, meetings, seminars and workshops for both broader audiences (general public, outreach and education).
- Demonstrated **publications** of articles, internal reports, guidelines and submission of proposals in response to several calls.
- Demonstrated **strong English verbal and written** communication and interpersonal skills.
- Demonstrated **skills in other languages** (e.g. Spanish, German, Italian), mostly acquired during different internships and research visits to different countries.
- Participation in **science communication, public engagement and outreach activities** in my current job position.
- Highly **motivated person to communicate marine science** to the general public:
  - <http://medcliv.es/en/news/Eventos/pequenas-oceanografas-grandes-cientificas.html><http://medcliv.es/en/news/Eventos/11f-y-6-minutos-para-conocer-el-sistema-multiplataforma-del-socib.html>
  - [https://twitter.com/socib\\_icts/status/961285462093639680](https://twitter.com/socib_icts/status/961285462093639680)

Computer skills

- **Operational systems:** Windows, Linux-based operating systems (distributions: Open Suse, SLES, Ubuntu, Red Hat), OS X.
- **Programming skills in:** Matlab, Python, Fortran
- **MS Office package:** Word, Excel, Access, and Power Point.
- **Internet file transfer protocols** (e.g. FTP, HTTP, SCP, SFTP), **web servers** for geo-referenced data and metadata access (THREDDS Data Server; Motu-client; ERDDAP), **data access protocols** (OPenDAP, Netcdf Subset Service), web map services (e.g. Godiva, IDV).
- **Software for management and visualization of NetCDF Data** and other formats: GrADS, Ferret, NCO, CDO, NCVIEW, and ncBrowse.
- **Software for processing and displaying satellite images:** SeaDAS.
- **Scripting languages:** Bash-Scripting.
- Experience with **High Performance Computing**.
- Free and Open Source **Geographical Information Systems (GIS):** QGIS.
- **Instrument manufacturer software packages** (e.g. SeaSonde CODAR processing software package for Combine and HF radar Radial Sites)

