



Guiomar Lopez

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WORK EXPERIENCE

Head of High Frequency Radar (HFR) Facility

SOCIB [17/04/2023 – Current]

City: Palma | **Country:** Spain

Operational Management of the Ibiza HFR Network:

- Ensure optimal HFR network performance through routine remote & on-site maintenance, troubleshooting, and swift corrective action.
- Coordinate technical support and implement best practices to minimize downtime and maximize data quality.
- Diagnose and resolve hardware, software, and communication issues across the HFR network and auxiliary instrumentation.
- Contribute to station installations, antenna calibrations, and validation campaigns, ensuring data accuracy and reliability.

Data Quality & Dissemination:

- Validate and quality-control surface current data, implementing standardized European formats for efficient distribution on international data portals.
- Generate reporting tools to streamline data accessibility and analysis.

Oceanographic Research & Analysis:

- Contribute to coastal dynamics research, focusing on the Ibiza Channel, by integrating HFR data with other observation platforms and ocean models.

Outreach:

- Actively participate in ocean literacy activities, in alignment with ICTS SOCIB's mission to bridge the gap between science and society.

Engineer in charge of site characterization for offshore wind energy projects

SHOM [01/2021 – 04/2023]

City: Brest | **Country:** France

- Developed, calibrated, and validated wave hindcasts using the spectral wave model WAVEWATCH III for multiple French coastal sites.
- Conducted site characterization studies for offshore wind farms, providing insights on wave climate statistics and extreme value analysis to inform project design and risk mitigation.
- Offered technical guidance and implemented improvements to wave buoy configuration.

Postdoctoral Researcher in HFR for flow characterization at a potential tidal energy site

University of Caen Normandie [09/2021 – 12/2021]

City: Caen | **Country:** France

- Conducted a tailored experiment to obtain a dataset of HFR-derived measurements with increased range resolution.
- Investigated the impact of range resolution on HFR-derived measurements of a horizontally sheared current.

Postdoctoral Researcher in HFR (HYD2M project)

CNRS [01/2017 – 12/2019]

City: Caen | Country: France

- Used HFR observations to characterize complex tidal flows at a high-energy site.
- Processed and analysed HFR measurements.
- Assessed HFR data quality through comparison with models and in-situ observations.
- Installed and maintained two HFR sites.
- Presented findings at international conferences and meetings related to the ANR-funded project HYD2M.
- Prepared HYD2M project deliverables and peer-reviewed publications.

EDUCATION AND TRAINING

PhD in Marine Sciences

University of Plymouth [2017]

City: Plymouth | Country: United Kingdom | Thesis: Evaluation, analysis and application of HF radar wave and current measurements

MSc in Applied Marine Sciences

University of Plymouth [2012]

City: Plymouth | Country: United Kingdom | Thesis: Evaluation of the wave energy resource over the western approaches to the English Channel

MSc in Integrated Coastal Zone Management

University of Cantabria [2010]

City: Santander | Country: Spain | Thesis: Development of a neuro-fuzzy model (ANFIS) for the prediction of salinity in areas affected by brine discharge from desalination plants

BSc Marine Science

University of Vigo [2008]

City: Vigo | Country: Spain

LANGUAGE SKILLS

Mother tongue(s): Spanish

Other language(s):

French

LISTENING C2 READING C2 WRITING C1

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

English

LISTENING C2 READING C2 WRITING C1

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

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

DIGITAL SKILLS

Digital Skills - Test Results

	Information and data literacy	ADVANCED Level 6 / 6
	Communication and collaboration	ADVANCED Level 6 / 6
	Digital content creation	ADVANCED Level 6 / 6



Results from [self-assessment](#) based on [The Digital Competence Framework 2.1](#)

My Digital Skills

Python / Microsoft Office / Linux / MATLAB / WW3 / SWAN (Simulating WAve Nearshore) / Shell scripting / LaTeX

PUBLICATIONS

Peer-reviewed

- Dumas, D., Bennis, A.-C., Guérin, C.-A, Lopez, G., Benoit, L. High-Frequency Radar observation of strong and contrasted currents: the Alderney race paradigm. Ocean Dynamics (preprint). <https://doi.org/10.21203/rs.3.rs-4654978/v1>
- Furgerot L, Sentchev A, Bailly-du-Bois P, Lopez G, Morillon M, Poizot E, Méar Y, Bennis A.-C (2020) One year of measurements in Alderney Race: preliminary results from database analysis. Phil. Trans. R. Soc. A 378: 20190625. <https://doi.org/10.1098/rsta.2019.0625>
- Lopez G, Bennis A-C, Barbin Y, Sentchev A, Benoit L, Marié L (2020) Surface currents in the Alderney Race from high-frequency radar measurements and three-dimensional modelling. Phil. Trans. R. Soc. A 378: 20190494. <http://dx.doi.org/10.1098/rsta.2019.0494>
- Lopez G, Conley DC, Greaves D (2019) Comparison of HF radar fields of directional wave spectra against in situ measurements at multiple locations, J. Mar. Sci. Eng., 7(8), 271. <https://doi.org/10.3390/jmse7080271>
- Lopez G, Conley DC, Greaves D (2016) Calibration, validation and analysis of an empirical algorithm for the retrieval of wave spectra from HF radar sea-echo, J. Atmos. Ocean. Technol., 33, 245-261. <https://doi.org/10.1175/JTECH-D-15-0159.1>

Conference proceedings and reports

- Faidherbe, T., Lopez, G., Leballeur, L., Michaud, H., & Pezerat, M. (2024). 20 ans de rejeux d'états de mer à haute résolution sur les côtes méditerranéennes françaises. In *Proceeding of the eighteenth National Symposium with international participation* (pp 33-40). Paralia editions CFL. [10.5150/jngcgc.2024.005](https://doi.org/10.5150/jngcgc.2024.005)
- Michaud, H., Seyfried, L., Pasquet, A., Leckler, F., Lopez, G., Leballeur, L., Brosse, F., Krien, Y., Pezerat, M., & Faidherbe, T. (2024). HYWAT: 45 années de rejeux de marée, surcote et états de mer à haute résolution sur les côtes françaises atlantiques. Application aux risques de submersion côtière à Sant Malo. In *Proceeding of the eighteenth National Symposium with international participation* (919-930). Paralia editions CFL. [10.5150/jngcgc.2024.094](https://doi.org/10.5150/jngcgc.2024.094)
- Lopez G, Leballeur L, Seyfried L, Michaud H (2021) Dossier de l'état de connaissance initiale des zones d'implantation du parc et de raccordement de la zone éolienne en mer de Bretagne Sud. Volet houle. Convention Shom/MTES [DGEC], SHOM n°79/2019. Available at: <https://www.eoliennesenmer.fr>
- Lopez G, Desmare S (2021) Dossier de l'état de connaissance initiale des zones d'implantation du parc et de raccordement de la zone éolienne en mer de Normandie Est. Volet courants. Convention Shom/MTES [DGEC], SHOM n°79/2019. Available at: <https://www.eoliennesenmer.fr>
- Lopez G, Marié L, Gurgel K.-W, Bennis A-C, Duarte R (2019) Nouvelles méthodes pour le traitement de données radar acquises en environnement extrême. Deliverable 3.4 HYD2M project
- Lopez G, Bennis A-C, Barbin Y, Benoit L, Cambra R, Conley DC, Marié L, Perez L, Sentchev A, Wyatt L (2019) Surface hydrodynamics of the Alderney Race from HF Radar Measurements, Proceedings of EWTEC 2019, Naples, Italy, 1-6 September, 2019
- Lopez G. et al. (2018) Hydrodynamics of the Alderney Race: HF radar measurements, Proceedings of 7 th International Conference on Ocean Energy, Cherbourg, France, 12-14 June, 2018. Available at: <https://www.icoe-conference.com>

- Gomez R, Helzel T, Lopez G, Conley D, Wyatt L, Thomas N, Smet S, Sicot G (2015) Estimation of wave parameters from HF radar using different methodologies and compared with wave buoy measurements at the Wave Hub, Proceedings of OCEANS 2015, Genova, 2015, pp. 1-9. <https://doi.org/10.1109/OCEANS-Genova.2015.7271477>
- Bourdier S, Dampney K, Fernandez H, Lopez G, Richo J-B (2014) Non-intrusive wave field measurement. Deliverable D4.05 MARINET. Available at: https://tethys.pnnl.gov/sites/default/files/publications/D4_05_Final.pdf
- Lopez G, Conley DC, Greaves D, Magagna D (2013) Adjusting an Empirical Algorithm for Extracting Wave Height from HF Radar Measurements at the Wave Hub, Proceedings of European Wave and Tidal Energy Conference EWTEC 2013, Aalborg, Denmark, 2-5 September 2013
- Taillandier C, Pineau H, Thomas N, Maisondieu C, Lopez G, Conley D (2013) 'Processing and analysis of HF radar measurements of currents and sea states in the Iroise and Celtic Seas'. Deliverable 3.1.4. MERIFIC project