

Andrea Lira Loarca

PhD. Civil Engineering

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Personal Information

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Nationalities Guatemalan and Spanish

Date of birth December 31st, 1988

Education

- March 2016 - **PhD Programme in Biogeochemical Fluid Dynamics and their Applications**, *University of Granada, Spain.*
July 2019 **PhD Programme of Architecture and Engineering**, *University of Parma, Italy*,
Co-tutelle programme | First class honours - Cum Laude.
Thesis: Experimental and analytical study of the hydrodynamics of swell and sea waves with partially reflective structures. <https://digibug.ugr.es/handle/10481/57414>
Supervisors: Asunción Baquerizo Azofra & Sandro G. Longo
- Sep. 2014 - **MSc. in Environmental Hydraulics with specialization in Integral Management of Ports and Coastal Zones**, *University of Granada, Spain. First class honours.*
July 2015 *MSc. thesis:* Experimental study of a hybrid wind-wave WEC system with floating structure subjected to the action of wind and waves
Supervisors: María Clavero Gilabert & Miguel A. Losada Rodríguez
- Sep. 2007 - **MSc. Civil Engineering**, (*Ingeniería de Caminos, Canales y Puertos*). *University of Granada, Spain.*
July 2013 *Second class honours (2:1).*
2012–2013 - *MSc. thesis:* Identification and classification of shoreline undulations patterns: a European database. <http://digibug.ugr.es/handle/10481/32329>
Supervisors: Alejandro López Ruiz, Miguel A. Losada Rodríguez & Miguel Ortega Sánchez

Professional experience

- Jan. 2026 - **Climate Scientist**, *Climate Change and Security*,
NATO CMRE - Centre for Maritime Research & Experimentation. La Spezia, Italy.
- Dec. 2022 - **Research Fellow (RTD-A)**, *MeteOcean Research Group*,
Dec. 2025 University of Genova, Italy.
 - FOCUSMed project: climate change effects in the Mediterranean wave climate and coastal impacts.
 - CRESO project: coastal risks and socioeconomic impacts of climate change
- July 2023 - **Consultant**, *Climate Change and Security division*,
Dec. 2024 NATO CMRE - Centre for Maritime Research & Experimentation. La Spezia, Italy.
- June 2020 - **Postdoctoral researcher**, *MeteOcean Research Group*,
Dec. 2022 University of Genova, Italy.
 - Implementation, optimization and validation of meteocean hindcast and forecast chain in the Mediterranean Sea using WaveWatch III.
 - Climate change effects in the Mediterranean wave climate.

- Aug. 2019 - **Postdoctoral researcher**, *Environmental Fluid Dynamics Group*,
 May 2020 Andalusian Institute for Earth System Research (IISTA), University of Granada, Spain.
- Maritime climate time series simulations under climate change scenarios.
 - Wave, currents and tide analysis using numerical models (Delft3D).
- Sep. 2015 - **Researcher**, *Environmental Fluid Dynamics Group*,
 July 2019 Andalusian Institute for Earth System Research (IISTA), University of Granada, Spain.
- Analysis of climate change impacts on coastal areas. Extreme wave climate analysis.
 - Development of tools for the calculation and optimization of port operations.
 - Experimental work on wave, wind and currents flume. Water level and pressure measurements.
- Sep. 2014 - **Research internship**, *Environmental Fluid Dynamics Group*,
 Aug. 2015 Andalusian Institute for Earth System Research (IISTA), University of Granada, Spain.
- Experimental setup, scale-models design and modelling in a wave flume and wind tunnel.
 - Data analysis and related statistics of experimental data.
 - Motion analysis using digital image processing.

Committee Member

- 2023 - **Member of the Expert Working Group 5**, *Unlock ocean-based solutions to climate change*,
 UN Ocean Decade.
<https://oceandecade.org/vision-2030/>
- 2023 - **Guatemala National Coordinator**, *Early Career Ocean Professional Network - Central America*,
 UN Ocean Decade.
<https://www.ecopdecade.org/central-america/>

Teaching

Associate Professor accreditation,

Italian accreditation to the position of *Professore Associato*

Spanish accreditation to the position of *Profesor Contratado Doctor*.

MSc. programmes

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|-----------|---|
| 2024-2025 | Climate Change: Processes and Modeling , MSc. Environmental Engineering, |
| ... | University of Genova, Italy. |
| 2022-2023 | 50 hours - 5 ECTS |
| 2024-2025 | Coastal Structures and Shore Protection , <i>Part I: Wave theory, data and extreme value analysis</i> , |
| ... | MSc. Environmental Engineering, |
| 2020-2021 | University of Genova, Italy. |
| | 10 hours - 1 ECTS |
| 2021-2022 | Maritime Structures (Costruzioni Marittime) , <i>Part I: Wave theory and extreme value analysis</i> , |
| 2020-2021 | MSc. Civil Engineering, |
| | University of Genova, Italy. |
| | 10 hours - 1 ECTS |
| 2019-2020 | Planning and management , <i>Block I: Reliability and Block II: Introduction to stochastic optimization</i> , Interuniversity Masters Program in Environmental Hydraulics, |
| | University of Granada, Spain. |
| 2019-2020 | Foundations and applied methods in environmental hydraulics , <i>Block I: Numerical methods and Block II: Statistical methods</i> , Interuniversity Masters Program in Environmental Hydraulics, |
| | University of Granada, Spain. |

PhD programmes

2024 ... 2021 **Python for Environmental Sciences and Engineering**, PhD program in Civil, Chemical and Environmental Engineering,
University of Genova, Italy.
18 hours - 3 ECTS

PhD and MSc students

Supervision of PhD students

- 2023 - 2026 **Marine environmental data management and post-processing via ICT tools | Beatrice Scotto**,
Supervisors: Giovanni Besio, Antonio Novellino and Andrea Lira Loarca,
Fluid Dynamics and Environmental Engineering Curriculum,
PhD program in Civil, Chemical and Environmental Engineering, University of Genoa, Italy.
- 2022 - 2025 **Climate change impacts and risks of extreme coastal water level events in the Mediterranean Sea | Filippo Giaroli**,
Supervisors: Andrea Lira Loarca and Giovanni Besio,
Risk and Resilience Engineering for the Natural, Industrialized and Built Environments Curriculum,
PhD program in Security, Risk and Vulnerability, University of Genoa, Italy.

Supervision of MSc. thesis

- 2023 - 2024 **Climate change impacts on marine ecosystems: machine learning approaches for analyzing the effects on alien and thermophilic species. Marta Falossi**,
Supervisors: Andrea Lira Loarca and Annalisa Azzola,
MSc. Environmental Engineering. University of Genoa, Italy.
- 2024 - 2025 **Development of an efficient operational flooding forecast system for the Northern Tyrrhenian Sea. Håkon Bergsvik Sagedal**,
Supervisors: Andrea Lira Loarca, Giovanni Besio and Vicente Gracia Garcia,
MSc in Coastal and Marine Engineering and Management (CoMEM+) - Erasmus Mundus. University of Genoa, Italy.
- 2023 - 2024 **Numerical Simulation of Coastal Flooding: The Role of Extreme Events and Sea Level Rise in Chiavari, Liguria. Tommaso Biglietto**,
Supervisors: Giovanni Besio and Andrea Lira Loarca,
MSc. Environmental Engineering. University of Genoa, Italy.
- 2023 - 2024 **A Coastal Flooding Framework to Compound Impacts of Storm Events on the Ligurian Coast. Abigail Cooper MacKenzie, 110/110 - Cum Laude**,
Supervisors: Giovanni Besio, Andrea Lira Loarca, Bianca Federici and Vicente Gracia Garcia,
MSc in Coastal and Marine Engineering and Management (CoMEM+) - Erasmus Mundus. University of Genoa, Italy.
- 2023 - 2024 **Assessing coastal risk under a changing climate: Integrating climate projections with SSP Scenarios - A case study in the Ligurian region. Andrés Real Jiménez, 110/110 - Cum Laude**,
Supervisors: Andrea Lira Loarca, Bianca Federici and Vicente Gracia Garcia,
MSc in Coastal and Marine Engineering and Management (CoMEM+) - Erasmus Mundus. University of Genoa, Italy.
- 2023 - 2024 **Climatic projections by 2100 of lightning flashes via hybrid AI-enhanced algorithms. Alessio Pedullà, 110/110 - Cum Laude**,
Supervisors: Andrea Mazzino, Andrea Lira Loarca and Mattia Cavaola,
MSc. Environmental Engineering. University of Genoa, Italy.
- 2021 - 2022 **Dipersion monitoring services in the Ligurian and Northern Tyrrhenian Seas: a multi-model statistica approach. Beatrice Maddalena Scotto, 110/110**,
Supervisors: Giovanni Besio, Andrea Lira Loarca and Marco Alba,
MSc. Environmental Engineering. University of Genoa, Italy.

- 2020 - 2021 **Langrangian dispersion of particles and mixing properties in the harbor of Genoa. Mattia Scovenna,**
Supervisors: Giovanni Besio, Andrea Lira Loarca and Mohammad Daliri,
MSc. Environmental Engineering. University of Genoa, Italy.
- 2020 - 2021 **Change in joint event occurrences of wind waves and storm surge from the past to the future through climatic projections. Filippo Giaroli, 110/110 - Cum Laude and dignità di stampa,**
Supervisors: Giovanni Besio and Andrea Lira Loarca,
MSc. Environmental Engineering. University of Genoa, Italy.
- 2020 - 2021 **Building with nature: a possible application to mitigate erosive processes in the Ligurian context. Marta Leveratto, 110/110 - Cum Laude,**
Supervisors: Giovanni Besio and Andrea Lira Loarca,
MSc. Environmental Engineering. University of Genoa, Italy.
- 2019 - 2020 **Modello semplificato per l'evoluzione del danno in dighe a parete verticale. Jacopo Rucco, 110/110 - Cum Laude,**
Supervisors: Giovanni Besio and Andrea Lira Loarca,
MSc. Civil Engineering. University of Genoa, Italy.
- [Supervision of BSc. thesis](#)
- 2015 - 2016 **Identificación y clasificación de ondulaciones en la línea de costa de Estados Unidos. Eugenio Lorente Moreno,**
Supervisors: Miguel Ortega Sánchez, Andrea Lira Loarca and Pedro Magaña,
BSc. Civil Engineering. University of Granada, Spain.

Publications

Peer-reviewed journal papers

- B. M. Scotto, **A. Lira-Loarca**, A. Novellino, and G. Besio, "Dispersion monitoring services in the mediterranean sea: A multi-model statistical approach," *Marine Pollution Bulletin*, vol. 222, p. 118574, 2026.
- F. Ferrari, C. Zarzuelo, A. López-Ruiz, and **A. Lira-Loarca**, "Hydrodynamic and atmospheric conditions in a volcanic caldera: a comprehensive dataset at Deception Island, Antarctica," *Earth System Science Data*, vol. 17, no. 9, pp. 4881–4900, 2025.
- J. Holt, A. Katavouta, J. Hopkins, L. O. Amoudry, C. M. Appendini, L. Arneborg, A. Arnold, Y. Artioli, J. Aucan, B. Berx, L. Cagigal, M. D. Dominicis, C. Denamiel, G. Galli, J. A. Graham, Z. Jacobs, S. Jevrejeva, B. Kamranzad, C. Langlais, M. A. D. Larsen, **A. Lira-Loarca**, C. Lyddon, M. Mathis, A. Melet, F. Méndez, S. Muis, P. Myers, M. O'Donovan, A. I. Olbert, M. D. Palmer, L. Phillips, J. Polton, M. P. Buil, P. Robins, A. Ruju, J. A. Schlaefel, A. Senatore, S. Siedlecki, J. Tinker, G. Verri, I. Vilibić, X. Wei, and N. Pinardi, "Future climate projections in the global coastal ocean," *Progress in Oceanography*, vol. 235, p. 103497, 2025.
- A. Lira-Loarca** and G. Besio, "Ocean wave spectrum bias correction through energy conservation for climate change impacts," *Ocean Science*, vol. 21, no. 2, pp. 767–785, 2025.
- T. Toomey, **A. Lira-Loarca**, M. Marcos, G. Besio, and A. Orfila, "Future Wave Climate in the Mediterranean Sea and Associated Uncertainty From an Ensemble of 31 GCM-RCM Wave Simulations," *Earth's Future*, vol. 13, no. 4, 2025.
- M. Daliri, F. De Leo, **A. Lira-Loarca**, M. Scovenna, A. Stocchino, M. Capello, L. Cutroneo, and G. Besio, "From hindcast to forecast: A statistical framework for real-time coastal circulation bulletins in the Gulf of Genoa," *Applied Ocean Research*, vol. 154, p. 104337, 2025.
- C. Sabine, C. Robinson, K. Isensee, L. Bastian, S. Batten, R. Bellerby, R. Blasiak, S. Laarissa, **A. Lira-Loarca**, C. McGeachy, *et al.*, "Ocean Decade Vision 2030 White Papers—Challenge 5: Unlock Ocean-Based Solutions to Climate Change," 2024.

- M. Corrales-Gonzalez, G. Lavidas, **A. Lira-Loarca**, and G. Besio, "Wave energy assessment and wave converters applicability at the Pacific coast of Central America," *Frontiers in Energy Research*, vol. 12, p. 1454275, 2024.
- F. Aristodemo, **A. Lira-Loarca**, G. Besio, and T. Caloiero, "Detection and quantification of wave trends in the Mediterranean basin," *Dynamics of Atmospheres and Oceans*, vol. 105, p. 101413, 2024.
- A. Lira-Loarca**, P. Berg, A. Baquerizo, and G. Besio, "On the role of wave climate temporal variability in bias correction of GCM-RCM wave simulations," *Climate Dynamics*, pp. 1–28, 2023.
- A. Lira-Loarca** and G. Besio, "Future changes and seasonal variability of the directional wave spectra in the Mediterranean Sea for the 21st century," *Environmental Research Letters*, vol. 17, no. 10, p. 104015, 2022.
- R. Pimentel, C. Photiadou, L. Little, A. Huber, A. Lemoine, D. Leidinger, **A. Lira-Loarca**, J. Lückenkötter, and E. Pasten-Zapata, "Improving the usability of climate services for the water sector: The AQUACLEW experience," *Climate Services*, vol. 28, 2022.
- G. Casciaro, F. Ferrari, D. L. Oneto, **A. Lira-Loarca**, and A. Mazzino, "Increasing the skill of short-term wind speed ensemble forecasts combining forecasts and observations via a new dynamic calibration," *Energy*, 2022.
- A. Lira-Loarca**, A. Cáceres-Euse, F. De Leo, and G. Besio, "Wave modeling with unstructured mesh for hindcast, forecast and wave hazard applications in the Mediterranean Sea," *Applied Ocean Research*, 2022.
- M. Cobos, P. Otiñar, P. Magaña, **A. Lira-Loarca**, and A. Baquerizo, "MarineTools.temporal: A Python package to simulate Earth and environmental time series," *Environmental Modelling & Software*, p. 105359, 2022.
- E. Sebok, H. J. Henriksen, E. Pastén-Zapata, P. Berg, G. Thirel, A. Lemoine, **A. Lira-Loarca**, C. Photiadou, R. Pimentel, P. Royer-Gaspard, *et al.*, "Use of expert elicitation to assign weights to climate and hydrological models in climate impact studies," *Hydrology and Earth System Sciences Discussions*, pp. 1–35, 2021.
- A. Lira-Loarca**, F. Ferrari, A. Mazzino, and G. Besio, "Future wind and wave energy resources and exploitability in the mediterranean sea by 2100," *Applied Energy*, vol. 302, p. 117492, 2021.
- A. Lira-Loarca**, M. Cobos, G. Besio, and A. Baquerizo, "Projected wave climate temporal variability due to climate change," *Stochastic Environmental Research and Risk Assessment*, no. 35, p. 1741–1757, 2021.
- P. Magaña, J. Del-Rosal-Salido, M. Cobos, **A. Lira-Loarca**, and M. Ortega-Sánchez, "Approaching Software Engineering for Marine Sciences: A Single Development Process for Multiple End-User Applications," *Journal of Marine Science and Engineering*, vol. 8, p. 350, May 2020.
- A. Lira-Loarca**, M. Cobos, M. Ángel Losada, and A. Baquerizo, "Storm characterization and simulation for damage evolution models of maritime structures," *Coastal Engineering*, vol. 156, p. 103620, 2020.
- A. Lira-Loarca**, A. Baquerizo, and S. Longo, "Interaction of swell and sea waves with partially reflective structures for possible engineering applications," *Journal of Marine Science and Engineering*, vol. 7, 2019.
- M. Jalón, **A. Lira-Loarca**, A. Baquerizo, and M. Losada, "An analytical model for oblique wave interaction with a partially reflective harbor structure," *Coastal Engineering*, vol. 143, pp. 38 – 49, 2019.
- F. Addona, **A. Lira-Loarca**, L. Chiapponi, M. Losada, and S. Longo, "The Reynolds wave shear stress in partially reflected waves," *Coastal Engineering*, vol. 138, pp. 220 – 226, 2018.
- A. López-Ruiz, R. J. Bergillos, **A. Lira-Loarca**, and M. Ortega-Sánchez, "A methodology for the long-term simulation and uncertainty analysis of the operational lifetime performance of wave energy converter arrays," *Energy*, vol. 153, pp. 126 – 135, 2018.
- P. Magaña, A. López-Ruiz, **A. Lira**, M. Ortega-Sánchez, and M. A. Losada, "A public, open Western Europe database of shoreline undulations based on imagery," *Applied Geography*, vol. 55, pp. 278–291, Dec. 2014.

Books

- M. Cobos, **A. Lira-Loarca**, G. Christakos, and A. Baquerizo, *Theory and Applications of Time Series Analysis. ITISE 2018. Contributions to Statistics.*, ch. Storm Characterization Using a BME Approach. Springer Nature Switzerland.

International and National Conferences: participation and proceedings

International peer-reviewed conferences

A. Lira-Loarca, Y. D. Rao, F. Giaroli, and G. Besio, "AI Storm Surge Forecasting: Sensitivity Analysis of Foundation Models, Neural and Hierarchical Approaches," in *Proceedings of the 4th Workshop on Waves, Storm Surges, and Coastal Hazards and 18th International Workshop on Wave Hindcasting and Forecasting 2025*, (Santander, Spain), 2025.

T. Toomey, **A. Lira-Loarca**, M. Marcos, G. Besio, and A. Orfila, "Future wave climate in the Mediterranean Sea from a large ensemble of 31 GCM-RCM wave simulations," in *Proceedings of the 4th Workshop on Waves, Storm Surges, and Coastal Hazards and 18th International Workshop on Wave Hindcasting and Forecasting 2025*, (Santander, Spain), 2025.

A. Lira-Loarca, A. López-Ruiz, F. Giaroli, and G. Besio, "Assessing Future Compound Flooding in Chiavari, Liguria," in *Proceedings of the 4th Workshop on Waves, Storm Surges, and Coastal Hazards and 18th International Workshop on Wave Hindcasting and Forecasting 2025*, (Santander, Spain), 2025.

F. Giaroli, T. Toomey, **A. Lira-Loarca**, M. Marcos, and G. Besio, "Extreme Storm Surge Events in the Mediterranean: Variations in a Changing Climate," in *Proceedings of the 4th Workshop on Waves, Storm Surges, and Coastal Hazards and 18th International Workshop on Wave Hindcasting and Forecasting 2025*, (Santander, Spain), 2025.

A. Lira-Loarca, T. Toomey, M. Marcos, A. Orfila, and G. Besio, "Extreme wave climate in the Mediterranean Sea under RCP8.5 until 2100: A focus on extreme quantiles and return periods," in *Proceedings of the 7th MedCLIVAR Conference 2024*, (Lecce, Italy), 2024.

F. Giaroli, **A. Lira-Loarca**, F. Ferrari, and G. Besio, "A storm surge hindcast dataset for the Mediterranean Sea," in *Proceedings of the 7th MedCLIVAR Conference 2024*, (Lecce, Italy), 2024.

M. Aragón, **A. Lira-Loarca**, G. Martín-Llanes, J. del Rosal-Salido, A. López-Ruiz, and M. Ortega-Sánchez, "Climate change effects in estuarine morphodynamics: efficient long-term modeling," in *Proceedings of the 38th International Conference in Coastal Engineering 2024*, (Roma, Italy), 2024.

P. Otiñar, M. Santana, M. Cobos, P. Magaña, A. Millares, D. Gutiérrez, J. Martín, **A. Lira-Loarca**, and A. Baquerizo, "Projections of flooding and erosion in coastal zones of Andalucía (Spain) for the XXI Century: a probabilistic approach," in *Proceedings of the 38th International Conference in Coastal Engineering 2024*, (Roma, Italy), 2024.

T. Toomey, **A. Lira-Loarca**, M. Marcos, G. Besio, and A. Orfila, "Future wave climate in the Mediterranean sea from an ensemble of 33 GCM-RCMs," in *Proceedings of the 38th International Conference in Coastal Engineering 2024*, (Roma, Italy), 2024.

A. Lira-Loarca, T. Toomey, M. Marcos, and G. Besio, "Skill and uncertainties in GCM-RCM wind and wave projections in the Mediterranean Sea," in *Proceedings of the 38th International Conference in Coastal Engineering 2024*, (Roma, Italy), 2024.

F. Giaroli, **A. Lira-Loarca**, and G. Besio, "Climate change impacts on storm surge levels in the Mediterranean Sea," in *Proceedings of the 38th International Conference in Coastal Engineering 2024*, (Roma, Italy), 2024.

B. Scotto, **A. Lira-Loarca**, A. Novellino, and G. Besio, "High-resolution multi-model service of pollutant dispersion in the Mediterranean Sea," in *Proceedings of the 38th International Conference in Coastal Engineering 2024*, (Roma, Italy), 2024.

M. Santana, P. Otiñar, M. Cobos, P. Magaña, A. Millares, D. Gutiérrez, J. Martín, P. Arjona, **A. Lira-Loarca**, and A. Baquerizo, "Probabilistic study of flooding and erosion processes in coastal zones of Andalucía (Spain) for the XXI century," in *Proceedings of the 8th IAHR Europe Congress*, (Lisbon, Portugal), 2024.

B. Scotto, A. Novellino, G. Besio, and **A. Lira-Loarca**, "Multi-model statistical system for monitoring the dispersion of pollutants: Mediterranean case study," in *Proceedings of the EGU General Assembly 2024*, (Vienna, Austria), 2024.

A. Lira-Loarca and G. Besio, "Past and Future Seasonal Variability of the Spectral Wave Climate in the Mediterranean Sea," in *Proceedings of the 3rd International Workshop on Waves, Storm Surges, and Coastal Hazards and 17th International Waves Workshop*, (Notre Dame, Indiana, United States), 2023.

A. Lira-Loarca, A. Russo, S. Carniel, M. Bolla-Pittaluga, and G. Besio, "Future changes in wave climate in the Mediterranean and High North Seas under naval operations' perspective," in *Proceedings of the Climate Change & Security Workshop*, (Lerici, Italia), 2023.

A. Lira-Loarca, A. Russo, C. Strode, and S. Carniel, "Studying future changes in sonar performance in areas of NATO interest," in *Proceedings of the Climate Change & Security Workshop*, (Lerici, Italia), 2023.

A. Lira-Loarca and G. Besio, "Future changes in magnitude and frequency of extreme waves in the Mediterranean Sea," in *Proceedings of the 10th Conference on Applied Coastal Research*, (Istanbul, Turkey), 2023.

B. Scotto, **A. Lira-Loarca**, and G. Besio, "Dispersion monitoring services in the Mediterranean Sea: a multi-model statistical approach," in *Proceedings of the 10th Conference on Applied Coastal Research*, (Istanbul, Turkey), 2023.

F. Giaroli, **A. Lira-Loarca**, and G. Besio, "Future changes in joint waves and storm surge events in the Mediterranean Sea," in *Proceedings of the 10th Conference on Applied Coastal Research*, (Istanbul, Turkey), 2023.

A. Lira-Loarca and G. Besio, "Changes in wave extremes in the Mediterranean Sea due to climate change," in *Proceedings of the 9th International Conference on Meteorology and Climatology of the Mediterranean*, (Genoa, Italy), 2023.

F. Giaroli, **A. Lira-Loarca**, and G. Besio, "Future changes in joint waves and storm surge events in the Mediterranean Sea," in *Proceedings of the Effects of Climate Change in the World's Ocean (ECCWO5)*, (Bergen, Norway), 2023.

A. Lira-Loarca and G. Besio, "Future extreme wave events in the Mediterranean Sea by 2100," in *Proceedings of the Effects of Climate Change in the World's Ocean (ECCWO5)*, (Bergen, Norway), 2023.

A. Lira-Loarca, L. Mentaschi, and G. Besio, "Future changes in extreme waves and their seasonality in the Mediterranean Sea," in *Proceedings of the International Conference in Coastal Engineering*, (Sydney, Australia), 2022.

M. Corrales, **A. Lira-Loarca**, and G. Besio, "Wave hindcast in the pacific of Central America by using unstructured mesh," in *Proceedings of the International Conference in Coastal Engineering*, (Sydney, Australia), 2022.

M. Daliri, **A. Lira-Loarca**, G. Cremonini, F. De-Leo, L. Cutroneo, A. Reboa, M. Capello, A. Stochinno, and G. Besio, "Developent of an innovative system for assessing the pollutant dispersion within port waters," in *Proceedings of the International Conference in Coastal Engineering*, (Sydney, Australia), 2022.

F. Giaroli, **A. Lira-Loarca**, and G. Besio, "Future changes in joint waves and storm surge events in the Mediterranean Sea," in *Proceedings of the WCRP Sea Level Conference*, (Singapore), 2022.

F. Aristodemo, T. Caloiero, **A. Lira-Loarca**, and G. Besio, "Detection and quantification of wave trends in Southern Italy," in *Proceedings of the International Conference on Time Series and Forecasting ITISE*, (Gran Canaria, Spain), 2022.

A. Baquerizo, M. Bermúdez, P. Otiñar, P. Magaña, A. Millares, **A. Lira-Loarca**, and M. Cobos, "Probabilistic flood assessment in Mediterranean coastal areas of Andalucía (Spain): the ARCA project," in *Proceedings of the 39th IAHR World Congress*, (Granada, Spain), 2022.

A. Lira-Loarca, A. Baquerizo, and G. Besio, "Assessment of temporal-bias correction methods for wave climate projections in the mediterranean sea," in *Proceedings of the Ocean Sciences Meeting 2022*, 2022.

A. Lira-Loarca, F. Ferrari, and G. Besio, "Projected changes in wind and wave energy resource and combined exploitability in the mediterranean sea," in *Proceedings of the Ocean Sciences Meeting 2022*, 2022.

G. Casciaro, **A. Lira-Loarca**, and A. Mazzino, "Increasing the skill of short-term wind speed ensemble forecasts combining forecasts and observations via EMOS," in *Proceedings of the International Conference on Applied Energy 2021*, 2021.

- A. Lira-Loarca** and G. Besio, "Performance evaluation of bias adjustment methods for wave climate projections in the mediterranean sea," in *Proceedings of the EGU General Assembly 2021*, 2021.
- M. Bermúdez, A. Millares, **A. Lira-Loarca**, and A. Baquerizo, "Towards sustainable sediment management strategies in Mediterranean reservoirs: Insights from the Guadalfeo semiarid river basin," in *Proceedings of the 10th Conference on Fluvial Hydraulics*, (Delft, Netherlands (virtual conference)), 2020.
- A. Lira-Loarca**, M. Cobos, A. Millares, G. Besio, and A. Baquerizo, "Integrated extreme sea level events in the mediterranean coast of spain," in *Proceedings of the EGU General Assembly 2020*, 2020.
- C. Photiadou, L. Little, P. Berg, R. Pimentel, M. J. Polo, T. Sonnenborg, E. Pasten-Zapata, V. Andréassian, J. Lückenkötter, P. Kruse, D. Leidinger, A. Huber, S. Achleitner, **A. Lira-Loarca**, and B. Arheimer, "Best practises and lessons learnt from AQUACLEW," in *Proceedings of the EGU General Assembly 2020*, 2020.
- H. J. Henriksen, E. Pasten-Zapata, P. Berg, R. Pimentel, G. Thirel, **A. Lira-Loarca**, and C. Photiadou, "Expert elicitation as tool for climate and hydrological model uncertainty reduction," in *Proceedings of the EGU General Assembly 2020*, 2020.
- R. Pimentel, M. J. Polo, M. J. Pérez-Palazón, S. Achleitner, M. Díez-Minguito, A. Huber, P. Kruse, **A. Lira**, J. Lückenkötter, and M.-H. Ramos, "Assessing the role of a priori user knowledge in climate services perception: An experiment with university students across europe," in *Proceedings EGU General Assembly 2020*, 2020.
- A. Lira-Loarca**, M. Cobos, G. Besio, and A. Baquerizo, "Coastal flooding due to extreme events in the mediterranean coast of spain," in *Proceedings of the International Conference on Regional Climate ICRC-CORDEX19*, (Beijing, China), 2019.
- M. Cobos, **A. Lira-Loarca**, G. Christakos, and A. Baquerizo, "Storm characterization using a BME approach," in *Proceedings of the International Conference on Time Series and Forecasting ITISE*, (Granada, Spain), 2018.
- A. Lira-Loarca**, M. Cobos, A. Baquerizo, and M. A. Losada, "Multivariate forecasting of extreme wave climate and storm evolution," in *Proceedings of the International Conference on Time Series and Forecasting - ITISE*, (Granada, Spain), 2018.
- A. Lira-Loarca**, M. Cobos, A. Baquerizo, and M. A. Losada, "A multivariate statistical model to simulate storm evolution," in *Proceedings of the 36th International Conference on Coastal Engineering - ICCE*, (Baltimore, USA), 2018.
- A. Lira-Loarca**, M. Cobos, P. Magaña, A. Millares, and A. Baquerizo, "Integrated Statistical Modeling Framework of Maritime Data in a Climate Change Context: Application to MSc. Teaching," in *Proceedings of 10th International Conference on Education and New Learning Technologies - EDULEARN18*, (Palma de Mallorca, Spain), 2018.
- A. Lira-Loarca**, A. Baquerizo, and S. Longo, "Wind-wave interaction with a vertical semi-immersed barrier," in *Proceedings of 7th International Conference on the Application of Physical Modelling in Coastal and Port Engineering and Science - Coastlab18*, (Santander, Spain), 2018.
- A. López-Ruiz, P. Magaña, **A. Lira**, J. Gallego, and M. Ortega-Sánchez, "Databases of coastal features as an introduction to coastal engineering research," in *International Congress on Education, Innovation and Learning Technologies - ICEILT*, (Granada, Spain), 2015.
- P. Magaña, A. López-Ruiz, **A. Lira**, J. Gallego, and M. Ortega-Sánchez, "Using cutting-edge technologies to motivate students to engineering research: the example of data mining," in *International Congress on Education, Innovation and Learning Technologies - ICEILT*, (Granada, Spain), 2015.
- A. López-Ruiz, P. Magaña, **A. Lira**, and M. Ortega-Sánchez, "Exploring the potential of Google Earth for large-scale geographic studies: generating a database of coastal features," in *8th annual International Conference of Education, Research and Innovation - ICERI*, (Seville, Spain), 2015.
- P. Magaña, A. López-Ruiz, **A. Lira**, and M. Ortega-Sánchez, "Data mining: how to make a research methodology attractive for students and engineering applications," in *8th annual International Conference of Education, Research and Innovation - ICERI*, (Seville, Spain), 2015.

Italian peer-reviewed conferences

- A. Lira-Loarca** and G. Besio, "Future waves in the Mediterranean Sea: seasonal basin dynamics and 2D directional wave spectra," in *XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2024)*, (Parma, Italia), 2024.
- F. Giaroli, **A. Lira-Loarca**, F. Ferrari, and G. Besio, "On the role of forcings and model resolution for the simulation of extreme events in the Ligurian Sea," in *XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2024)*, (Parma, Italia), 2024.
- A. Lira-Loarca**, J. Rucco, and G. Besio, "Long-term simulation and evaluation of damage evolution of vertical wall breakwaters: sliding," in *Studi di Aggiornamento. Associazione di Ingegneria Offshore e Marina 2022*, (Parma, Italia), 2022.
- F. Giaroli, **A. Lira-Loarca**, and G. Besio, "Prestazioni di GCM-RCMs nell'analisi di eventi congiunti di wind waves e storm surge nel Mediterraneo," in *Studi di Aggiornamento. Associazione di Ingegneria Offshore e Marina 2022*, (Parma, Italia), 2022.
- A. Lira-Loarca** and G. Besio, "Future temporal and multimodal changes in waves in the Mediterranean Sea," in *XXXVIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2022)*, (Reggio Calabria, Italia), 2022.
- F. Aristodemo, T. Caloiero, N. Livadoti, **A. Lira-Loarca**, and G. Besio, "Analysis of wave trends in the Mediterranean Sea," in *XXXVIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2022)*, (Reggio Calabria, Italia), 2022.
- F. Giaroli, **A. Lira-Loarca**, and G. Besio, "Change in joint event occurrences of wind waves and storm surge from the past to the future through climatic projections," in *XXXVIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2022)*, (Reggio Calabria, Italia), 2022.
- M. Corrales, **A. Lira-Loarca**, and G. Besio, "Coastal risk assessment in Central America: from deep waters to nearshore regions," in *XXXVIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2022)*, (Reggio Calabria, Italia), 2022.
- A. Lira-Loarca** and G. Besio, "Impatti del cambiamento climatico nella caratterizzazione del clima marino e del suo comportamento interannuale e multimodale nel Mediterraneo," in *Studi di Aggiornamento. Associazione di Ingegneria Offshore e Marina 2021*, 2021.
- F. Addona, **A. Lira-Loarca**, L. Chiapponi, M. Clavero, M. A. Losada, and S. Longo, "Spatial variation of wave shear stresses, under partial reflection conditions. An experimental study," in *XXXVI Convegno Nazionale di Idraulica e Costruzioni Idrauliche*, (Ancona, Italia), 2018.

Spanish peer-reviewed conferences

- A. Lira-Loarca** and G. Besio, "Hindcast y Proyecciones de oleaje en el Mar Mediterráneo: Implicaciones para la Gestión de Puertos y Costas," in *XVII Jornadas Españolas de Ingeniería de Costas y Puertos*, (Ibiza, España), 2024.
- A. Lira-Loarca**, A. Baquerizo, and M. A. Losada, "Un estudio sobre el control de la agitación en la dársena de Guadiaro en el Puerto de Málaga," in *XV Jornadas Españolas de Ingeniería de Costas y Puertos*, (Torremolinos, Málaga, España), 2019.
- P. Magaña, J. Del-Rosal-Salido, M. Cobos, **A. Lira-Loarca**, and M. Ortega-Sánchez, "Desarrollo de software científico en el ámbito de la ingeniería de costas," in *XV Jornadas Españolas de Ingeniería de Costas y Puertos*, (Torremolinos, Málaga, España), 2019.
- A. Lira-Loarca**, F. Addona, M. Clavero, S. Longo, A. Baquerizo, and M. A. Losada, "Estudio experimental del transporte de cantidad de movimiento bajo la influencia de viento," in *XIV Jornadas Españolas de Ingeniería de Costas y Puertos*, (Alicante, España), 2017.
- C. Zarzuelo, A. López-Ruiz, M. Díez-Minguito, **A. Lira-Loarca**, and M. Ortega-Sánchez, "Alteraciones en el flujo de energía mareal en las bahías por el impacto de nuevas construcciones: Bahía de Cádiz," in *XIV Jornadas Españolas de Ingeniería de Costas y Puertos*, (Alicante, España), 2017.

A. Lira-Loarca, M. Clavero, and M. A. Losada, "Canal de Interacción Atmósfera-Océano (CIAO)," in *I Jornadas de Investigadores en Formación*, (Granada, España), 2016.

M. Cobos, **A. Lira-Loarca**, P. Magaña, and A. Baquerizo, "Caracterización espacial del viento en el entorno portuario basada en técnicas estadísticas a partir de registros SIMAR," in *I Jornadas de Investigadores en Formación*, (Granada, España), 2016.

A. M. Jiménez-Robles, **A. Lira-Loarca**, C. Zarzuelo, and M. Ortega-Sánchez, "Modelado numérico en desembocaduras fluviales," in *I Jornadas de Investigadores en Formación*, (Granada, España), 2016.

A. Lira-Loarca, P. Magaña, A. López-Ruiz, M. Ortega-Sánchez, and M. A. Losada, "Ondulaciones en la línea de costa: un ejemplo de la potencialidad de Google Earth para estudios costeros a gran escala," in *XIII Jornadas Españolas de Ingeniería de Costas y Puertos*, (Avilés, España), 2015.

S. Nieto, **A. Lira-Loarca**, M. Clavero, and M. A. Losada, "Canal de Interacción Atmósfera-Océano," in *XIII Jornadas Españolas de Ingeniería de Costas y Puertos*, (Avilés, España), 2015.

Open Science

Datasets

F. Ferrari and **A. Lira-Loarca**, "High-resolution atmospheric dataset at Deception Island, Antarctica." Zenodo [data set], <https://doi.org/10.5281/zenodo.14845212>, 2025.

C. Zarzuelo, **A. Lira-Loarca**, F. Ferrari, and A. López-Ruiz, "Hydrodynamic numerical model data at Deception Island, Antarctica." Zenodo [data set], <https://doi.org/10.5281/zenodo.14870881>, 2025.

A. Lira-Loarca and G. Besio, "MeteOcean wave climate and extremes statistics in the Mediterranean Sea: hindcast and multi-model ensemble of GCM-RCMs projections by 2100." SEANOE, <https://doi.org/10.17882/96246>, 2023.

A. Lira-Loarca and G. Besio, "MeteOcean 2D wave spectra statistics in the Mediterranean Sea: multi-model ensemble of GCM-RCMs projections by 2100." SEANOE, <https://doi.org/10.17882/96905>, 2023.

Invited talks: outreach and dissemination

L'impatto dei cambiamenti climatici e degli eventi estremi sulle coste e sul mare, Sestri Citta Aperta, 16th November, 2024. Riva Trigoso, Italy.

Knowledge and classification of risks, *Climate change and local communities. Risks, vulnerabilities, responses*, IX Rome International Workshop RIW2024. 16th July, 2024. Rome, Italy

High-resolution modeling of wind and waves in the Mediterranean Sea: a reliable forecast tool for the Ocean Race Grand Finale, *Unige at the Ocean Live Park in Alicante*, Ocean Race Alicante. 11th January, 2023. Alicante, Spain

Operational forecast of atmosphere and wave climate using Amazon Web Services, *AWS Initiate 2022*. Genova, Organized by Amazon Web Services. 17th November, 2022. Genova, Italy

Climate change effects on maritime climate in the Mediterranean Sea: future temporal and multimodal variability, *Science Diplomacy: workshop "Climate Change in the Broader Mediterranean area"*, Organized by the Italian Embassy in Cairo, Bibliotheca Alexandrina, NIOF and AASTMT. 09-10th October, 2022. Alexandria, Egypt

Impatti del cambiamento caratterizzazione del clima marino nel Mediterraneo, *Seminario Tempeste Estreme: Aspetti tecnici, gestionali ed assicurativi*, Naples Shipping Week, Organized by Consorzio Inter-Universitario per la Previsione e Prevenzione dei Grandi Rischi. 28th September, 2022. Salerno, Italy

Reviewer and Editor

Editor

2022 **Frontiers in Marine Science**, *Frontiers*, Advances and Modelling of Climate Change Effects on Coastal and Estuarine Hydro-Morphodynamics.
Topic Editor

2022 **Journal of Marine Science and Engineering**, *MDPI*, Remote Sensing Techniques in Marine Environment.
Guest Editor

Reviewer

2024 – **Coastal Engineering Journal**, Elsevier.

2023 – **Nature Communications**, Nature.

2023 – **Nature Reviews Earth & Environment**, Nature.

2022 – **Renewable Energy**, Elsevier.

2021 – **Frontiers in Marine Science**, Frontiers.

2021 – **Ocean Modelling**, Elsevier.

2021 – 2022 **Early Career Scientists associations group review of the Second Order Draft of the Working Group II contribution to the IPCC Sixth Assessment Report Climate Change 2021: Impacts, Adaptation and Vulnerability**, The Association of Polar Early Career Scientists (APECS), Mountain Research Initiative (MRI), Past Global Changes Early-Career Network (PAGES-ECN), Permafrost Young Researchers Network (PYRN), Young Earth System Scientists (YESS) community and the Intergovernmental Panel on Climate Change (IPCC).

2020 **Climate**, MDPI.

2019 - 2020 **Journal of Marine Science and Engineering**, MDPI.

2019 - 2020 **Remote sensing**, MDPI.

Other research activities

Conference sessions' chair

Sep. 2024 **38th International Conference in Coastal Engineering 2024**, Remote sensing session.

Feb. 2024 **Ocean Sciences Meeting 2024**, *Chairs: A. Koutanouva, A. Lira-Loarca, M. Pozo-Buil, J. Rulent.*, Mind the Gap: Understanding and Predicting Future Coastal Ocean Climates, Two oral sessions and one Poster session.

Intellectual Property Rights (IPR) registry

June 2020 **SIMSTORM. Storm analysis and simulation**, (*Análisis y simulación de tormentas*), M. Cobos, **A. Lira-Loarca**, P. Magaña, A. Baquerizo, M. Losada..

May 2016 **CORPORA. Tool for the analysis and simulation of port operations**, (*Herramienta para el cálculo de operatividad portuaria*), **A. Lira-Loarca**, P. Magaña, M. Cobos, A. Baquerizo, M. Losada..

June 2015 **TESLA. Western Europe Shoreline Ondulations Database**, (*Base de datos de ondulaciones de la línea de costa en Europa occidental*), **A. Lira-Loarca**, A. López-Ruiz, P. Magaña, M. Ortetga-Sánchez, M. Losada..

Research stays

8-12 Jan. 2024 **Department of Aerospace Engineering and Fluid Mechanics.,**
University of Seville, Spain.

Sep. 2018 - **Department of Engineering and Architecture,**
Feb. 2019 *University of Parma, Italy.*

Sep. 2017 - **Department of Engineering and Architecture,**
Feb. 2018 *University of Parma, Italy.*

Grants and awards

2018-2019 Extraordinary Doctoral Award, *Best PhD thesis in the Engineering and Architecture area*, awarded by the University of Granada.

2022 Ocean Sciences Meeting grant, *Registration grant to attend the 2022 Ocean Sciences Meeting*, awarded by the American Geophysical Union (AGU), the Association for the Sciences of Limnology and Oceanography (ASLO) and The Oceanography Society (TOS).

Seal of Excellence H2020-MSCA-GF-2020, *Awarded by the European Commission for a High Quality Project submitted to the Marie Skłodowska-Curie Actions H2020-MSCA-GF-2020..*

Travel and expenses grant, *Full financial support to attend the International Conference on Regional Climate-CORDEX (ICRC-CORDEX 2019)*, 14-18 Oct. 2019, Beijing, China, awarded by Swedish Meteorological and Hydrological Institute (SMHI) and World Climate Research Programme (WCRP).

Research stay fellowship, *Department of Engineering and Architecture, University of Parma, Italy*, Dec. 2018 - Feb. 2019, awarded by ERASMUS+ EU-programme.

Research stay fellowship, *Department of Engineering and Architecture, University of Parma, Italy*, Sep. - Nov. 2018, awarded by the International Campus of Excellence in Marine Science CEIMAR.

Travel and expenses grant, *Full financial support to attend the CLIVAR-FIO Summer School on Past, present and Future Sea level changes and UNESCO/IOC ODC Training Course on Ocean Forecast Systems*, 25 June - 07 July 2018, Qingdao, China, awarded by CLIVAR (Climate and Ocean: Variability, Predictability and Change) - World Climate Research Programme (WCRP), Intergovernmental Oceanographic Commission (IOC) of UNESCO and The First Institute of Oceanography (FIO), China.

Research stay fellowship, *Department of Engineering and Architecture, University of Parma, Italy*, Dec. 2017 - Feb. 2018, awarded by ERASMUS+ EU-programme.

Research stay fellowship, *Department of Engineering and Architecture, University of Parma, Italy*, Sep. - Nov. 2017, awarded by the Programme of International Mobility of PhD students of the University of Granada, Spain.

Travel and expenses grant, *Full financial support to attend HYDRALAB+ Next Generation Researchers's Workshop, New Scaling issues in hydraulic models and optical measurement techniques.*, 17 - 20 Jan. 2017, Toulouse, France, awarded by the Hydralab+ Project and University of Hull, UK.

Participation in R+D Projects

Public Funding

FOCUSMed,

Enhanced Assessment of Future Coastal Multi-Hazards and Compound Risks in the Mediterranean Sea, Young researchers - Seal of Excellence grant.

Funding organism: Italian Ministry of Education, University and Research

Duration: 20/12/2022 – 19/12/2024

Project director: **Andrea Lira Loarca**

Funding received: 150.000,00 euros

Seal of Excellence - attrazione di talenti @UniGe,

Quantifying extreme coastal water levels in the Mediterranean Sea (ForeMedSea).

Funding organism: University of Genoa (UniGE) and Compagnia San Paolo Foundation

Duration: 01/12/2021 – 30/11/2022

Project director: **Andrea Lira Loarca**

Funding received: 33.557,00 euros

SINAPSI,

Assistenza alla navigazione per l'accesso ai porti in sicurezza.

Funding organism: Interreg Italy-France Maritime

Duration: 2018 – 2022

Project director: Giovanni Besio

ISYPORT,

Integrated system for mitigation of navigation risks.

Funding organism: Italian Ministry of Education, University and Research

Duration: 2018 – 2022

Project director: Giovanni Besio

Risk assessment in the Liguria region.

Funding organism: Agenzia Regionale per la Protezione dell'ambiente Ligure (ARPAL). Regione Liguria.

Duration: 2020 – 2022

Project director: Giovanni Besio

SICOMAR+,

Sistema transfrontaliero per la sicurezza in mare Contro i rischi della navigazione e per la salvaguardia dell'ambiente MARino (Cross-border system for safety at sea against the risks of navigation and for the protection of the marine environment).

Funding organism: Interreg Italy-France Maritime

Duration: 2018 – 2021

Project director: Giovanni Besio

ICCOAST,

Estudio de inundación y erosión en zonas costeras de Andalucía en un escenario de cambio climático (Flooding and erosion in coastal regions of Andalusia in a climate change scenario).

Funding organism: Andalusian Regional Government (Junta de Andalucía)

Duration: 2020 – 2021

Project director: Asunción Baquerizo Azofra

Funding received: 284.614,82 euros

PIRATES,

Multi-criteria analysis for physical and biotic risk assessment in estuaries.

Funding organism: Ministry of Economy, Industry and Competitiveness. Spanish Government

Duration: 2018 – 2020

Project director: Manuel Díez Minguito

Funding received: 96.679,00 euros

AQUACLEW-UGR,

Advancing quality of climate services for fluvial & coastal processes in Europe.

Funding organism: Ministry of Economy, Industry and Competitiveness. Spanish Government

Duration: 15/09/2017 – 15/09/2020

Project director: Asunción Baquerizo Azofra

Funding received: 96.000,00 euros

Recomendations for Maritime Works,

Redaction of the Recommendations for Maritime Works: Breakwaters (ROM 1.1).

Funding organism: Puertos del Estado. Spanish Government

Duration: 01/01/2012 – 01/01/2019

Project director: Miguel A. Losada

Funding received: 360.000,00 euros

Private Funding

Tools for the Simulation and Optimization of Port Operations Based on Probabilistic Methodologies.

Funding organism: UT FCC - Proes Consultores, S.A.

Duration: 01/09/2015 - 15/05/2016

Project director: Asunción Baquerizo Azofra

Funding received: 122.000,00 euros

UNDIGEN - Study of Ocean Wave Energy Extraction,

Activity III: Development of an experimental platform for the analysis, simulation and validation of offshore devices..

Funding organism: Abengoa Research S.L.

Duration: 11/03/2013 - 11/03/2016

Project director: Miguel A. Losada

Funding received: 120.000,00 euros

Courses and workshops

- 14-15 May 2019 **Copernicus Marine Service Training Workshop for to Iberia-Biscay-Ireland region,**
Lisbon, Portugal Organized by Copernicus Marine Service.
- 10-14 Sept. 2018 **ERA4CS Summer School on Climate Services from the users' perspective,**
Pisa, Italy Organized by ERA4CS (European Research Area for Climate Services) initiative of the Joint Programming Initiative (JPI Climate).
- 25-30 June 2018 **CLIVAR-FIO Summer School on Past, Present and Future Sea Level Changes,**
Qingdao, China Organized by CLIVAR (Climate and Ocean: Variability, Predictability and Change) part of the World Climate Research Programme (WCRP) & The First Institute of Oceanography (FIO), State Oceanic Administration (SOA), China .
- 2-7 July 2018 **UNESCO/IOC ODC Training Course On Ocean Forecast Systems,**
Qingdao, China Organized by the Intergovernmental Oceanographic Commission (IOC) of UNESCO & The First Institute of Oceanography (FIO), State Oceanic Administration (SOA), China .
- 13-15 Nov. 2017 **DualSPHysics Users Workshop,**
Parma, Italy Organized by the University of Parma. Italy; The University of Manchester, U.K.; Universidade de Vigo, Spain; Universiteit Gent - Flanders Hydraulics Research, Belgium. .
- 17-20 Jan. 2017 **HYDRALAB+ Next Generation Researchers' Workshop. "New Scaling issues in hydraulic models and optical measurement techniques",**
Toulouse, France Organized by the HYDRALAB project (financed by EU Horizon 2020 Research and Innovation Programme).
- 15 March 2015 **Technical seminary "Fluid Mechanics Technologies",**
Madrid, Spain Organized by Alava Ingenieros.

Languages

- Spanish Mother tongue
English Proficient user - C2
Italian Advanced user - C1
French Basic user - A1

Certificate of Proficiency in English (CPE)

Certificat de connaissance en langue Française - niveau B1 (2012)