Curriculum Vitae

PERSONAL INFORMATION

Lorenzo Mentaschi

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💬 skype lorenzo.mentaschi

Date of birth: November, 2, 1978

Place of birth: Milan, Italy

WORKING EXPERIENCE

June 2021-Today — Junior Assistant Professor (RTDa) at University of Bologna

- Development of a global fully coupled high-resolution hindcast of waves and storm surges for studies on coastal impact, in collaboration with the Joint Research Centre of the European Commission (JRC) and Centro Mediterraneo per i Cambiamenti Climatici (CMCC).

- Research on physical and biogeochemical oceanography, coastal flooding, adaptation to climate changes.

- I'm currently working on the projects below:
    - EU interreg project AdriaClim, where I'm in charge of the biogeochemical model at Adriatic scale and of the computation of impact indicators for physical and biogeochemical variables.
    - ESA-funded project EOatSEE, where I'm in charge of flood modelling at the Adriatic Sea focus areas and on the long-term Extreme Value Analysis.
    - Project RENOVATE, funded by Autorità di Sistema Portuale del Mar Tirreno Centro Settentrionale, on the study of Nature Based Solutions for Climate Adaptation.
    - Horizon Europe project "Underlying models for the European DIgital Twin Ocean - EDITO-Model Lab".
    - ESA-funded project IRIDE on the development of a high-resolution biogeochemical model at Adriatic scale.

- I'm the scientific supervisor/co-supervisor of 2 PhD students enrolled in the FRONTIERS programme of the University of Bologna.

- I coordinate the work of research assistants involved in the projects AdriaClim, EOatSEE, RENOVATE and EDITO.

- I actively contribute to the development of the biogeochemical model BFM, being member of the development team.

- Teaching activity at the University of Bologna:
    - Modelling and Assessing Climate-Related Ocean and Coastal Hazards and Risks, Laurea Magistrale in Analisi e Gestione dell'Ambiente (Master Degree in Environment Analysis and Management), in English language (46 hours in 2022/23).
    - Corso di Struttura e Dinamica dell'Atmosfera e dell'Oceano, Laurea Triennale in Scienze Ambientali (Bachelor Degree Course in Environmental Sciences), module 2, in Italian language (18 hours in 2021/22 and 10 hours in 2022/23).
    - PhD course A060 of the FRONTIERS programme, "Atmospheric and Ocean predictability and forecasting", module on waves (4 hours in 2023).

- Collaboration with CMCC on the following research themes:
    - Large-scale modelling of wind waves and storm surges.
    - Impact of climate changes on the dynamics of the Adriatic Sea, with special regard to marine biogeochemistry and wind waves.
    - Coastal downscaling and flood modelling.
    - Development of the Biogeochemical Fluxes Model (BFM) and its implementation.
    - Extreme Value Analysis.

- Collaboration with JRC on the following research themes:
    - Development of a new set of global projections of waves and storm surges based on CMIP6.
    - Analysis of drought based on PESETAIV data.

- Collaboration with the University of Colorado on automated calibration of biogeochemical models.

July 2015-May 2021	## Researcher at the Joint Research Centre of the European Commission

- Development new statistical techniques for the studying of changing climatic extremes: a simplified technique for non-stationary extreme value analysis, and related copula-based non-stationary joint distributions. Using these methodologies, we studied the evolution in time of the hazard represented by extremes of waves, storm surges, river runoff, droughts, winds and heat waves on European and global scale.
- Study of climate changes and their effects on coastal risk and coastal inundation, using the models Wavewatch III and SCHISM/WWM.
- Development of a coupled storm-surges/currents/waves/tides model for operational purposes on unstructured meshes, using the model SCHISM/WWM.
- Development and application of a high-resolution runoff model (LISFLOOD) to estimate the future evolution of the dynamics of European river catchment areas in view of future climate change. Analysis of and future risks associated with river floods.
- Global-scale estimation of coastal erosion and accretion, based on the Google Earth Engine.
- Global-scale estimation of the Urban Heat Island, based on satellite data and on the Google Earth Engine.
- Development and testing new techniques for wave subscale modelling in the model Wavewatch III.
- Contribution to international scientific intercomparison groups on the impact of climate changes on waves and coasts (e.g., COWCLIP and CoastMIP).

January 2012 - March 2016

PhD

Course: fluid dynamics and environment technologies.

University of Genova, Dipartimento di Ingeneria Chimica, Civile e Ambientale (DICCA).

Supervisors: professors Giovanni Besio and Andrea Mazzino.

- Study of wave dynamics and use / development of Wavewatch III model.
- Implementation and validation of wave models in the Mediterranean Sea.
- Development of a high-resolution wave hindcast in the Mediterranean Sea.
- Development of a technique for parameterizing the effects of unresolved obstacles on wave models based on source terms.

Thesis title: Spectral wave modelling: improvements and applications in the Mediterranean Sea

2003 - 2015

Software developer

Atomos s.p.a./Sedapta s.r.l.

Via Nizza 35a 17100 Savona, Italy

http://www.atomos.it/

- I was the coordinator of the development of the Demand Planning modules.
- I collaborated to the definition of models and data fluxes for the leading projects concerning the Demand Planning.
- I participated to the definition of product specifications of different modules of the suite.
- I collaborated to the design and the implementation of the Atomos library components.

Sector: computer science, software engineering, industrial engineering, Supply Chain Management.

September-October 2013

Collaboration with IH Cantabria

In the frame of my PhD course I lived for two months in Santander, Spain, and collaborated with professors Fernando Mendez, Melisa Menendez and their staff. The argument of the collaboration is a new parameterization of unresolved obstacles in wave modelling. After my return to Italy we continued to collaborate. This collaboration resulted in the publication of a paper to Ocean Modelling in December 2014 with title "Parameterization of unresolved obstacles in wave modelling: a source term approach".

EDUCATION AND TRAINING

1998 – 2003	**Degree in Physics**

University of Padua, Dipartimento di Fisica (DIFI)

Thesis: "North Atlantic Oscillation and analysis of its dynamics through simplified models on global scale"

Supervisor: Professor Piero Lionello

PERSONAL SKILLS

Mother tongue   Italian

Other languages

English, fluent written and spoken.

Russian, good written and spoken. (International certificate of level B1, obtained at the Pushkin institute in Moscow).

Hungarian, A2 written and spoken.

Proficient writing skills in English

Soft skills

- Vast experience in drafting scientific papers and proposals.
- Consolidated experience in presenting scientific content to different public domains (scientific/stakeholders).
- Experience in coordinating and supervising the work of postgraduates and research assistants.
- Experience in teaching.
- Flexibility and capacity to adapt to circumstances and characteristics of my peers. Strong aptitude towards teamworking.

Technical skills

- Excellent knowledge of the python language.
- Excellent knowledge of the MATLAB language.
- Excellent knowledge of the wave model Wavewatch iii.
- Excellent knowledge of the ocean circulation/wave model SCHISM/WWM.
- Excellent knowledge of the river catchment area model LISFLOOD.
- Excellent knowledge of the flood model LISFLOOD-FP.
- Knowledge of the ocean circulation model NEMO.
- Excellent knowledge of the ocean biogeochemistry model BFM.
- Proficient knowledge of the Google Earth Engine, both in Javascript and Python.
- Excellent knowledge of the bash language and of the linux console.
- Strong experience in parallel development in python, MATLAB, Delphi, both multithread and multi-process.
- Strong experience in object-oriented programming.
- Excellent knowledge of the fortran language.
- Excellent knowledge of version control systems (git, svn).
- Excellent knowledge of pascal language and Delphi RAD studio.
- Excellent knowledge of relational databases and of SQL language (Oracle, MsSql, Sqlite, Mysql).
- Proficient knowledge of regular expressions.
- Proficiency using LaTex.
- Knowledge of Microsoft Visual Studio and c# language.
- Familiarity with netcdf and grib data format.
- Vast experience in using HPC infrastructures.
- Familiarity with storage and elaboration of large output/big data.
- Good knowledge of the Docker virtualization environment.

- ***Mentaschi, L.**, Vousdoukas, M., Garcia-Sanchez, G., Fernandez-Montblanc, T., Roland, A., Voukouvalas, E., Federico, I., Abdolali, A., Zhang, Y., J., Feyen, L. (2023). A global unstructured, coupled, high-resolution hindcast of waves and storm surge. FMS. Submitted. Q1.

- Vousdoukas, M., Ranashinge, R., Menendez Fernandez, P., Beck, M., **Mentaschi, L.**, Feyen, L. (2023). Small Island Developing States threatened by rising seas even if 2°C warming goal is achieved. Nature Sustainability. Submitted. Q1.

- Monioudi, I., Velgrakis, A., Chazistratis, D., Vousdoukas, M., Savva, C., Wang, D., Bove, G., **Mentaschi, L.**, Paprotny, D., Morales-Napoles, O. (2013). The fate of island beaches under a changing climate: Cyprus, Eastern Mediterranean. FMS. Submitted.

- Dottori, F., **Mentaschi, L.**, Bianchi, A. *et al.* Cost-effective adaptation strategies to rising river flood risk in Europe. *Nat. Clim. Chang.* **13**, 196–202 (2023). https://doi.org/10.1038/s41558-022-01540-0, Q1.

- Erikson, L., Morim, J., Hemer, M., Young, I., Wang, X. L., **Mentaschi, L.**, ... & Webb, A. (2022). Global ocean wave fields show consistent regional trends between 1980 and 2014 in a multi-product ensemble. *Communications Earth & Environment*, *3*(1), 320. Q1.

- Steinhausen, Max, Dominik Paprotny, Francesco Dottori, Nivedita Sairam, **Lorenzo Mentaschi**, Lorenzo Alfieri, Stefan Lüdtke, Heidi Kreibich, and Kai Schröter. "Drivers of future fluvial flood risk change for residential buildings in Europe." Global Environmental Change 76 (2022): 102559, Q1.

- Morim, J., Erikson, L.H., Hemer, M., Young, I., Wang, X., Mori, N., Shimura, T., Stopa, J., Trenham, C., **Mentaschi, L.** and Gulev, S., 2022. A global ensemble of ocean wave climate statistics from contemporary wave reanalysis and hindcasts. Scientific data, 9(1), p.358. Q1.

- Zulian, G., Marando, F., **Mentaschi, L.**, Alzetta, C., Wilk, B., & Maes, J. (2022). Green balance in urban areas as an indicator for policy support: a multi-level application. One Ecosystem, 7, e72685.

- Vousdoukas, M. I., Clarke, J., Ranasinghe, R., Reimann, L., Khalaf, N., Duong, T. M., …, **Mentaschi, L.**, & Simpson, N. P. (2022). African heritage sites threatened as sea-level rise accelerates. Nature Climate Change, 12(3), 256-262, Q1.

- Melet, A., Buontempo, C., Mattiuzzi, M., Salamon, P., Bahurel, P., Breyiannis, G., Burgess, S., Crosnier, L., Le Traon, P.Y., **Mentaschi, L**. and Nicolas, J., 2021. European Copernicus Services to Inform on Sea-Level Rise Adaptation: Current Status and Perspectives. Frontiers in Marine Science, p.1142.

- Hinkel J, Feyen L, Hemer M, Le Cozannet G, Lincke D, Marcos M, **Mentaschi L**., Merkens JL, de Moel H, Muis S, Nicholls RJ. Uncertainty and bias in global to regional scale assessments of current and future coastal flood risk. Earth's Future. 2021 Jul;9(7), Q1.

- ***Mentaschi L.**, Duveiller G., Zulian G., Corbane C., Pesaresi M., Maes J., Stocchino A., Feyen L. (2021). Global long-term mapping of surface temperature shows intensified intra-city urban heat island extremes. Global Environmental Change (submitted). IF: 10.427, Q1.

- Marando, Federica, Mehdi P. Heris, Grazia Zulian, Angel Udías, **Lorenzo Mentaschi**, Nektarios Chrysoulakis, David Parastatidis, and Joachim Maes. "Urban heat island mitigation by green infrastructure in European Functional Urban Areas." Sustainable Cities and Society 77 (2022): 103564, Q1.

- Tebaldi C., Ranasinghe R., Vouskoukas M., Rasmussen D., Vega-Westhoff B. Kirezci E., Kopp R, Sriver R., **Mentaschi L.** (2021). Extreme Sea Levels at Different Global Warming Levels. Nature Climate Change (under review). IF: 20.893, Q1.

- Morim J., Vitousek S, Erikson L, …, **Mentaschi L.** et al. (2021). Global changes in high-frequency extreme ocean wave events due to anthropogenic warming exceeding 2° C, Environ. Res. Lett. (submitted), Q1.

- Naumann G., Cammalleri C., **Mentaschi L.**, Feyen L. (2021). Increasiing economic drought impacts in Europe with antropogenic warming. Nature Climate Changes (accepted). IF: 20.893, Q1.

- ***Mentaschi L.**, Vousdoukas M., Fernandez Montblanc T., Kakoulaki G., Voukouvalas E., Besio G., Salamon P. (2020). Assessment of global wave models on regular and unstructured domains using the Unresolved Obstacles Source Term. Ocean Dynamics. IF: 2.043, Q2.

- De Leo F., Besio G., **Mentaschi L.** (2020). Trends and variability of ocean waves under RCP8.5 emission scenario in the Mediterranean Sea. Ocean Dynamics (accepted). IF: 2.043, Q2.

- Cammalleri C., Naumann G., **Mentaschi L.**, Bisselink B., Gelati E., De Roo A., Feyen L.(2020). Diverging hydrological drought traits over Europe with global warming. HESS (accepted). 3-y IF: 5.044, Q1.

- Morim J. Trenham C., …, **Mentaschi L.** et al. (2020). A global ensemble of ocean wave climate projections from CMIP5-driven models. Nature Scientific Data. IF: 5.541, Q1.

- Vousdoukas M., Ranasinghe R., **Mentaschi L.**, Plomaritis T., Panagiotis A., Luijendijk A., Feyen L. (2020). Sandy coastline under threat of erosion. Nature Climate Change. IF: 20.893, Q1.

- *****Mentaschi L.**, Alfieri L., Dottori F., Bisselink B., De Roo A., Feyen L. (2020). Independence of Future Changes of River Runoff in Europe from the Pathway to Global Warming. Climate. IF: 1.89, Q3.

- Vousdoukas M., **Mentaschi L.**, Ciscar J. C., Hinkel J., Ward P., Feyen L. (2020), Economic incentives for raising coastal flood defenses in Europe. Nature Communication. IF: 12.121, Q1.

- Fernandez-Montblanc T., Vousdoukas M., **Mentaschi L.**, Ciavola P. (2020). A Pan-European high resolution storm surge hindcast. Environment International. IF: 7.943, Q1.

- Marcos M., Rohmer J., Vousdoukas M.I., **Mentaschi L.**, Le Cozannet G., Amores A. (2019). Increased Extreme Coastal Water Levels Due to the Combined Action of Storm Surges and Wind Waves. Geophysical Research Letters. 3-y IF: 4.988, Q1.

- Morim J. Hemer M., …, **Mentaschi L.** et al. (2019), Robustness and uncertainties in global multivariate wind-wave climate projections. Nature Climate Change. IF: 20.893, Q1.

- Bevacqua E., Maraun D., Vousdoukas M., Voukouvalas E., Vrac M., **Mentaschi L.**, Widmann M. (2019), Higher probability of compound flooding from precipitation and storm surge in Europe under anthropogenic climate change. Science Advances. IF: 13.116, Q1.

- The WAVEWATCH III™ Development Group (WW3DG, 2019), User manual and system documentation of WAVEWATCH version 6.07, tech note 333, NOAA.

- *****Mentaschi, L.**, Vousdoukas, M., Besio, G., Feyen, L. (2019), alphaBetaLab: automatic estimation of subscale transparencies for the Unresolved Obstacles Source Term in ocean wave modelling.SoftwareX. IF: 2.14, Q2.

- Fernandez-Montblanc T., Vousdoukas, M., Ciavola, P., Voukovalas E., **Mentaschi, L.**, Breyiannis G., Salamon, P., (2018), Towards robust pan-European storm surge forecasting. Ocean Modelling. 3-y IF: 3.715, Q1.

- *****Mentaschi, L.**, Vousdoukas, M., Pekel, J-F., Voukouvalas, E., Feyen, L. (2018), Global long-term observations of coastal erosion and accretion. Nature Scientific Reports. 3-y IF: 4.558, Q1.

- Vousdoukas, M., **Mentaschi, L.**, Voukouvalas, E., Verlaan, M., Jevrejeva, S., Jackson, L., Feyen, L. (2018), Global probabilistic projections of extreme sea levels. Nature Communication. IF: 12.121, Q1.

- Vousdoukas, M., **Mentaschi, L.**, Voukouvalas, E., Bianchi, A., Dottori, F., Feyen, L. (2018), Climatic and socioeconomic controls of future flood risk in Europe, Nature Climate Change. IF: 20.893, Q1.

- *****Mentaschi, L.**, Kakoulaki, G., Vousdoukas, M., Voukouvalas, M., Feyen, L., Besio, G. (2018), Parameterizing unresolved obstacles with source terms in wave modeling: A real-world application. Ocean Modelling. 3-y IF: 3.715, Q1.

- Ciscar-Martinez JC, Feyen L., … **Mentaschi L.** et al. 2018. Climate impacts in Europe: final report of the JRC PESETA III project. Publications Office of the European Union, Luxembourg. ISBN:978-92-79-97218-8.

- Bisselink B., Bernhard J., Gelati E., Adamovic M., Guenther S., **Mentaschi L.**, De Roo Arie 2018. Impact of a changing climate, land use, and water usage on Europe's water resources. JRC Report number: JRC110927.

- Dosio, A., **Mentaschi, L.**, Fischer, E. and Wyser, K. (2018). Extreme heat waves under 1.5°C and 2°C global warming. Environ. Res. Lett. 3-y IF: 6.474, Q1.

- Vousdoukas M, Buziotas D, Giardino A, Bowver L, **Mentaschi L.**, Voukouvalas E, Feyen L (2018). Understanding epistemic uncertainty in large-scale coastal flood risk assessment for present and future climates. Natural Hazards and Earth System Sciences. 3-y IF: 3.47, Q1.

- Neumann, G., Alfieri, L., Wyser, K., **Mentaschi, L.**, Betts, R. A., Carrao, H., Spinoni, J., Vogt J., and Feyen, L. (2018). Global Changes in Drought Conditions Under Different Levels of Warming. Geophys. Res. Lett. 3-y IF: 4.988, Q1.

- Monioudi I, Asariotis R, Becker A, Bhat C, Dowding-Gooden D, Esteban M, Feyen L, **Mentaschi L**,

Nikolaou A, Nurse L, Phillips W, Smith D, Satoh M, O'Donnell Trotz U, Velegrakis A, Voukouvalas E, Vousdoukas M, Witkop R (2018). Climate change impacts on critical international transportation assets of Caribbean Small Island Developing States (SIDS): the case of Jamaica and Saint Lucia. Regional Environmental Change. 3-y IF: 3.74, Q2.

▪ Besio, G., Briganti R., Romano A., **Mentaschi L** and De Girolamo, P. (2017). Time clustering of wave storms in the Mediterranean Sea, NHESS. 3-y IF: 3.47, Q1.

▪ *****Mentaschi, L.**, M. I. Vousdoukas, E. Voukouvalas, A. Dosio, and L. Feyen (2017), Global changes of extreme coastal wave energy fluxes triggered by intensified teleconnection patterns, Geophys. Res. Lett., 44, 2416–2426. 3-y IF: 4.988, Q1.

▪ Vousdoukas, M. I., **Mentaschi, L.**, Voukouvalas, E., Verlaan, M. and Feyen, L. (2017), Extreme sea levels on the rise along Europe's coasts. Earth's Future, 5: 304–323. IF: 6.141, Q1.

▪ *****Mentaschi L.**, Vousdoukas M., Voukouvalas E., Sartini L., Feyen L., Besio G., and Alfieri L. 2016. The transformed-stationary approach: a generic and simplified methodology for non-stationary extreme value analysis. *Hydrology and Earth System Sciences*. 3-y IF: 5.044, Q1.

▪ Vousdoukas M. Voukouvalas E., **Mentaschi, L.**, Dottori F., Giardino A., Bouziotas D., Bianchi A., Salamon P. 2016. Developments in large-scale coastal flood hazard mapping. *Natural Hazards and Earth System Sciences*. 3-y IF: 3.47, Q1.

▪ Besio, G., **Mentaschi, L.** & Mazzino, A. 2015. Wave energy resource assessment in the Mediterranean Sea on the basis of a 35-year hindcast. *Energy*,94:50-63, 2016. 3-y IF: 7.05, Q1.

▪ *****Mentaschi L.**, Perez J., Besio G., Mendez F., Menendez M. 2015. Parameterization of unresolved obstacles in wave modeling: a source term approach. *Ocean modelling*, Ocean Surface Waves, Special Issue:93-102. 2-y IF: 3.715, Q1.

▪ *****Mentaschi L.**, Besio G., Cassola F. & Mazzino A. 2015. Performance evaluation of WavewatchIII in the Mediterranean Sea. *Ocean modelling*,90:82-94. 3-y IF: 3.715, Q1.

▪ Sartini L., **Mentaschi L.** & Besio G. 2015. Comparing different extreme wave analysis model for wave climate assessment along the Italian coast: the case of the Ligurian Sea. *Coastal engineering*, 100, pp. 37-47. 3-y IF: 4.576, Q1.

▪ *****Mentaschi L.**, Besio G., Cassola F. & Mazzino A., 2013. Problems in RMSE-based wave model validations. *Ocean modelling*, 72, pp. 53-58. 3-y IF: 3.715, Q1.

▪ *****Mentaschi L.**, Besio G., Cassola F. & Mazzino A., 2013. Developing and validating a forecast/hindcast system for the Mediterranean Sea. *Journal of Coastal Research*, SI 65. IF: 0.95, Q2.
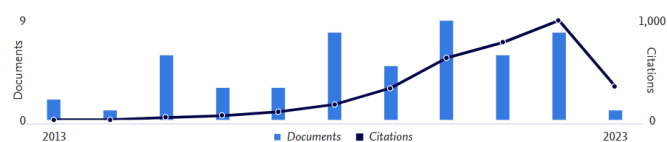
Mentaschi, Lorenzo

ⓘ Alma Mater Studiorum Università di Bologna, Bologna, Italy   ⓒ 55802062000 ⓘ   🆔 https://orcid.org/0000-0002-2967-9593   View more

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Document & citation trends

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5 documents

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3 documents

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Figure 1: citations overview and h-index graphs from Scopus (a) as of April 14, 2023.

CONFERENCES / WORKSHOPS

- XXXIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche, IDRA 2012, Brescia, Italy.

  Presentation: Implementazione e validazione di un modello di previsione e reanalisi del moto ondoso nel Mediterraneo Occidentale. Presented by L.M.

- G3-Giornate Giovani GNRAC, 2012, Ferrara, Italy.

  Presentation: Implementazione e validazione di un modello di previsione e reanalisi del moto ondoso nel Mediterraneo Occidentale. Presented by L.M.

- European Geoscience Union, 2013, Vienna, Austria.

  Presentation: Why NRMSE is not completely reliable for forecast/hindcast model test performances. Presented by L.M.

- 13th Wave Workshop, 2013, Banff, Canada.

  Presentation: Improving wave model validation based on RMSE. Presented by L.M.

- XXXIV Convegno Nazionale di Idraulica e Costruzioni Idrauliche, IDRA 2014, Bari, Italy.

  Presentation: Un modello di re-analisi del moto ondoso nel Mediterraneo: prestazioni e affidabilità. Presented by L.M.

- European Geoscience Union 2015, Vienna, Austria.

  Presentation: Parameterization of unresolved obstacles in wave modeling: a source term approach. Presented by L.M.

- Oceans 2015, Genova, Italy.

  Presentation: A preliminary wave energy exploitation assessment in the Northern Thyrrenian Sea. Presented by L.M.

- 14th Wave Workshop, 2015, Key West, USA.

  Presentation 1: Source term parameterization of unresolved obstacles in wave modelling: work in progress. Presented by L.M.

  Presentation 2: Non-stationary Extreme Values Analysis of waves: a simplified approach. Presented by L.M.

- Spring Waves School 2016, Brest, France.

  Presentation: Parameterization of unresolved obstacles in wave modeling: a source term approach. Presented by L.M.

- 1st Workshop on Waves, Storm Surges and Coastal Hazards, 2017, Liverpool, UK.

  Presentation: Extreme coastal wave energy fluxes: projected global changes. Presented by L.M.

- The Coordinated Ocean Wave Climate Project (COWCLIP) Meeting, 2017, Liverpool, UK.

  Presentation: LISCoAsT – Large scale Integrated Sea-level and Coastal Assessment Tool. Presented by L.M.

- The Coordinated Ocean Wave Climate Project (COWCLIP) Meeting, Paris, France.

  Presentation: The effects of changing spatial resolution in global wave models. Presented by L.M.

- 13th Annual International Symposium on Environment, 28-31 May 2018, Athens, Greece.

  Presentation: Global long-term patterns of coastal erosion and accretion. Presented by L.M.

- 2nd International Workshop on Waves, Storm Surges, and Coastal Hazards 16th International Workshop on Wave Hindcasting and Forecasting, Melbourne, Australia.

  Presentation: The Unresolved Obstacles Source Term, application cases on regular and triangular meshes. Presented by L.M.

- European Geoscience Union 2020, Vienna, Austria (virtual session)

  Presentation: On the independence from the emission pathway of the projected changes of river runoff. Presented by L.M.

- European Geoscience Union 2022, Vienna, Austria

  Presentation: Daily mapping of global surface temperature reveals intensified local extremes of Surface Urban Heat Island. Presented by L.M.

- AdriaClim workshop, June 2022, Split, Croatia

  Abstract title: Development of a High-Resolution Biogeochemical Model For the Adriatic Sea. Presented by L.M.

- Tutela e conservazione degli ecosistemi marini, June 2022, Civitavecchia, Italy.

  Presentation: Assessing the sensitivity of seagrass landscaping as a nature-based solution in the coastal belt of Emilia Romagna. Presented by L.M.

- AdriaClim & Stream workshop, September 2022, Venice, Italy. ***Invited Speaker**.

  Presentation: A high-resolution biogeochemical model for the Adriatic sea, ongoing progresses. Presented by L.M.

- Il programma Copernicus. I servizi europei per la gestione del territorio, February 2023, Bologna.

  Presentation: I sistemi costieri. Presented by L.M.

- MetMed International Conference, May 2023, Genova. ***Invited Speaker**.

  Presentation: Towards a Machine Learning system of Sea Level in the Northern Adriatic. Presented by L.M.

TEACHING EXPERIENCE

- Modelling and Assessing Climate-Related Ocean and Coastal Hazards and Risks, Laurea Magistrale in Analisi e Gestione dell'Ambiente (Master Degree in Environment Analysis and Management), in English language. Academic year 2022/2023. 46 hours.
- Corso di Struttura e Dinamica dell'Atmosfera e dell'Oceano, Laurea Triennale in Scienze Ambientali (Bachelor Degree Course in Environmental Sciences), module 2, in Italian language. Academic years 2021/2022 (18 hours) and 2022/2023 (10 hours).
- PhD course A060 of the FRONTIERS programme, "Atmospheric and Ocean predictability and forecasting", module on waves. Academic year 2022/2023. 4 hours.
- Lessons on waves within the course Ocean Science and Engineering, BA course of Maritime science and technology, University of Genova. Academic year 2020/2021. 2 hours.

BEST ACHIEVEMENTS

- In 2023, I was awarded the Italian National Scientific Qualification – **Abilitazione Scientifica Nazionale as Full Professor** (prima fascia), for the competition sector of Geophysics (04/A4).
- In 2022, I was awarded the Italian **National Scientific Qualification - Abilitazione Scientifica Nazionale as Associate Professor** (seconda fascia), for the competition sector 08/A1, idraulica, idrologia, costruzioni idrauliche e marittime.
- In 2022, I was awarded the Italian **National Scientific Qualification - Abilitazione Scientifica Nazionale as Associate Professor** (seconda fascia), for the competition sector 02/C1, Astronomia, Astrofisica, Fisica della Terra e dei Pianeti.
- In 2020, I was awarded the Italian **National Scientific Qualification - Abilitazione Scientifica Nazionale as Associate Professor** (seconda fascia), for the competition sector of Geophysics (04/A4).
- In 2017 we received the JRC Excellence Award as the best scientific research group of the JRC.
- I was awarded a grant by PADI foundation in 2014, for the project "Subscale Wave Modelling".
- I reviewed scientific publications on Nature Reviews Earth and Environment, Earth Future, Nature Scientific Reports, Science of the Total Environment, Geophysical Research Letters, Ocean Modelling, Ocean Dynamics, Limnology and Oceanography, Natural Hazard, Marine Geodesy, Ocean Engineering, Natural Hazard and Earth System Science, Atmosphere, Journal of Marine Science, Coastal Engineering, Journal of Climate, Journal of Hydrology, Frontiers in Marine Science and others.
- At the university of Genova, I implemented the wave component of an operational forecast chain on the Mediterranean Sea which is available online at the address
  http://www3.dicca.unige.it/meteocean/ .
  This service is popular in the Ligurian surfing community.
- I contributed to the implementation of wwiii at the meteorological center of the environmental agency of Liguria district (ARPAL). Results of the operational model are available at the link
  https://servizi-meteoliguria.arpal.gov.it/mare/meteomare.html .
- As a software developer I coordinated the development of the demand planning suite of Atomos group, and personally participated to the implementation of leading projects at some important industrial customers on the Italian panorama (e.g. Same, Gucci, D&G, Fendi). Now this product is used with satisfaction by several industries.
- As a developer at Atomos I participated in defining, engineering and implementing several software components which are now widely used in all Atomos products by hundreds of industrial partners.

OTHER PERSONAL INFOS

I love studying and learning. For many years I spent much of my spare time studying physics and since February 2011 I have been collaborating with professors Andrea Mazzino and Giovanni Besio at the university of Genova, working on the dynamics of sea waves. In 2012 I took the opportunity to joining the PhD course of fluid dynamics at the university of Genova, which I attended while maintaining my job at Atomos as a software developer. Working full time at the European Commission and subsequently at the University of Bologna, I could enlarge my horizons, engaging in multidisciplinary research and modelling in sectors of interest for policy making, and deepening my understanding of Earth Sciences. Now I love my job as a researcher, yet in my work I still find very useful my professional background in Computer Science.