PERSONAL INFORMATION

Francesco De Leo

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Sex M | Date of birth 04/12/1989 | Nationality Italian

ORCID: https://orcid.org/0000-0001-6895-4845
Web of Science ResearcherID: AAE-1664-2021
Scopus ID: 57195539800

WORK EXPERIENCE

01/10/2022 – *on going*

Research fellow (RTD-A)
Department of Civil, Chemical and Environmental Engineering (DICCA)
University of Genoa. Genoa (IT)
https://dicca.unige.it/
Ocean waves data modelling and analysis; coastal morphodynamic; maritime engineering; machine learning techniques; non-stationary analysis of time-series

01/10/2021 – 30/09/2022

PostDoc
DICCA
University of Genoa. Genoa (IT)
Ocean waves data modelling and analysis

01/10/2020 – 30/09/2021

PostDoc
Civil and Environmental Engineering Department
California Polytechnic State University. San Luis Obispo, CA (US)
https://ceenve.calpoly.edu/
Tidal regimes and flow; harbour engineering

02/12/2019 – 30/09/2020

PostDoc
DICCA
University of Genoa. Genoa (IT)
Ocean waves data modelling and analysis

01/03/2016 – 01/09/2016

Translation consultant
IN.GE Essegas
Verona (IT)
Coast estimates for gas pipeline systems

EDUCATION AND TRAINING

01/11/2016 – 31/10/2019

Ph.D in Fluid dynamic and environmental engineering

DICCA
University of Genoa. Genoa (IT)
Thesis: New methodologies for the characterization of extreme sea states: applications in the Mediterranean Sea
Date of defense: 06/04/2020

01/03/2018 – 31/08/2018

Visiting student

Istituto de Mecánica de los Fluidos y Ingeniería Ambiental
Universidad de la República Oriental de Uruguay. Montevideo (UY)

01/11/2016 – 31/10/2019

MSc in Environmental Engineering

Department of Civil, Mechanical and Environmental Engineering
University of Trento. Trento (IT)
Thesis: New methodologies for the characterization of extreme sea states: applications in the Mediterranean Sea
Date of defense: 06/04/2020

Schools Attended

Generation and Analysis of Waves in Physical Models.
Aalborg (DK). 29/11/2021 – 03/12/2021

4th International Summer School on Dynamics of Estuarine and Nearshore System (ENSY)
Granada (SP). 11/06/2019 – 21/06/2019

2nd International Course on Offshore Structures Design (IOSD)
Porto (PT). 07/05/2019 – 10/05/2019

School of Multivariate Analysis.
Genoa (IT), 21/01/2019 – 25/01/2019.

Wavewatch III training course.
Brest (FR), 26/06/2017 – 30/06/2017

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Spanish	C1	C1	C1	B2	B1
	DELE diploma – C1 level				

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

Communication skills: Good communication skills gained through several participation at conferences as a speaker

Driving license: B

Computer skills:
Microsoft Office™ tools: proficient
Linux system: proficient
Matlab®: proficient
SWAN (3rd generation wave model): proficient
Python: good
Q-GIS: good
X-Beach (morpho-dynamic model): good
Wavewatch III (3rd generation wave model): base
R: base

ADDITIONAL INFORMATION

Grants & fundings

AIOM Award 2022
Best Ph.D thesis in the field of Maritime Engineering and Hydraulics for 2019-2022
Issued by *Associazione di Ingegneria Offshore e Marina*

PADI foundation
Year 2018. Grant no. 32541
Project funded: “Microplastic particles behaviour in the sea: numerical models and field campaigns”

Projects

Isyport: Integrated System for navigation risk mitigation in PORTs
Investigator – fixed term contract
Development of a short-term/high-resolution forecast system for met-ocean parameters in the Tyrrhenian Sea, with a particular focus on the pilot ports of Augusta and Catania (Sicily, Italy). The project aims at reducing the risks of navigation in harbor areas.
https://www.isyport.com/

Sicomar+: SIstema transfrontaliero per la sicurezza in mare COntro i rischi della navigazione e per la salvaguardia dell'ambiente MARino
Investigator – fixed term contract
https://interreg-maritime.eu/web/sicomarplus

Other Roles

DICCA's representative for LTER Italia (Long Term Ecosystem Research Network)
LTER is a network of researchers operating in the protection and restoration of marine and terrestrial ecosystems, managed through Joint Research Units (JRU). The JRU of the University of Genoa coordinates the activities of the Departments involved, among which there is DICCA. I am in charge for the activities of DICCA in the framework of the LTER partnership.

Invited seminars

Extreme Sea states analysis in a changing climate: models and applications. Environmental Fluid Mechanics Research Group, University of Nottingham, Nottingham (UK), 04/06/202.

Teaching

Costruzioni Marittime. Lecturer
MSc in Civil Engineering
Department of Civil, Chemical and Environmental Engineering, University of Genoa
A.Y. 2018/2019; A.Y. 2019/2020; A.Y. 2022/2023

Coastal Structures and Shore Protection. Lecturer.
MSc in Environmental Engineering
Department of Civil, Chemical and Environmental Engineering, University of Genoa
A.Y. 2020/2021

Thesis supervision.
Master thesis:
- Marta Leveratto (LM-35; A.Y. 2020/2021)
- Annalisa De Leo (LM-35; A.Y. 2018/2019)
- Giulia Cremonini (LM-35; A.Y. 2018/2019)
- Luigi Pasquale (LM-35; A.Y. 2017/2018)
- Filippo Perata (LM-35; A.Y. 2017/2018)

Reviewer activity

Natural Hazard and Earth System Science (EGU)
Frontiers in Marine Science (Frontiers)
Climate, Coasts, Sensors, Water (MDPI)
Journal of Operational Oceanography (Taylor & Francis)

Conferences

The effect of harbor developments on high-tide flooding in Miami (FL). Talk. De Leo, F. (presenter), Talke, S.A. 37th International Conference on Coastal Engineering. Sydney (AU), 04/12/2022 – 09/12/2022.

Non-stationary extreme value analysis of sea states based on linear trends. Analysis of annual maxima series of significant wave height and peak period in the Mediterranean Sea. Talk. De Leo, F. (presenter), Besio, G., Briganti, & R., Vanem, E. Studi di aggiornamento AIOM. Parma (IT), 20/10/2022 – 22/10/2022.

Incremento del regime mareale nell'area portuale di Miami (FL). Cause ed effetti. Talk. De Leo, F. (presenter), Talke, S.A. XXXVI Convegno nazionale di idraulica e costruzioni idrauliche. Reggio Calabria (IT), 04/09/2022 – 07/09/2022.

Trends in tidal range around the U.S. and potential implications for flooding occurrence. Talk. De Leo, F. (presenter), Talke, S.A. EGU General Assembly (#vEGU21). Remote conferencing, 19/04/2021 – 30/04/2021.

Trends and variability of waves under scenario RCP8.5 in the Mediterranean Sea. Talk. Besio, G., Mentaschi, L., & De Leo, F. (presenter). 2nd International Workshop on Waves, Storm Surges and Coastal Hazard. Melbourne (AU), 10/11/2019 – 15/11/2019.

Evaluation of HF-radar wave measures in the Gulf of Naples. Talk. De Leo, F. (presenter), Besio, G., Saviano, S., Zambianchi, E., & Uttieri, M. 2019 IMEKO TC-19 International Workshop on Metrology for the Sea. Genoa (IT), 03/10/2019 – 05/10/2019.

Extreme waves evaluation due to clustering techniques: an application in Mazara del Vallo (Sicily). Talk. De Leo, F. (presenter), Solari, S., & Besio, G. SCACR – International Short Course and Conference on Applied Coastal Research. Bari (IT), 09/09/2019 – 11/09/2019.

Wave-induced kinematic of microplastics in the sea: mathematical model and practical examples. Talk. Stocchino, A., De Leo, F. (presenter), & Besio, G. SCACR – International Short Course and Conference on Applied Coastal Research. Bari (IT), 09/09/2019 – 11/09/2019.

On the selection of critical thresholds within the "POT" analysis. Poster. De Leo, F., Besio, G. XXXV Convegno nazionale di idraulica e costruzioni idrauliche. Ancona (IT), 12/09/2018 – 14/09/2018.

Estimating a proper threshold within the POT approach: a simple and intuitive procedure. Poster. De Leo, F., Besio, G. EVAN – Extreme Value Analysis and application to Natural Hazard). Southampton (UK), 05/09/2017 – 07/09/2017.

Coastal erosion triggered by political and socio-economical abrupt changes: the case of Lalzit Bay, Albania. Talk. De Leo, F. (presenter), Besio, G., Zolezzi, G., Bezzi M., Lami, I., & Floqi, T. 35th International Conference on Coastal Engineering (ICCE). Antalya (TR), 17/11/2016 – 20/11/2016.

New strategic wave measurement station off Naples port main breakwater. Talk. Centurioni, L., Braasch, L., Di Lauro, E., Contestabile, P., De Leo, F. (presenter), Casotti, R., Franco, L., & Vicinanza, D. 35th International Conference on Coastal Engineering (ICCE). Antalya (TR), 17/11/2016 – 20/11/2016.

Publications on peer reviewed journals

De Leo, F., Enríquez, A. R., Orfila, A., & Besio, G. (2022). Uncertainty assessment of significant wave height return levels downscaling for coastal application. *Applied Ocean Research*, 127, 103303.

De Leo, F., Talke, S. A., Orton, P. M., & Wahl, T. (2022). The Effect of Harbor Developments on Future High-Tide Flooding in Miami, Florida. *Journal of Geophysical Research: Oceans*, 127(7), e2022JC018496.

Lira-Loarca, A., Cáceres-Euse, A., De-Leo, F., & Besio, G. (2022). Wave modeling with unstructured mesh for hindcast, forecast and wave hazard applications in the Mediterranean Sea. *Applied Ocean Research*, 122, 103118.

De Leo, F., Besio, G., Briganti, R., & Vanem, E. (2021). Non-stationary extreme value analysis of sea states based on linear trends. Analysis of annual maxima series of significant wave height and peak period in the Mediterranean Sea. *Coastal Engineering*, 167, 103896.

Cremonini, G., De Leo, F., Stocchino, A., & Besio, G. (2021). On the selection of time-varying scenarios of metocean parameters wind and ocean waves: Methodologies and examples along the Ligurian coastline applications in the North Tyrrhenian Sea. *Ocean Modelling*, 101819.

De Leo, F., Besio, G., & Mentaschi, L. (2021). Trends and variability of ocean waves under RCP8. 5 emission scenario in the Mediterranean Sea. *Ocean Dynamics*, 71(1), 97-117.

Cutroneo, L., Ferretti, G., Barani, S., Scafidi, D., De Leo, F., Besio, G., & Capello, M. (2021). Near Real-Time Monitoring of Significant Sea Wave Height through Microseism Recordings: Analysis of an Exceptional Sea Storm Event. *Journal of Marine Science and Engineering*, 9(3), 319.

Lavidas, G., De Leo, F., & Besio, G. (2020). Blue Growth Development in the Mediterranean Sea: Quantifying the Benefits of an Integrated Wave Energy Converter at Genoa Harbour. *Energies*, 13(16), 4201.

Rizza, U., Canepa, E., Miglietta, M. M., Passerini, G., Morichetti, M., Mancinelli, E., ... & Mazzino, A. (2020). Evaluation of drag coefficients under medicane conditions: Coupling waves, sea spray and surface friction. *Atmospheric Research*, 105207.

De Leo, F., De Leo, A., Besio, G., & Briganti, R. (2020). Detection and quantification of trends in time series of significant wave heights: An application in the Mediterranean Sea. *Ocean Engineering*, 202, 107155.

Oprandi, A., Mucerino, L., De Leo, F., Bianchi, C. N., Morri, C., Azzola, A., ... & Montefalcone, M. (2020). Effects of a severe storm on seagrass meadows. *Science of The Total Environment*, 141373.

Saviano, S., De Leo, F., Besio, G., Zambianchi, E., & Uttieri, M. (2020). HF radar measurements of surface waves in the Gulf of Naples (Southeastern Tyrrhenian Sea): comparison with hindcast results at different scales. *Frontiers in Marine Science*, 7, 492

De Leo, F., Solari, S., & Besio, G. (2020): Extreme wave analysis based on atmospheric pattern classification: an application along the Italian coast. *Natural Hazards and Earth System Sciences*, 20, 1233–1246, https://doi.org/10.5194/nhess-20-1233-2020.

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Stocchino, A., De Leo, F., & Besio, G. (2019). Sea Waves Transport of Inertial Micro-Plastics: Mathematical Model and Applications. *Journal of Marine Science and Engineering*, 7(12), 467.

De Leo, F., Besio, G., Zolezzi, G., & Bezzi, M. (2019). Coastal vulnerability assessment: through regional to local downscaling of wave characteristics along the Bay of Lalzit (Albania). *Natural Hazards and Earth System Sciences*, 19(1), 287-298