



# Martina Stagnitti

✉ **E-mail:** [martinastagnitti@gmail.com](mailto:martinastagnitti@gmail.com) ✉ **E-mail:** [martina.stagnitti@unict.it](mailto:martina.stagnitti@unict.it) ✉ **PEC:** [martina.stagnitti@ingpec.eu](mailto:martina.stagnitti@ingpec.eu)

☎ **Telephone:** (+39) 3478803016 [in](https://www.linkedin.com/in/martina-stagnitti-946397175) **LinkedIn:** [www.linkedin.com/in/martina-stagnitti-946397175](https://www.linkedin.com/in/martina-stagnitti-946397175)

👤 **ResearchGate:** [www.researchgate.net/profile/Martina-Stagnitti](https://www.researchgate.net/profile/Martina-Stagnitti)

**Sex:** Female **Date of birth:** 14/06/1995 **Place of birth:** Lentini (SR), Italy

## PROFESSIONAL EXPERIENCE

- [01/10/2025 – present] **Fixed-term Researcher in Hydraulic Engineering**  
*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*  
Funded by the Agreement AC.1 and the Research project P.1 (full titles provided in the “Scientific Activity” section).
- [01/09/2023 – 31/10/2025] **Research Technologist – Level II**  
*Department of Civil Engineering and Architecture, University of Catania, Catania, Italy*  
Funded by the Agreement AC.1 (full titles provided in the “Scientific Activity” section).
- [05/08/2024 – 31/10/2024] **Technical Consultant**  
*CSEI Catania - Centro Studi di Economia applicata all'Ingegneria, Catania, Italy*  
Support to the draft of the technical and economic feasibility assessment for the completion of water conveyance and diversion works.
- [14/06/2023 – 02/08/2023] **Contract Research Collaborator**  
*Department of Civil Engineering and Architecture, University of Catania, Catania, Italy*  
Funded by the Agreement AC.3 (full titles provided in the “Scientific Activity” section).
- [12/01/2022 – 13/01/2023] **Research Fellow**  
*Department of Civil Engineering and Architecture, University of Catania, Catania, Italy*  
Funded by the research project P.4 (full titles provided in the “Scientific Activity” section).

## EDUCATION

- [31/10/2018 – 23/12/2021] **PhD in Assessment and Mitigation of Urban and Territorial Risks (XIV cycle)**  
*University of Catania, Catania, Italy*  
**Thesis:** Upgrade of harbor rubble mound breakwaters in the context of climate change [supervisors: Prof. E. Foti and Prof. R.E. Musumeci (University of Catania), Prof. J.L. Lara (IH Cantabria)]
- [10/10/2016 – 25/10/2018] **Master degree in Civil Engineering of Waters and Transports (curriculum Waters)**  
*University of Catania, Catania, Italy*  
**Thesis (original title in Italian):** Bed-load transport of bimodal mixtures: optical measurements of bed shear stress and sediment transport rates [supervisor: Prof. R.E. Musumeci, co-supervisors: Prof. L.M. Stancanelli, Dr. Antonino Viviano] | **Final grade:** 110/110 cum laude
- [10/10/2013 – 06/10/2016] **Bachelor degree in Civil and Environmental Engineering**  
*University of Catania, Catania, Italy*  
**Thesis (original title in Italian):** Experimental analysis of the interaction between wave motion and gravity currents generated by a point-source release [supervisor: Prof. R.E. Musumeci, co-supervisor: Prof. L.M. Stancanelli] | **Final grade:** 110/110 cum laude

## TEACHING ACTIVITY

- [01/10/2025 – present] **Lecturer for the Master degree courses**  
*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*
- Management of hydraulic and maritime infrastructures
  - Water and Energy (original title in Italian)
  - Lab on Physical and Numerical Modelling of Hydraulic Systems
- [2024 – 2026] **Summer school tutor**  
*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*
- **AEOLIAN ISLAND SUMMER SCHOOL 2026.** 16-20/09/2026, Lipari, Italy.

- **MIT–UNICT Summer School 2026 – Resilient Solutions for Sicily.** 15-26/062026, Syracuse and Catania, Italy.
- **AEOLIAN ISLAND SUMMER SCHOOL 2025.** 24-28/09/2025, Lipari, Italy.
- **MIT–UNICT Summer School 2024 – Reinventing Coastal Wetlands.** 14-28/062026, Syracuse, Italy.

[2020 – present] **Educational outreach support**

*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*

Supported the organization and delivery of educational orientation sessions for upper secondary school students.

[31/10/2023 – present] **Member of PhD thesis working groups**

*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*

Member of **3 PhD Thesis working groups** on the following topics: development of territorial analyses for the characterization of flood risk based on cartographic data and remote sensing data; probabilistic design of coastal and port protection structures, with particular focus on rubble-mound and vertical-wall breakwaters; study of plastic transport in coastal environments through physical and numerical modelling.

[31/10/2018 – present] **Co-supervisor of Bachelor's and Master's theses**

*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*

Supervision of **17 Bachelor's theses** and **12 Master's theses** on topics including coastal and port engineering, hydraulic and flood risk management, coastal morphodynamics, climate change impacts, plastic transport in coastal and marine environments, hydraulic and maritime structures, probabilistic design, physical and numerical modelling, experimental methods, and remote sensing.

## SCIENTIFIC ACTIVITY

### Research Interests

Coastal and port engineering, with a focus on the **performance, reliability and climate resilience of coastal and port structures**; **wave–structure interaction** through physical and CFD modelling; **probabilistic and statistical analysis of meteo-oceanographic processes and failure risk**; **coastal hydrodynamics, morphodynamics and marine litter transport**; **flood risk and nature-based solutions**; development of **innovative experimental and field measurement techniques**, including drone-based surveys and ferrofluid-based methods.

[2018 – present] **Participation in research projects**

*Research Unit of the University of Catania*

#### Research group member

- P.1 [2025-present] **MARINE DUST - Plastic and biological Micro-pARTicle distribution induced by sea waves at the bottom, free-surface and density interfaces** (Prot. 202247MA8A) funded by the Italian Ministry of University and Research (MUR) under the PRIN 2022 programme.
- P.2 [2021–2026] **VARIO - VALutazione del Rischio Idraulico in sistemi cOmpleSSI**, funded by the University of Catania Research Incentive Plan 2020 – Line 2 “Departmental Research”.
- P.3 [2021-2026] **Models for the assessment of areas subject to wave-induced flooding along the Sicilian coastline and coastal stretches affected by erosion**, funded by the Department of Civil and Industrial Engineering and Architecture, University of Catania.
- P.4 [2020–2022] **BIOBLU - Robotic BIOremediation for coastal debris in BLUE flag beach and in a Maritime Protected Area** (J49C20000060007), funded by the European Regional Development Fund (ERDF) under the INTERREG Italy–Malta 2014–2020 Programme.
- P.5 [2020–2022] **IMOS - Interazione Moto Ondoso–Strutture**, funded by the University of Catania Research Incentive Plan 2020 – Line 2 “Departmental Research”.

#### Research collaborator

- P.6 [2023–2026] **PROMETEO - A PRObabilistic fraMEwork for coasTal and harbor dEfense in the cOntext of climate change** (Prot. P20224T9SK), funded by the Italian Ministry of University and Research (MUR) under the PRIN 2022 PNRR programme.
- P.7 [2023–2026] **PLATONE - PLastic Transport due to waves and currents ON Emerged and submerged beaches** (Prot. 2022BCJ5W3), funded by the Italian Ministry of University and Research (MUR) under the PRIN 2022 programme.
- P.8 [2021–2026] **REST-COAST - Large scale RESToration of COASTal ecosystems through rivers to sea connectivity** (call: H2020-LC-GD-2020; Proposal no. 101037097), funded by the European Union's Horizon 2020 Research and Innovation Programme.
- P.9 [2018–2019] European project **HYDRALAB PLUS** (proposal number 64110), funded by the European Commission under the Horizon 2020 programme.

[2018 – present] **Participation in research agreements and consultancy activities**

*Department of Civil-Industrial Engineering and Architecture, University of Catania, Catania, Italy*

### Research group member

- AC.1 [2023-present] Scientific Research Collaboration Agreement between the Department of Civil and Industrial Engineering and Architecture, University of Catania, and the Basin Authority of the Hydrographic District of Sicily, entitled **Hydrological and hydraulic studies for the identification of river corridors, the identification of Natural Water Retention Measures (NWRMs), and the definition of flood retention plan.**
- AC.2 [2025] Consultancy Agreement between SIDRA S.p.A. and the Department of Civil and Industrial Engineering and Architecture, University of Catania, entitled **Numerical modelling study of wave agitation within the roadstead of the Commercial Port of Augusta, in the area in front of the Container Terminal under construction.**
- AC.3 [2023] Scientific Research Collaboration Agreement between the Department of Civil and Industrial Engineering and Architecture, University of Catania, and the Basin Authority of the Hydrographic District of Sicily, entitled **Studies and research for the acquisition of data on coastal dynamics, the updating of the Coastal PAI (Hydrogeological Asset Management Plan) of the Sicilian Region, and the assessment of sediment requirements for restoring the equilibrium conditions of coastal areas: development of models for assessing areas subject to wave-induced flooding along the Sicilian coastline, in implementation of Directive 2007/60/EC.**
- AC.4 [2019-2022] Scientific Research Collaboration Agreement between the Port System Authority of the Eastern Sicilian Sea and the Department of Civil and Industrial Engineering and Architecture, University of Catania, entitled **Study and research activities for the hydraulic and stability assessment of representative sections of the breakwater of the Port of Catania through physical modelling and numerical modelling.**

### Research collaborator

- AC.5 [2023-2025] **Hydraulic and Maritime Engineering Study Services for the Port Master Plan (P.R.P.) of the Port of Termini Imerese (PA)**, conducted by the Department of Civil and Industrial Engineering and Architecture, University of Catania.
- AC.6 [2023] Consultancy Agreement between DUOMI SRL and the Department of Civil and Industrial Engineering and Architecture, University of Catania, entitled **Numerical modelling study of wave overtopping at the breakwater of the Port of Catania.**
- AC.7 [2021] Agreement between the Department of Civil and Industrial Engineering and Architecture, University of Catania, and the Municipality of Pozzallo (RG), entitled **Physical modelling study of the trunk section of the new lee-side breakwater of the Port of Pozzallo.**
- AC.8 [2020] Agreement between the Department of Civil and Industrial Engineering and Architecture, University of Catania, and EURECO SRL, entitled **Physical modelling study for the optimization of the trunk section of the rehabilitation works at the Port of Termini Imerese.**
- AC.9 [2020] Agreement between the Department of Civil and Industrial Engineering and Architecture, University of Catania, and the Municipality of Isola delle Femmine (PA), entitled **Physical modelling study of the trunk section of the breakwater of the Port of Isola delle Femmine.**

### [01/07/2020 – present] Speaker at national and international conferences

- R.1 **XL Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2026).** 9-11/09/2026, Naples, Italy. *Valutazione probabilistica delle performance di dighe a parete verticale. Il caso studio del Porto di Vado Ligure.*
- R.2 **39th International conference on coastal engineering.** 17-22/05/2026, Galveston, Texas, USA. *Probabilistic assessment of the performances of vertical breakwaters in a changing climate.*
- R.3 **COLLOQUIO AIOM 2025 - Evoluzione nella pianificazione e costruzione delle strutture marine e offshore.** 30-31/01/2025, Catania, Italy. *Valutazione della distribuzione spaziale delle performance di frangiflutti a gettata adeguati.*
- R.4 **XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA2024).** 15-18/09/2024, Parma, Italy. *Framework probabilistico per la progettazione di soluzioni di difesa costiera portuale in un contesto di cambiamenti climatici.*
- R.5 **38th International conference on coastal engineering.** 08-14/09/2024, Rome, Italy. *A numerical-based approach to predict plastic litter pathways in coastal areas.*
- R.6 **Breakwaters 2023.** 25-27/04/2023, Portsmouth, UK. *Probabilistic design of restoration solutions for historical breakwaters: the case study of the Port of Catania.*
- R.7 **XXXVIII Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA 2022).** 04-07/09/2022, Reggio Calabria, Italy. *Upgrade of harbor rubble-mound breakwaters in the context of climate change.*
- R.8 **XXXVII Convegno Nazionale di Idraulica e Costruzioni Idrauliche (IDRA 2020 online edition).** 14-16/06/2021. *Adattamento di opere di difesa costiera ai cambiamenti climatici. Il caso studio del molo foraneo del Porto di Catania.*
- R.9 **Virtual International Conference on Coastal Engineering.** 06-09/10/2020. *Catania Harbor breakwater: physical modelling of the upgraded structure.*

### [2024 – present] Editorial activities

- Guest Editor of the Special Issue “Probabilistic Design in Coastal Engineering: Experience, Issues and Perspectives” of the Journal of Marine Science and Engineering (2026–2027).
- Peer Reviewer for international indexed journals, including Coastal Engineering, Ocean Engineering, Ocean & Coastal Management, and Marine Pollution Bulletin.

[2019 – present] **Science communication**

- Participant to the European Researchers' Night, editions 2019, 2021, 2022, 2024 and 2026.
- Television interview, Linea Verde Life (RAI1), 23 November 2019, on the adaptation of coastal protection structures to climate change (<https://www.raiplay.it/video/2019/11/linea-verde-life---catania-2689bf2c-2b72-44b9-9a87-93a5fade87b3.html>).

[2020 – present] **Peer-Reviewed Publications in Indexed Scientific Journals**

- A.1 Di Pietro, G., Marino, M., **Stagnitti, M.**, Castro, E., Nasca, S., Cavallaro, L., Foti, E., Musumeci, R.E. (2026) HECO: A lightweight CMEMS-based oil-spill risk-assessment tool. *Ocean and Coastal Management*, 282, 108378, 10.1016/j.ocecoaman.2026.108378.
- A.2 **Stagnitti, M.**, Esposito, E., Simonetti, I., Musumeci, R.E., Cappiotti, L. (2026). Wave overtopping of non-conventional rubble-mound breakwaters: Blind comparison between experimental and numerical data. *Ocean Engineering*, 359, 236732, 10.1016/j.oceaneng.2026.125732.
- A.3 Borzi, L., Marino, M., **Stagnitti, M.**, Di Stefano, A., Sciandrello, S., Cavallaro, L., Foti, E., & Musumeci, R. E. (2025). Impact of coastal land use on long-term shoreline change. *Ocean & Coastal Management*, 262, 107583, DOI: 10.1016/j.ocecoaman.2025.107583.
- A.4 **Stagnitti, M.**, & Musumeci, R. E. (2024). Model-based estimation of seasonal transport of macroplastics in a marine protected area. *Marine Pollution Bulletin*, 201, 116191, DOI: 10.1016/j.marpolbul.2024.116191.
- A.5 Marino, M., **Stagnitti, M.**, Stancanelli, L. M., Musumeci, R. E., & Foti, E. (2023). Dynamics of wave-supported gravity currents in intermediate water. *Continental Shelf Research*, 267, 105082, DOI: 10.1016/j.csr.2023.105082.
- A.6 Castiglione, F., **Stagnitti, M.**, Musumeci, R. E., & Foti, E. (2023). Influence of van Gent parameters on the overtopping discharge of a rubble mound breakwater. *Journal of Marine Science and Engineering*, 11(8), 1600, DOI: 10.3390/jmse11081600.
- A.7 **Stagnitti, M.**, Lara, J. L., Musumeci, R. E., & Foti, E. (2023) Numerical modeling of wave overtopping of damaged and upgraded rubble-mound breakwaters. *Ocean Engineering*, 280, 114798, DOI: 10.1016/j.oceaneng.2023.114798.
- A.8 **Stagnitti, M.**, Musumeci, R. E., & Foti, E. (2023) Surface roughness measurement for the assessment of damage dynamics of existing and upgraded cube-armored breakwaters. *Coastal Engineering*, 179, 104226, DOI: 10.1016/j.coastaleng.2022.104226.
- A.9 **Stagnitti, M.**, Lara, J. L., Musumeci, R. E., & Foti, E. (2022) Assessment of the variation of failure probability of upgraded rubble-mound breakwaters due to climate change. *Frontiers in Marine Science*, 9, 986993, DOI: 10.3389/fmars.2022.986993.
- A.10 Foti, E., Musumeci, R. E., & **Stagnitti, M.** (2020). Coastal defence techniques and climate change: a review. *Rendiconti Lincei. Scienze Fisiche e Naturali*, 31(1), 123-138, DOI: 10.1007/s12210-020-00877-y.
- A.11 Stancanelli, L. M., Musumeci, R. E., **Stagnitti, M.**, & Foti, E. (2020). Optical measurements of bottom shear stresses by means of ferrofluids. *Experiments in Fluids*, 61(2), 52, DOI: 10.1007/s00348-020-2890-3.

## LANGUAGE SKILLS

**Native language:** Italian

**Other languages:** English (B2), Spanish (A2)

Levels: A1 and A2: Basic User - B1 and B2: Autonomous User - C1 and C2: Advanced User

## DIGITAL SKILLS

**Office & Communication:** Videocall platforms | Microsoft Office

**GIS & CAD:** Q-GIS | AutoCAD | Saga Gis | Google Earth Pro | ArcGIS Pro

**Programming:** Matlab | LaTeX | Python | LabView

**Hydraulic & Coastal Modelling:** SWAN | IH2VOF | Delft3D FM | OpenFOAM | SMS-CGWave | SMS-RMA2 | SMS-RMA4 | Hec-RAS | Hec-HMS

**Photogrammetry & Image Processing:** Agisoft Metashape | Gimp

## DECLARATIONS

I, the undersigned, Martina Stagnitti, born in Lentini (SR) on 14/06/1995, hereby:

- declare, pursuant to Article 76 of Presidential Decree No. 445/2000, that I am aware that false statements and the falsification or use of false documents are subject to criminal penalties under applicable laws, and declare that the information provided in this curriculum vitae is true and accurate;
- authorize the processing of the personal data contained in this curriculum vitae in accordance with Article 13 of Legislative Decree No. 196/2003 and Article 13 of Regulation (EU) 2016/679 (GDPR).

(Martina Stagnitti)

Martina Stagnitti

02.10.2026

14:44:23

GMT+02:00

