

Summer School 2025

# ECOWAVES

*Marine Soundscapes in the Anthropophony Era*

Naples, 26th-30th May 2025 - Darwin-Dohrn Museum

**Target Audience:** Open to graduate and PhD students, Postdocs and early-career researchers from the fields of: (i) biology and ecology who are willing to know more about underwater acoustics for their research; (ii) physics and engineering who are passionate about marine science and environmental conservation.

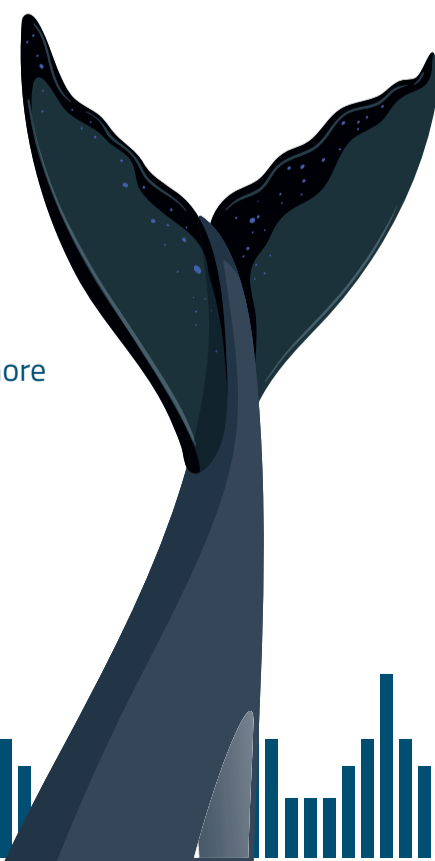
**In a nutshell:** This summer school is designed for offering a multidisciplinary approach for understanding the critical role of sound in marine ecosystems. It is a unique opportunity to join a growing community of researchers addressing one of the most pressing issues in marine conservation, preparing participants to contribute to innovative solutions and impactful research in this field. The program integrates theoretical and practical sessions, offering participants comprehensive insights into marine acoustic ecology, technological tools, and impactful research and communication strategies.

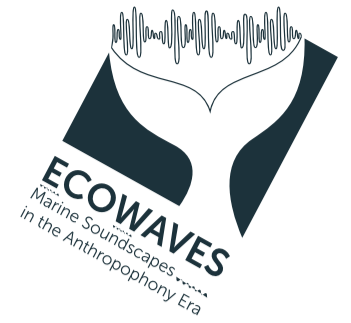
**Introduction:** This summer school offers participants a comprehensive introduction to applying acoustics in

ecological studies. Attendees will explore the science of acoustic waves in seawater, gaining foundational knowledge in the physics of sound and the use of cutting-edge instruments to analyze marine soundscapes. The program covers innovative methodologies, from passive acoustic monitoring to advanced technologies such as autonomous underwater vehicles and AI-driven signal detection. Participants will also learn how marine organisms use sound for essential biological functions and examine the effects of human-generated noise pollution on coastal and oceanic systems. Through a blend of theoretical knowledge and hands-on training, the course will provide the tools to assess the role of sound and the impacts of noise on the physiology and behavior of marine organisms. The program will further explore how these effects influence ecological communities, emphasizing the application of mesocosm experiments and field sampling to advance ecological research.

**ORGANIZERS:** Francesco Caruso,  
Filomena Ristoratore, Francesca Rossi, Marco Signore  
**INFO:** [ecowaves@szn.it](mailto:ecowaves@szn.it)

**Fee:** 250 euro per person  
(coffee breaks, lunches, icebreaking  
and social dinner included)





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## Theoretical lessons

- > Physics of underwater sound and measurement techniques.
- > Underwater acoustics and the role of sound from invertebrates to megafauna.
- > State-of-the-art acoustic technologies for monitoring biodiversity and environmental changes.
- > The impacts of anthropogenic noise on marine ecosystems and species.
- > Communicating acoustic ecology to the public through educational tools and outreach.

## Practical lessons

- > Setup and calibration of hydrophones and recording systems.
- > Identification of sound sources and species-specific vocalizations.
- > Use of software for data visualization and soundscape analysis.
- > In tank experiments to record effects of noise on invertebrates.

## Lecturers

**Dr. Francesco Caruso** (Stazione Zoologica Anton Dohrn)  
**Dr. Filomena Ristoratore** (Stazione Zoologica Anton Dohrn)  
**Dr. Francesca Rossi** (Stazione Zoologica Anton Dohrn)  
**Dr. Marco Signore** (Stazione Zoologica Anton Dohrn)  
**Prof. Giovanni Zambon** (University of Milano-Bicocca)  
**Dr. Salvatore Viola** (National Institute for Nuclear Physics)  
**Prof. Lucia Di Iorio** (University of Perpignan)  
**Prof. Lucia Manni** (University of Padua)  
**Dr. Marios Chatzigeorgiou** (University of Bergen)  
**Prof. Livio Favaro** (University of Turin)  
**Dr. Virginia Sciacca** (Italian National Research Council)

The course is open to 20 participants

## IMPORTANT INFORMATION

Applications: deadline 4 April.  
Participants will be notified by 15 April.  
Registration and payment are due by 30 April.

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