Marine Observatories

Caterina Bergami

IR0000032 – ITINERIS, Italian Integrated Environmental Research Infrastructures System
(D.D. n. 130/2022 - CUP B53C22002150006) Funded by EU - Next Generation EU PNRR-Mission 4 “Education and Research” - Component 2: “From research to business” - Investment 3.1: “Fund for the realisation of an integrated system of research and innovation infrastructures”

Finanziato dall'Unione europea NextGenerationEU
Ministero dell'Università e della Ricerca
Italiadomani

MARINE OBSERVATORIES

The term “observatory” appeared for the first time in the marine sector in 1921

IMPERIAL MARINE OBSERVATORY AT KOBE, JAPAN.

I have great pleasure in stating that this new government observatory was opened on August 26, 1920. The principal aims of the observatory are to make researches on meteorological, oceanographic, and magnetic subjects. We have to repair and test marine chronometers, magnetic compasses, and other measuring instruments for navigation. Funds for the buildings have been contributed by various shipowners at Kobe.

As far as magnetic work is concerned, we make a complete set of absolute measurements of the three elements by means of a magnetometer of the Indian survey pattern and an inclinatorium in the middle of each month. We further have a project to build a variation-house in the neighborhood of this port.

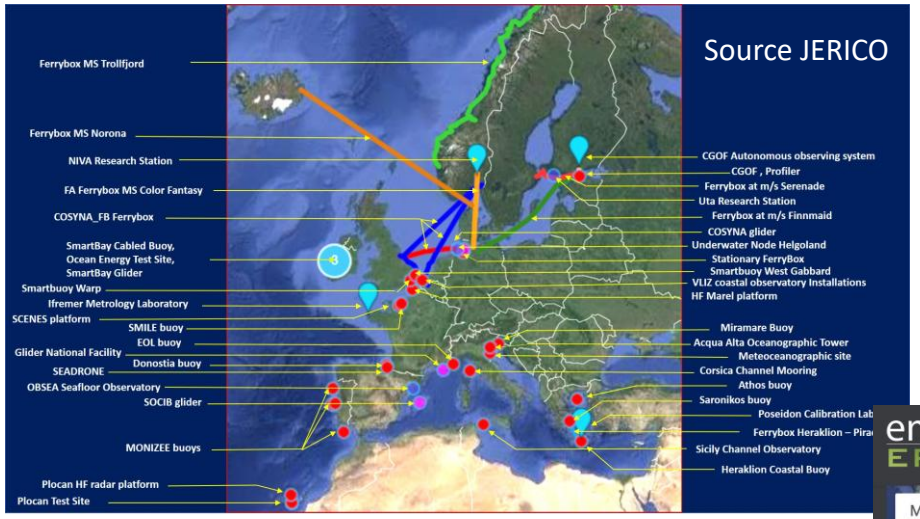
We hope to be able to publish Archives and Bulletins in European languages. We should be very much obliged if interested institutions will exchange publications with us.

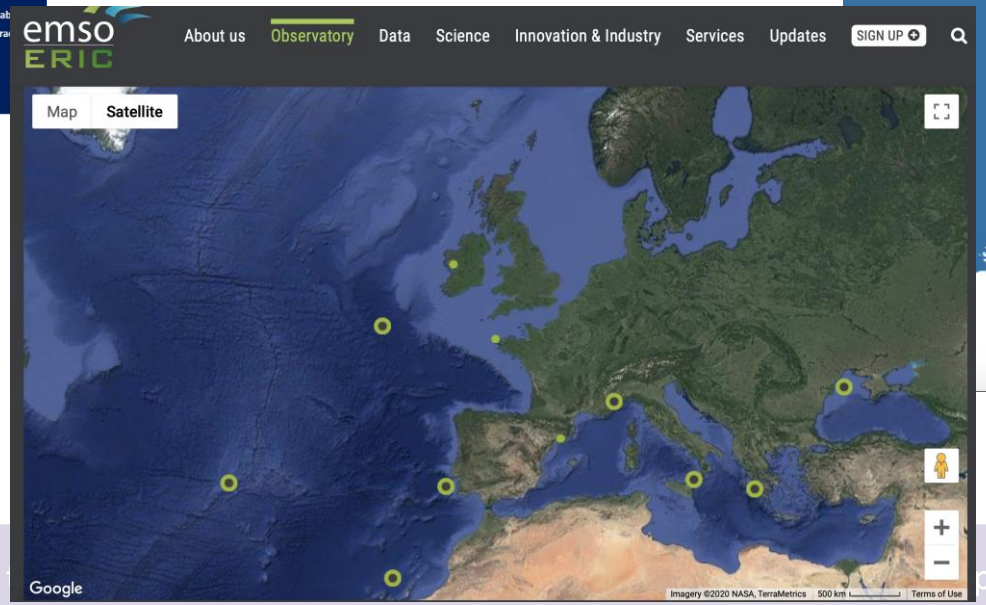
T. OKADA, *Director*.

Marine Observatory, Kobe, Japan, Oct. 15, 1920.

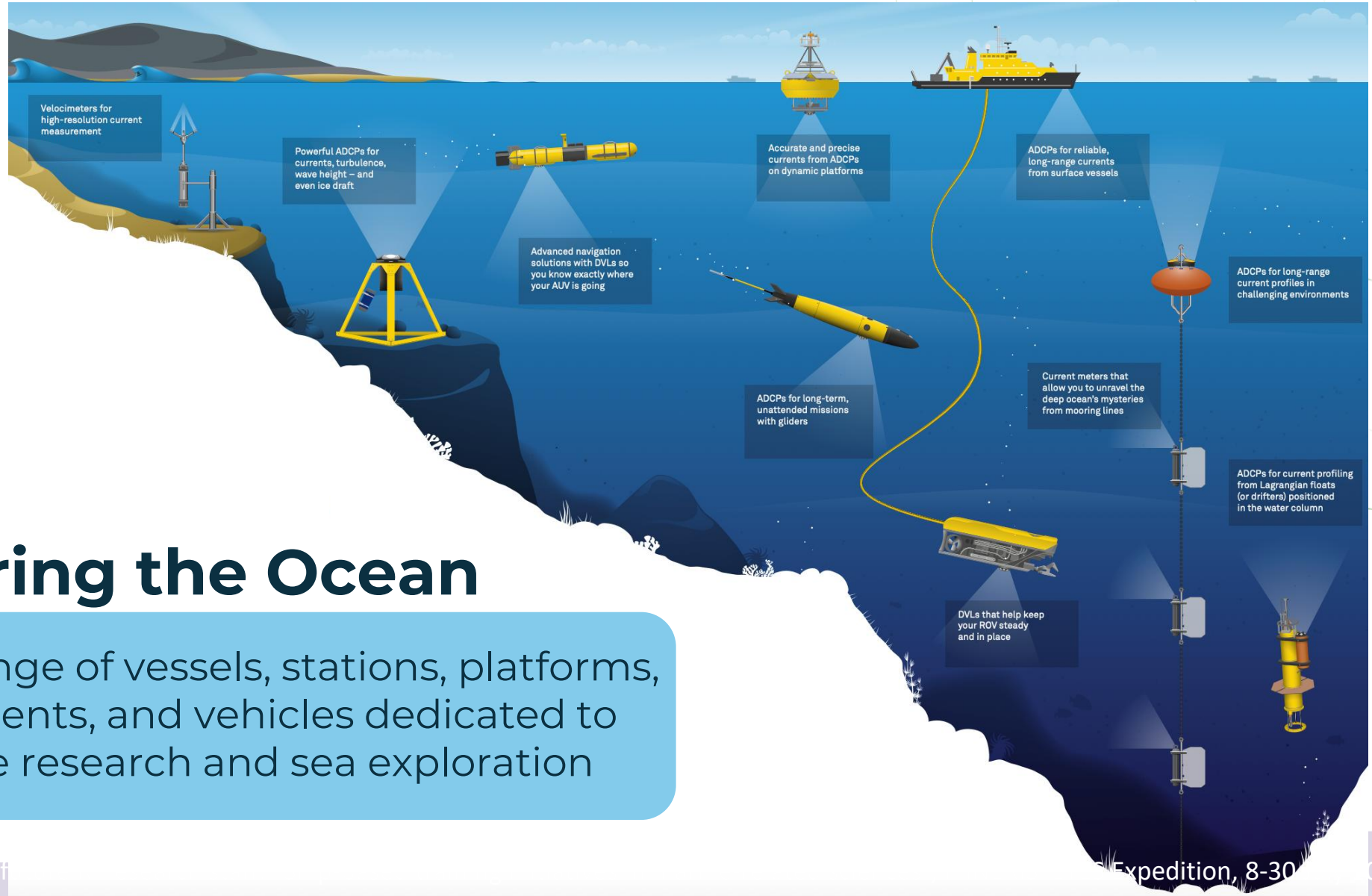
MARINE OBSERVATORIES

Marine Observatories (MOs) are globally widespread: they consist mainly of **observing, monitoring and experimenting infrastructures conceived to monitor oceanographic variables and to assess the state and modifications** of coastal and offshore sea in response to anthropogenic alterations and to the changing global climate.





Observing network for Ocean



Exploring the Ocean

A wide range of vessels, stations, platforms, instruments, and vehicles dedicated to marine research and sea exploration

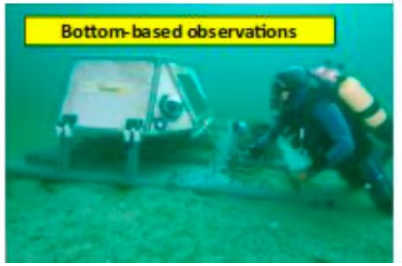
Observing network of ISMAR

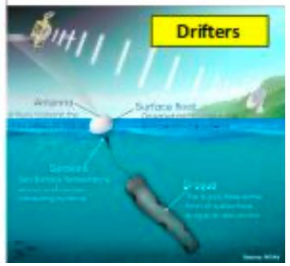
OBSERVING STATIONS

- Sea Stations (1)
- Seamarks (4)
- Buoys (1)
- Mooring (6)
- Coastal Stations (7)
- Hf-Radar (5)
- Lidar (1)

AUTONOMOUS SYSTEMS

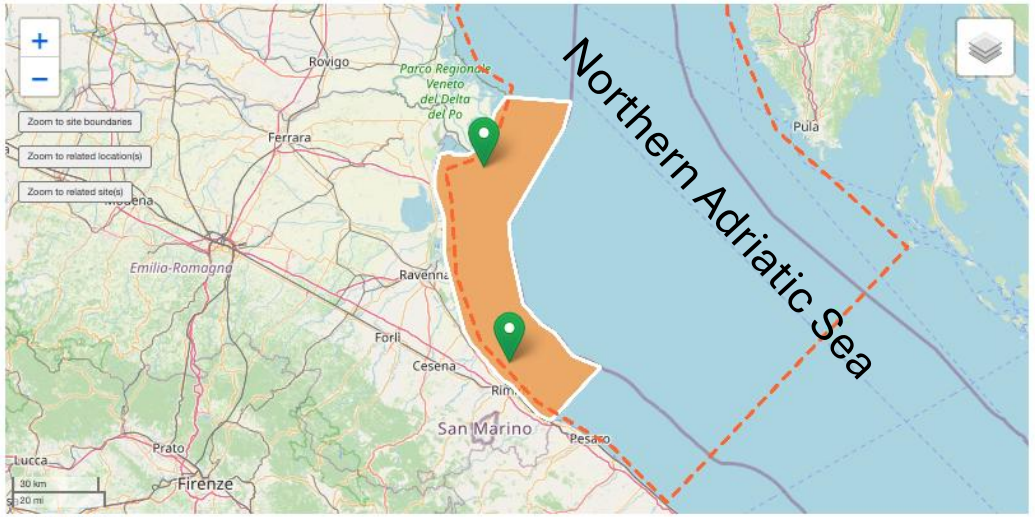
- GLIDER “Teresa”
- EURO-ARGO
- OpenSWAP (Bologna)
- SWAMP (Venice)
- Drifters
- OpenSWAP (Naples)





Observing systems in Northern Adriatic Sea

Geographic



View in site map

Centroid/Representative Coordinates: Latitude: 44.7505 Longitude: 12.46897
Size: ca. 1.00ha
Elevation (average): -10.00msl
Elevation (min): -20.00msl
Elevation (max): 0.00msl
Related location(s)

- E1 meteoceanographic buoy (Sampling Location)
- S1-GB dynamic pylon (Sampling Location)

S1-GB dynamic pylon

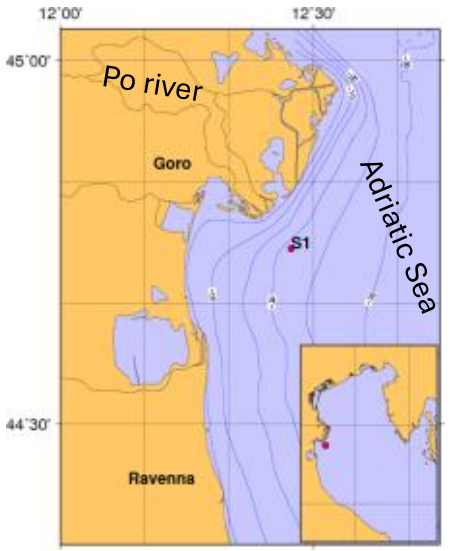
LTER-IT
Italian Long-term Ecosystem Research Network

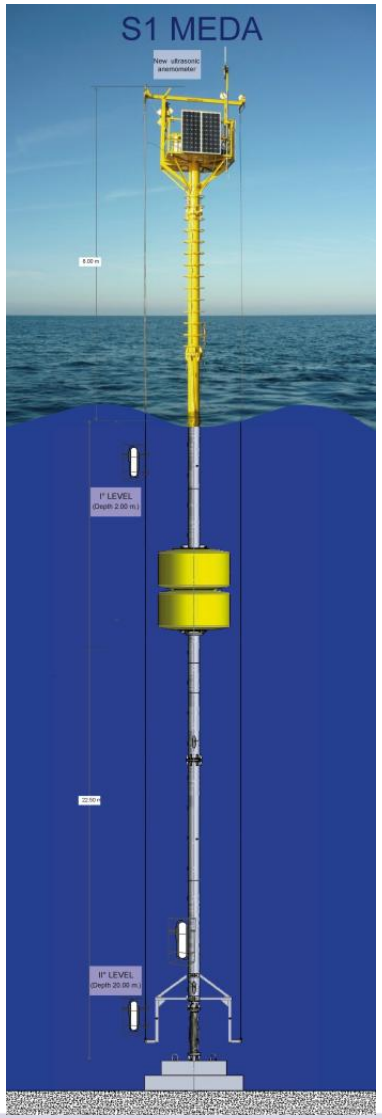
ITINERIS

E1 meteoceanographyc buoy

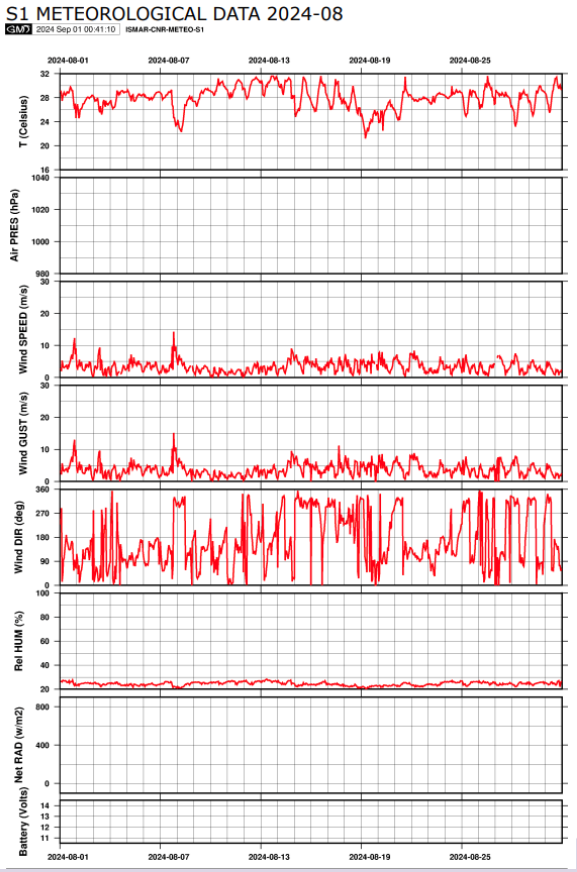
S1-GB Pylon

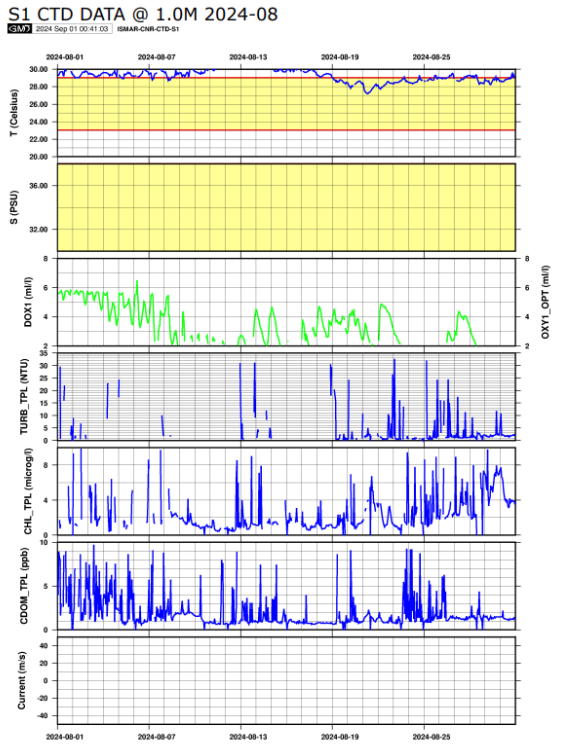
LOCATION: Northern Adriatic
(south of the Po River Delta)
Operative since April 2004
Max Depth: 22.5 m
Distance from the coast: 6 km
Frequency data acquisition:
30 minutes
Frequency data transmission:
1 hour
Web site:
http://s1.bo.ismar.cnr.it

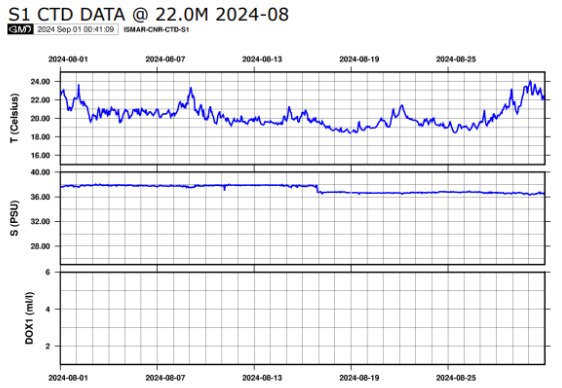




Meteo LEVEL	**+ 8.0 mt**
Ocean LEVEL	**-2.5 mt**
Ocean LEVEL	**-18.0 mt**





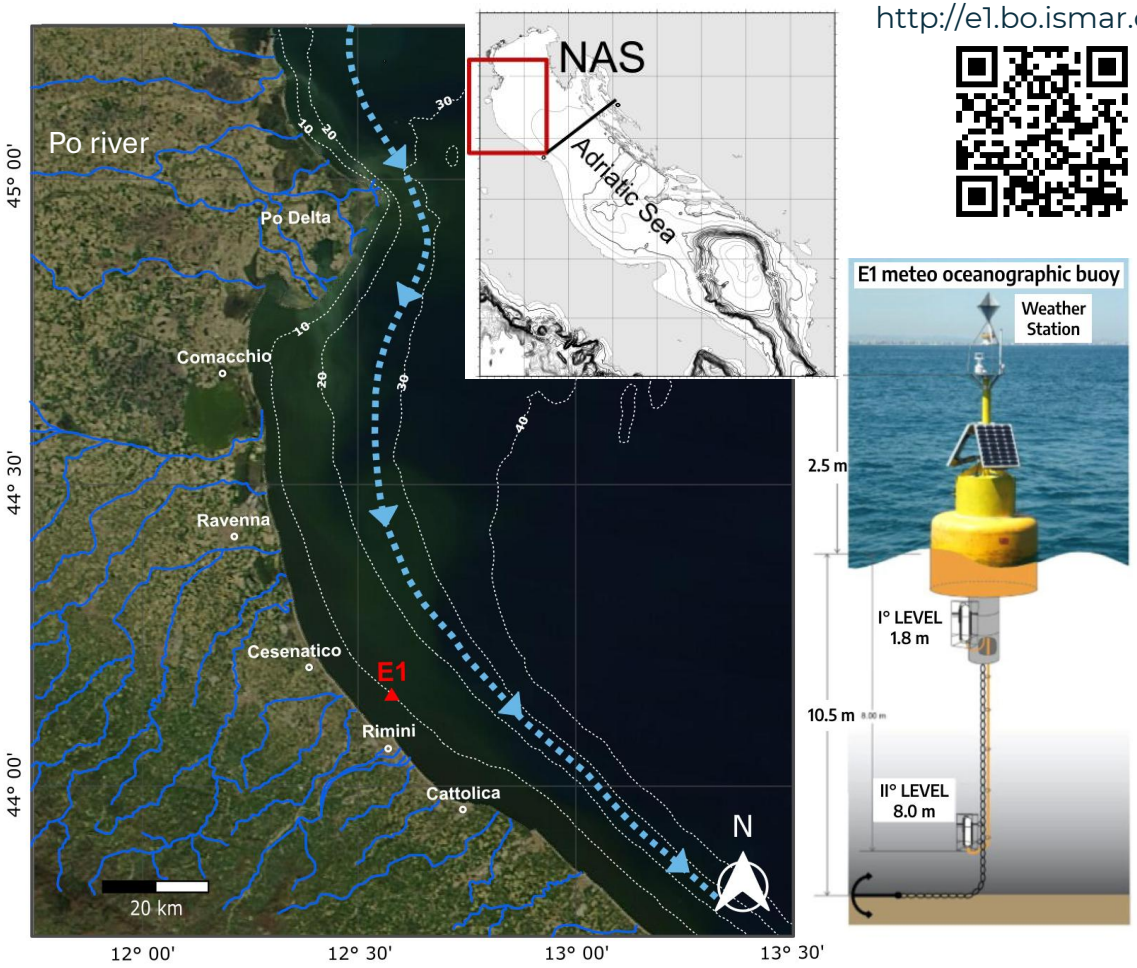


Parameter	Sensor
Atm Pressure	Gill GMX 501
Air Temperature	Gill GMX 501
Wind Speed, Direction & Gust	Gill GMX 501
Relative humidity	Gill GMX 501
Water temperature	SBE 37
Salinity	SBE 37
Dissolved Oxygen	SBE63
Turbidity	Wetlabs Triplet
Fluorescence (Chl)	Wetlabs Triplet
CDOM	Wetlabs Triplet
Current speed and direction	Aanderaa DCS 4100
Water temperature	SBE 37
Salinity	SBE 37
Dissolved Oxygen	SBE 63

E1 OCEANOGRAPHIC BUOY

GPS Coordinates: 44.14325 N, - 12.5701 E

Website:
http://e1.bo.ismar.cnr.it



Buoy E1 location

E1 meteo-oceanographic buoy, operative since 2006, is located at the **Delta del Po and Costa Romagnola** site in the Northern Adriatic Sea (Mediterranean Sea)

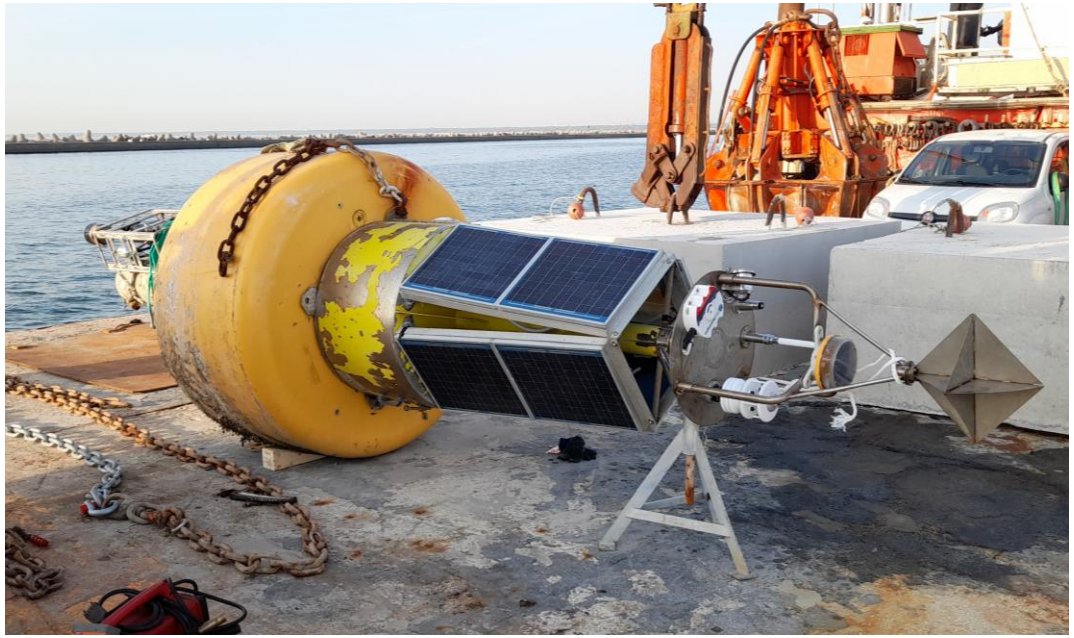
Parameter	Updated at May-2023
Atm pressure	Operating
Air Temperature	Operating
Wind speed and direction	Operating
Humidity	Operating
Solar radiation	Operating
Wave height and direction	Operating
Temperature	Operating
Salinity	Operating
Dissolved oxygen	Operating
Turbidity	Operating
Fluorescence (Chl)	Operating
CDOM	Operating
Current speed and direction	Operating
Temperature	Operating
Salinity	Operating
Dissolved oxygen	Operating

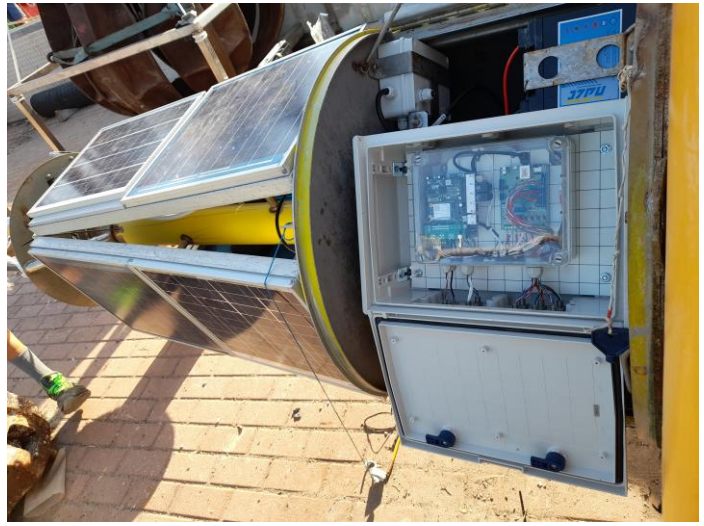
Meteo LEVEL	**+ 2.5 mt**
Ocean LEVEL	**-1.6 mt**
Ocean LEVEL	**-8.0 mt**

Parameter	Sensor
Atm Pressure	Gill GMX 501
Air Temperature	Gill GMX 501
Wind Speed, Direction & Gust	Gill GMX 501
Humidity	Gill GMX 501
Solar radiation	Gill GMX 501
Wave height and direction	Brizo-X
Water temperature	SBE 37
Salinity	SBE 37
Dissolved Oxygen	SBE63
Turbidity	Wetlabs Triplet
Fluorescence (Chl)	Wetlabs Triplet
CDOM	Wetlabs Triplet
Current speed and direction	Aanderaa DCS 4100
Water temperature	SBE 37
Salinity	SBE 37
Dissolved Oxygen	SBE 63

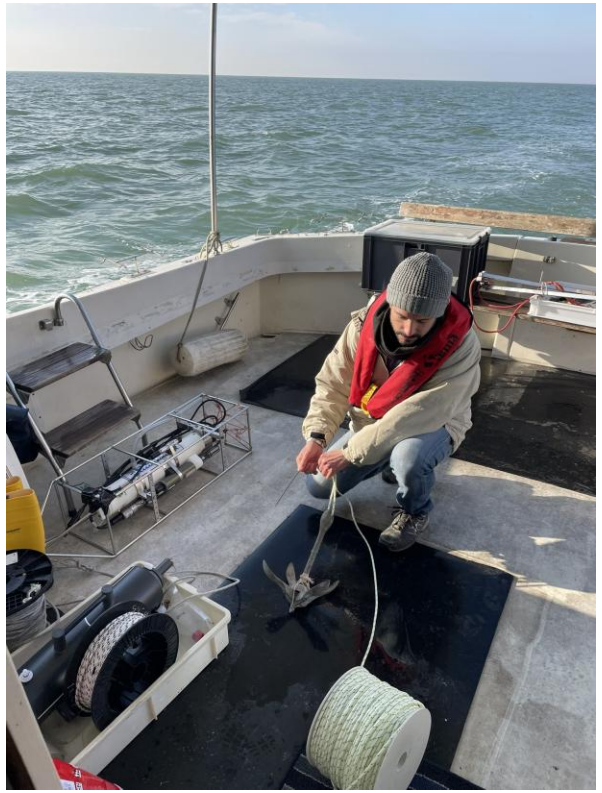
Overview of the E1 Buoy System

Observing systems in Northern Adriatic Sea





Observing systems in Northern Adriatic Sea



THANKS!

IR0000032 – ITINERIS, Italian Integrated Environmental Research Infrastructures System
(D.D. n. 130/2022 - CUP B53C22002150006) Funded by EU - Next Generation EU PNRR-Mission 4 “Education and Research” - Component 2: “From research to business” - Investment 3.1: “Fund for the realisation of an integrated system of research and innovation infrastructures”

Finanziato dall'Unione europea NextGenerationEU
Ministero dell'Università e della Ricerca
Italiadomani