Poster No.: 1644

OT44C: Democratizing Ocean Observation via Cost-Effective Fishing Vessel–Based Integrated and Other Approaches to Ocean Data Collection I Poster

Abstract ID: 1470199

OBSERVA.PT - The Portuguese autonomous ocean observing system

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FERRYBOX PROGRAMME

Figure 1

The trawler MV "Coimbra" (Fig. 1) holds a significant place as an emblematic Portuguese vessel. Constructed in the S. Jacinto Shipyards in 1973, it was considered the most modern Portuguese vessel of its time. To this day, it remains one of the few vessels proudly flying the national flag, continuing to undertake regular trips targeting codfish. Following the installation of ferrybox-type equipment, it embarked from the harbor of Aveiro on May 6th, 2022, heading to the Grand Banks of Newfoundland and later, on September 1st, to the Barents Sea. The Undersee_water (Fig. 2) is a ferrybox-type equipment (https://undersee.io/) that continuously measures various oceanographic parameters, including temperature, salinity, chlorophyll, dissolved oxygen, pH, and turbidity, while the vessel is in motion (Fig.3).

Figure 2

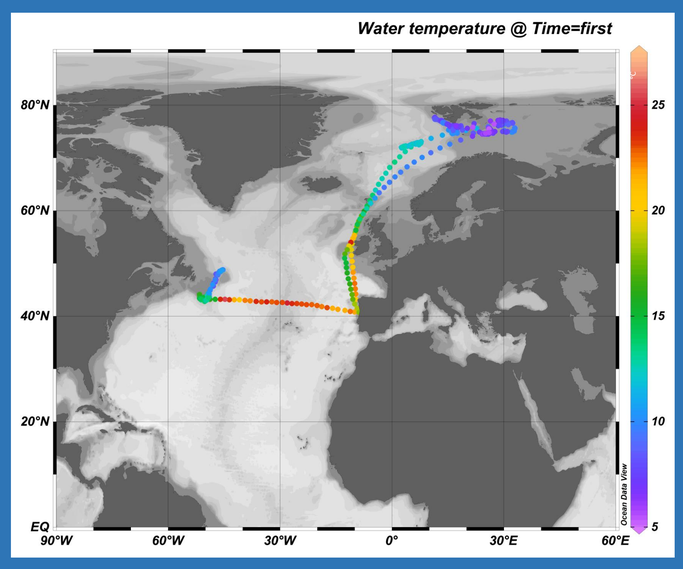


Figure 3. (a) Sea Surface Temperature (°C); (b) Dissolved oxygen (mgL^{-1}).

AUTOMATIC WEATHER STATION PROGRAMME

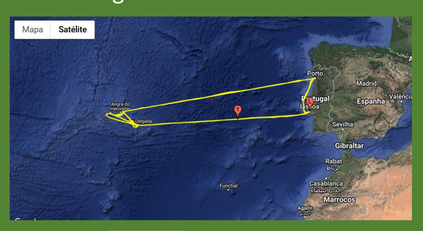
IPMA is recruiting ships to the Voluntary Observing Ship programme under the Surface Marine Programme of the EUMETNET (E-SURFMAR). These ships are equipped with the European Common Automatic Weather Station (EUCAWS), specifically designed for this purpose (Fig. 4). Presently several cargo ships and IPMA's research vessel (Fig. 5) are equipped with these EUCAWS:

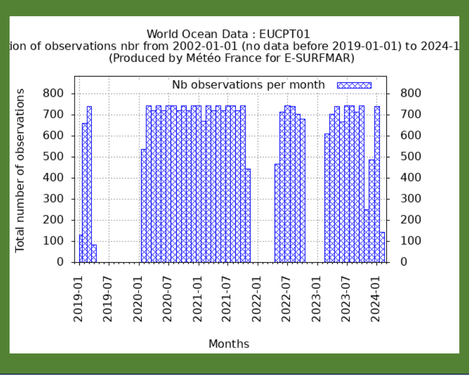
- MV Monte Brasil (Transinsular), - IMO number 9083055. Operational since 2019;
- MV Lagoa (Transinsular) - IMO number 9150470. Operational since 2023;
- MV Monte da Guia, Commercial Vessel (Transinsular) - IMO number 9123788. Under installation to be operational during March 2024;
- RV Mário Ruivo (IPMA) - IMO number 8402010. Under installation to be operational during March 2024.

Figure. 4. European Common Automatic Weather Station (EUCAWS).

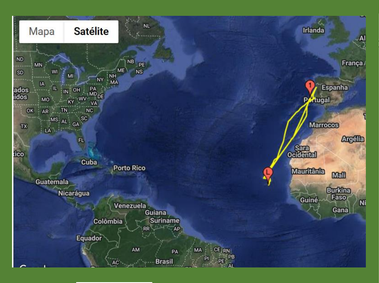
Figure 5. VOS vessels

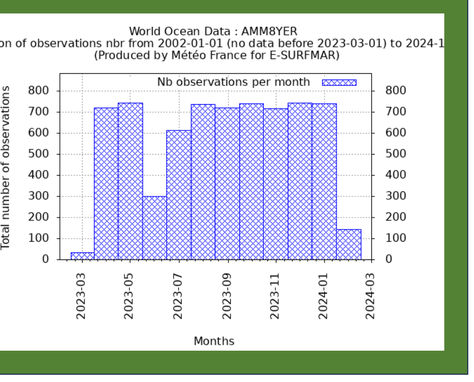
Ship: MV Monte Brasil
Route: Portugal Mainland – Azores Islands





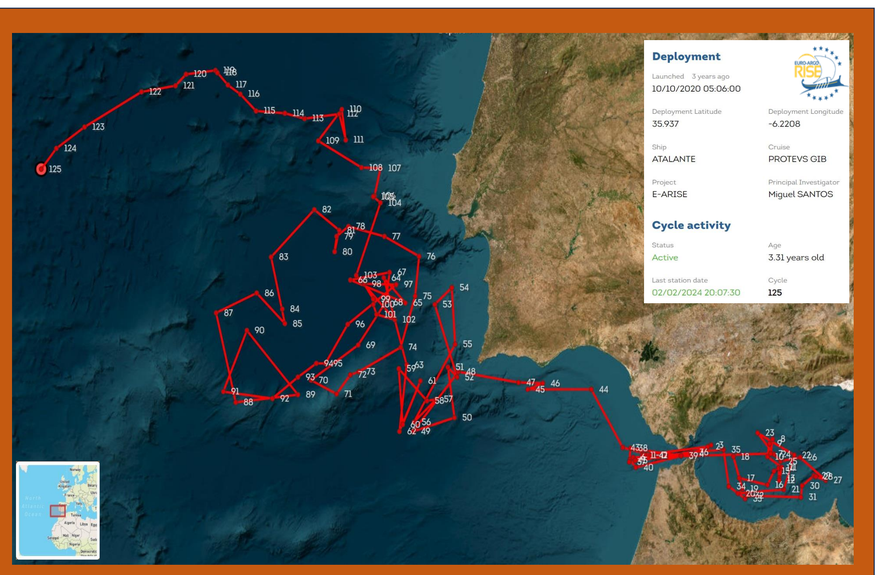
Ship: MV Lagoa; Route: Portugal – Cape Vert Islands

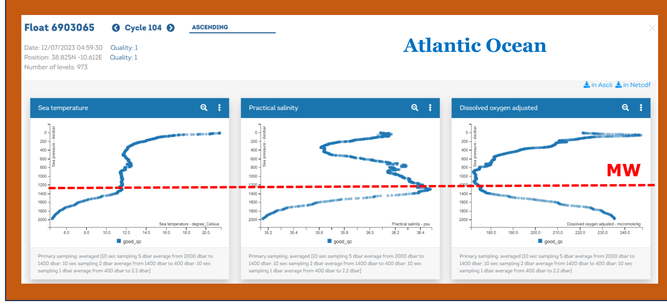


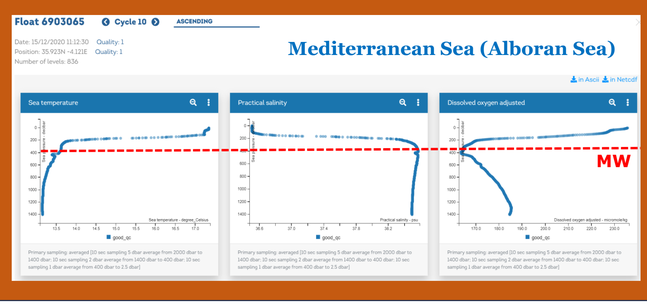


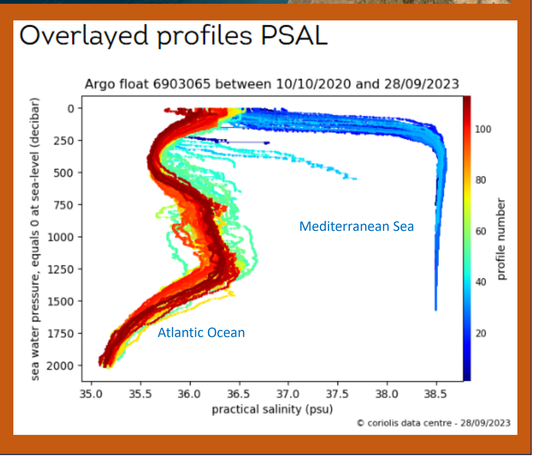
ARGO PROGRAMME

The Argo Programme is an important component of the Global Ocean Observing System (GOOS). The core programme is based in drifting floats that make a 2000m profile of temperature and salinity, every 10 days. The ambition is to populate the global ocean with a spatially complete array of floats at a 3-degree spacing global grid. The Mediterranean Outflow Water (MOW) spreads in the north-eastern part of the Gulf of Cadiz (GoC) as a bottom-gravity current but at the western part of the gulf the flow stabilizes and continues flowing against the slope between the depths of 400 to 2000 m along the Atlantic coast of the Iberian Peninsula and reaching latitudes of up to 55° N. The MW is characterized by temperature and salinity maxima at the depths of the main cores (400 m, 800 m and 1200 m), low-nutrient and oxygen contents, and relatively high abundance of particles. IPMA is deeply involved in the development of the national Argo Programme – the Argo.PT.









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