



REMObs: Advancing Ocean Observing along the Brazilian Coast



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Projeto REMObs



GENERAL OBJECTIVE

Develop a real-time monitoring system of metocean conditions along the Brazilian Coast, meeting the demands of the Petroleum Industry, National Defense, Navigation Safety and Scientific Development.



Rede de Modelagem e Observação Oceanográfica Since 2006



BMO-BR

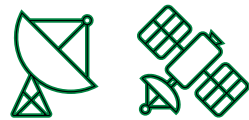
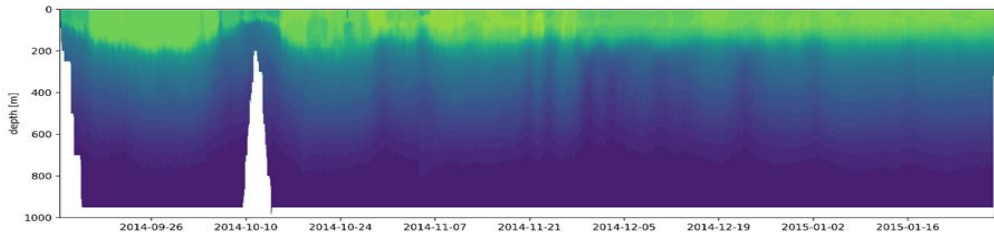
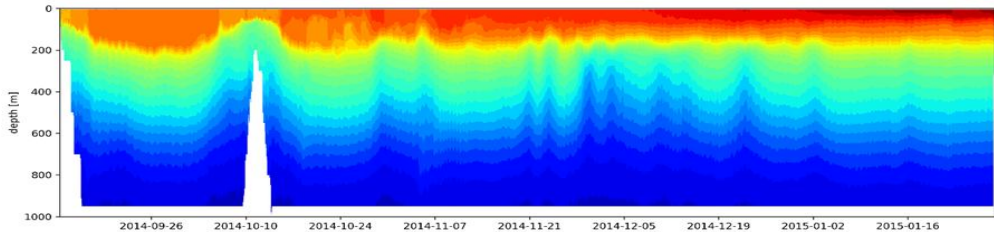


Meteorological
Wind, Temperature, Pressure, Humidity, Rainfall



Oceanographic
Waves (Hs, Tp, Dir), Current Profiles, Temperature

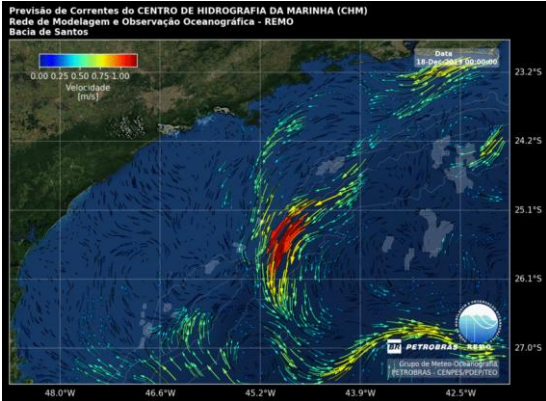
GLIDER



Transmission



Ocean Models



12/Sep/2014 Deployment of the first glider Petrobras

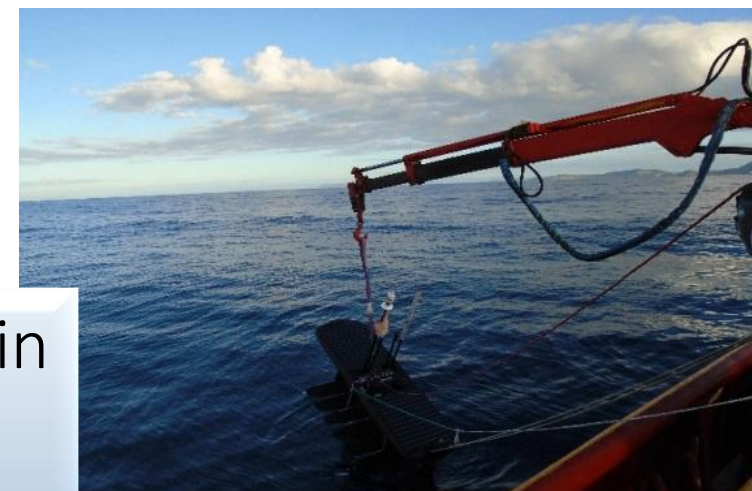
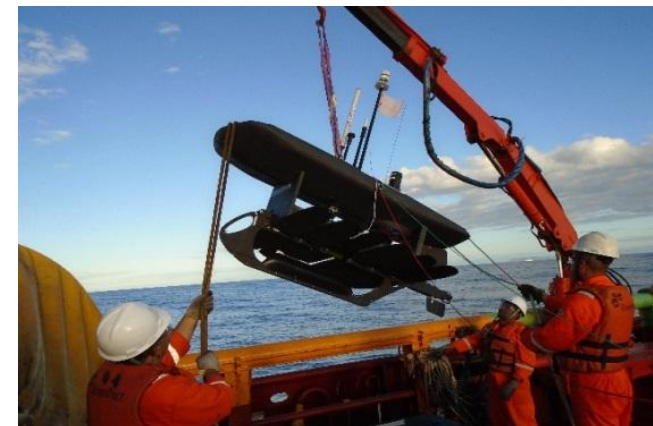
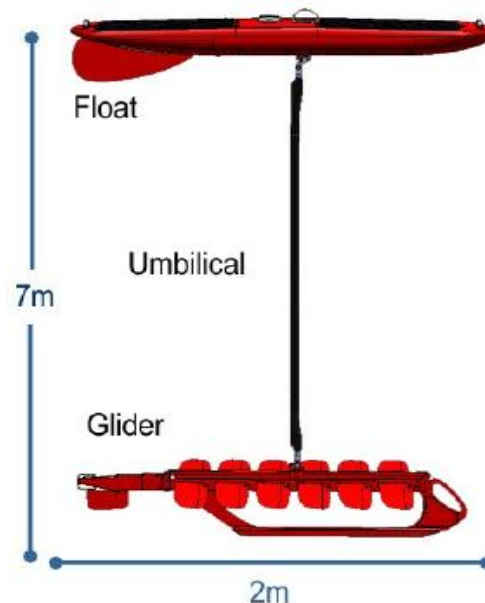


They sailed 4,976 km
in 313 days and
completed 1,954
dives.

17/Nov/2014 Deployment of the first Wave Glider Petrobras (Pioneer in Brazil)

Wave Glider is a USV (Unmanned Surface Vehicles) with the following characteristics:

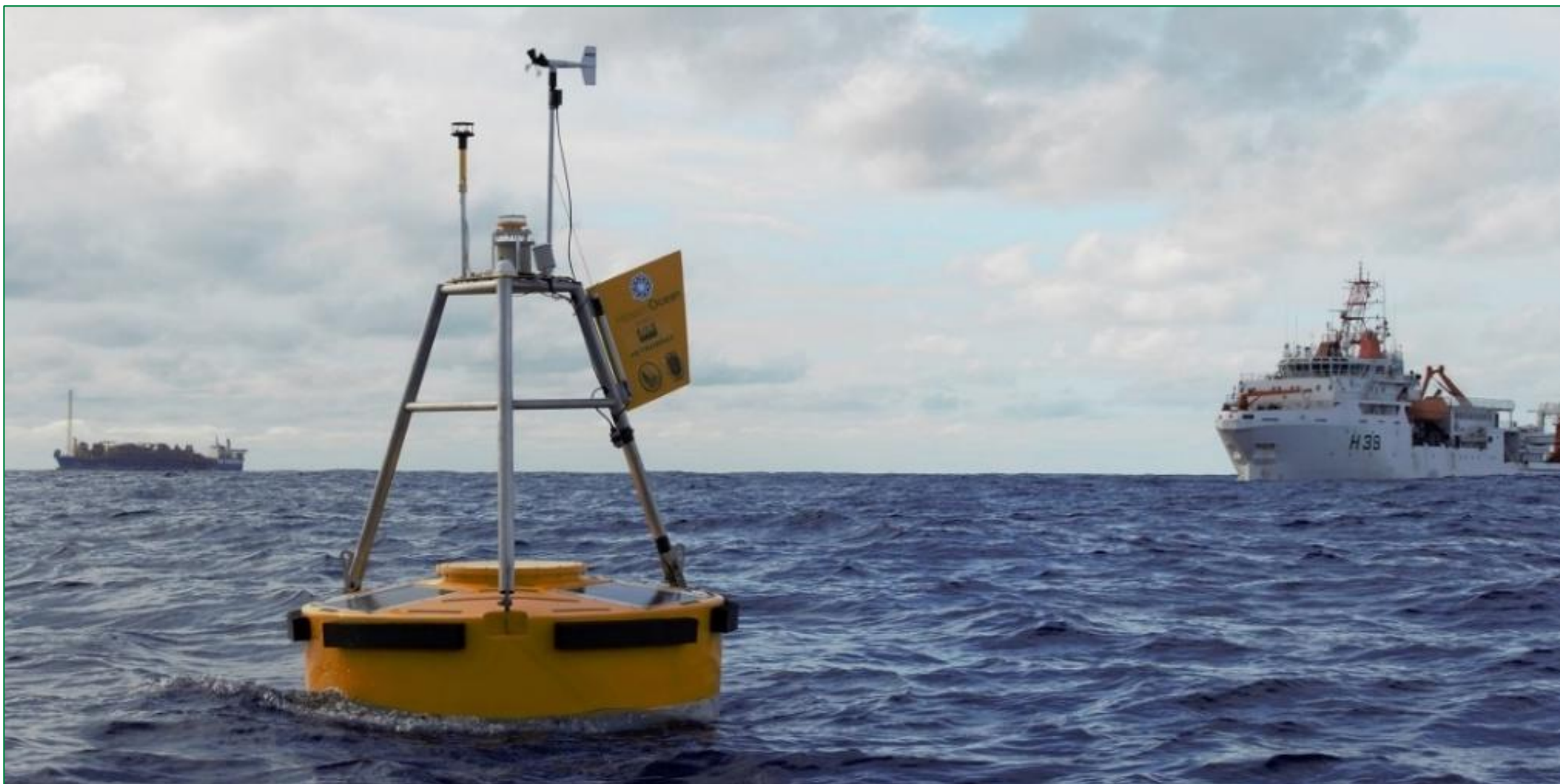
- Wave energy propulsion
- Two components: surface and subsea
- Long endurance (months)
- Maximum speed: 2 m/s
- Full time telemetry



They sailed 14,000 km in 448 days, including 25 days on a PAM mission.

2020

Marinha do Brasil and Petrobras deployed the first metocean buoy at the **Santos Basin Pre-Salt** (2200 m depth)



Glider & SailBuoy: Embedded Sensors



CTD RBR

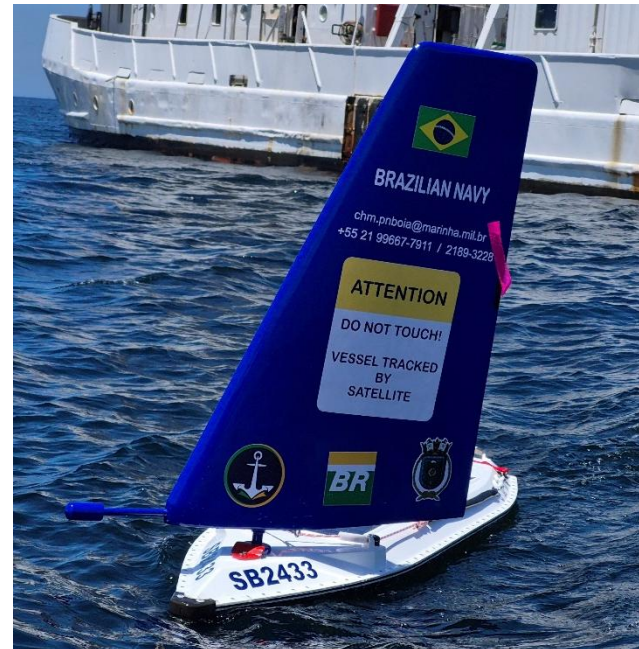
Conductivity, Temperature,
Pressure

SeaOWL

Oil
Chlorophyll

Optode

Dissolved
Oxygen



FT742

Air Temperature
Wind

ADCP Nortek Signature

500 AHRS

Current Profile

Datawell MOSE

Wave (Hs, Tp)

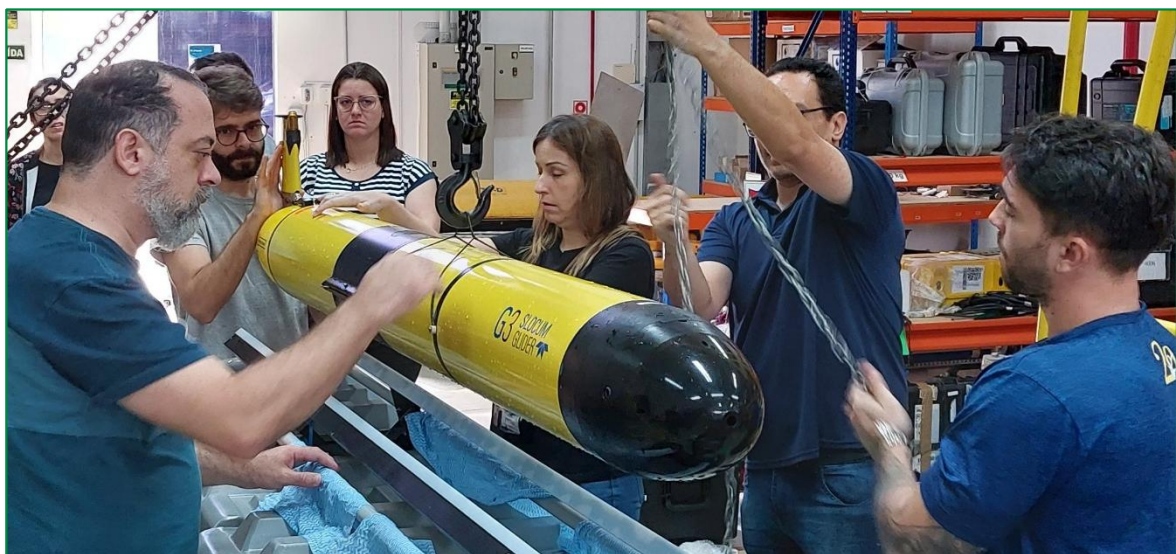
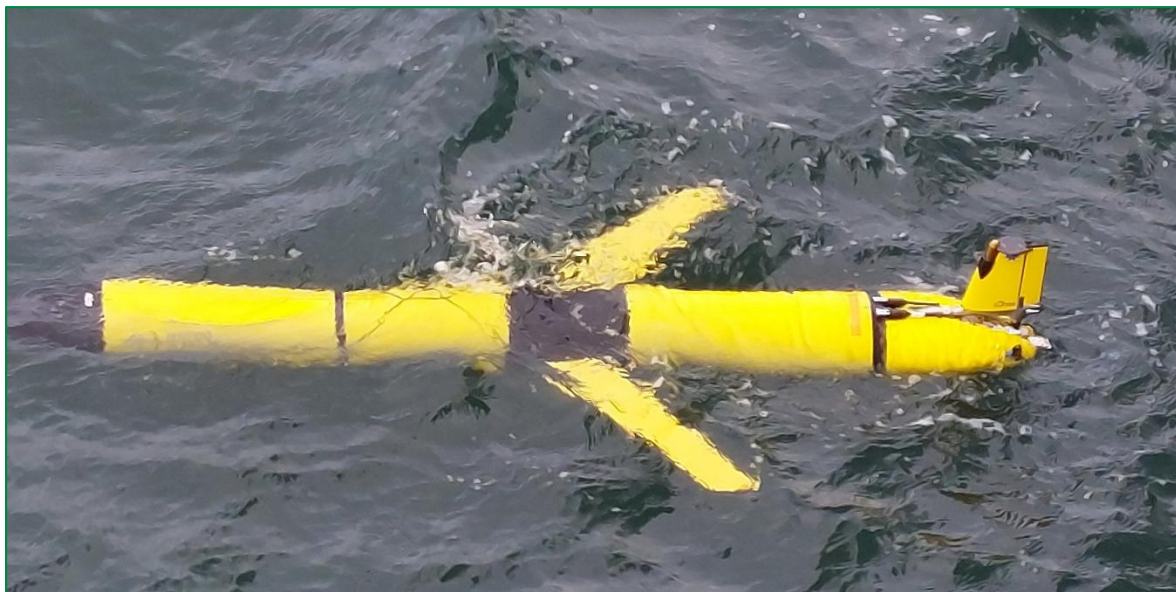
Turner C3

Oil
Turbidity
Temperature

CT NBOSI

Conductivity,
Temperature

CHM TEAM TRAINING - SLOCUM GLIDER – Jul/2023



CHM TEAM TRAINING - SAILBUOY – Feb/2025



REMObs PROJECT EXTENSION

Renewal of the Strategic Partnership between Petrobras and Brazilian Navy



Signing Cerimony on February 11, 2025, at DHN.



EXPECTED RESULTS

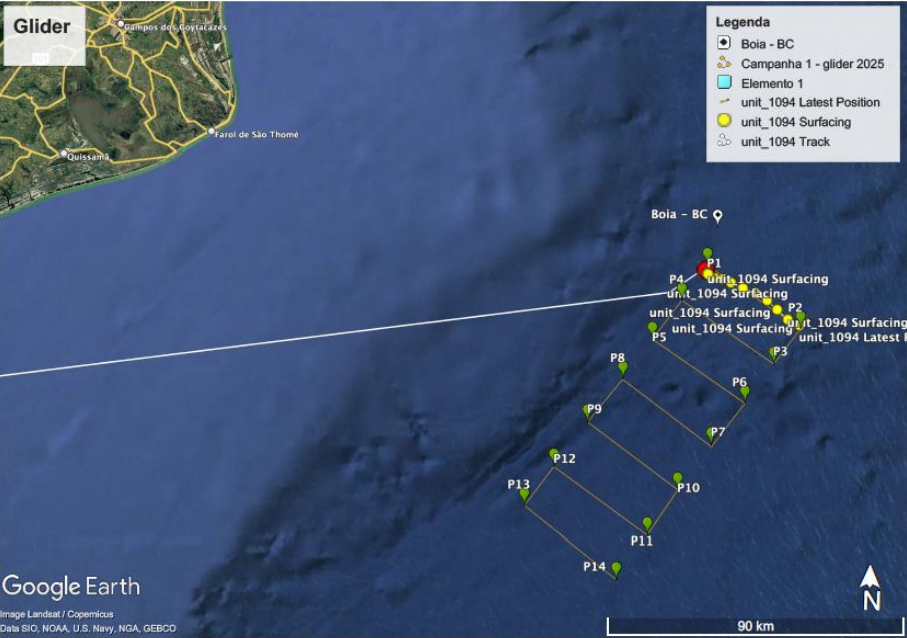
Data Collection Network

- 11** metocean buoys (200-2,500 m)
- 15** spotter buoys (10-100 m)
- 5** gliders
- 4** sailbuoys
- 3** tide gauge stations on the Equatorial Margin

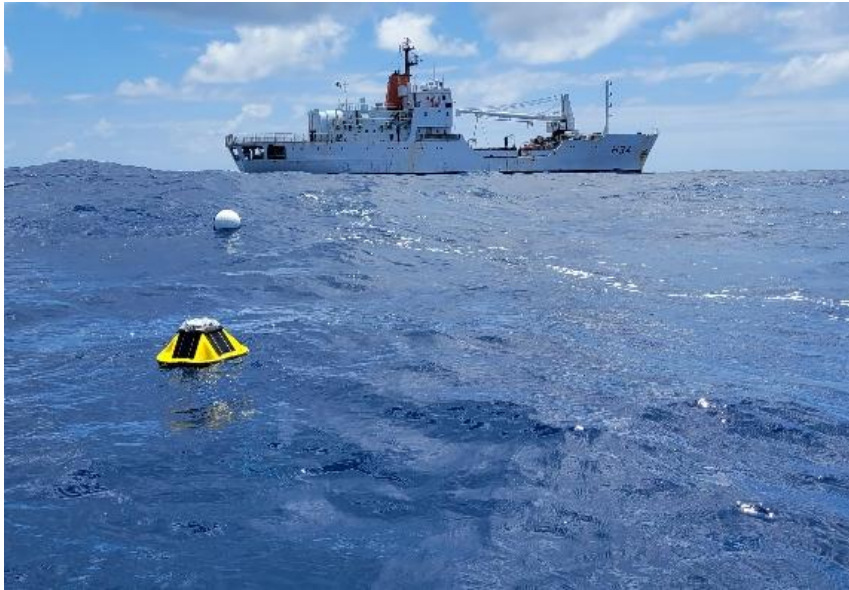
2025 Agenda

- Apr** East Coast Expedition – Spotter in Abrolhos
- May** Santos and Campos Basin Expedition
 - 1 buoy in SB; 1 buoy in CB; 1 SailBuoy in SB/CB
- Aug** 1 Glider in Espírito Santo Basin
Tide gauge on Eq.M. and XBT Line
- Sep** North Coast Expedition
 - 1 metocean buoy,
 - 1 SailBuoy; and
 - 1 Glider

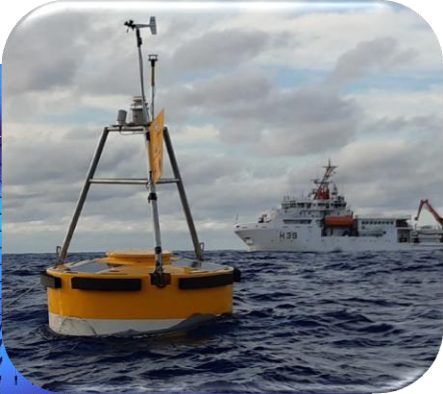
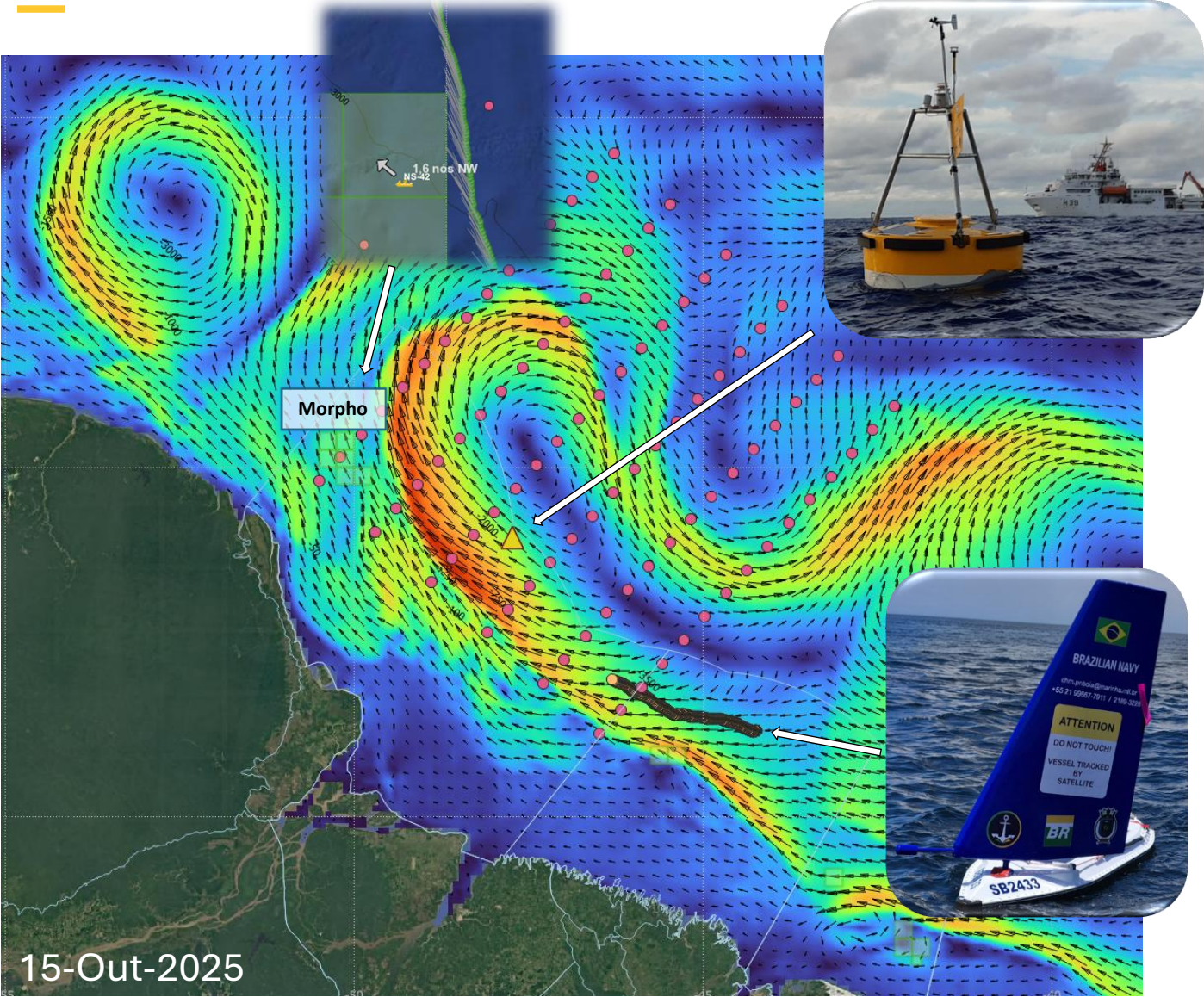
CAMPOS BASIN EXPEDITION – Jul/2025



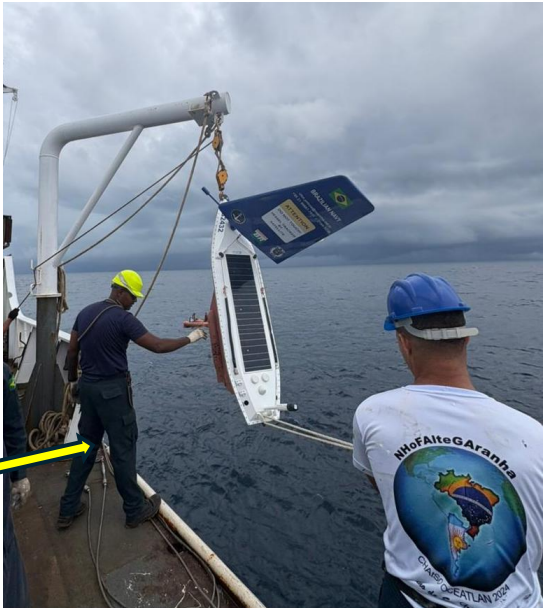
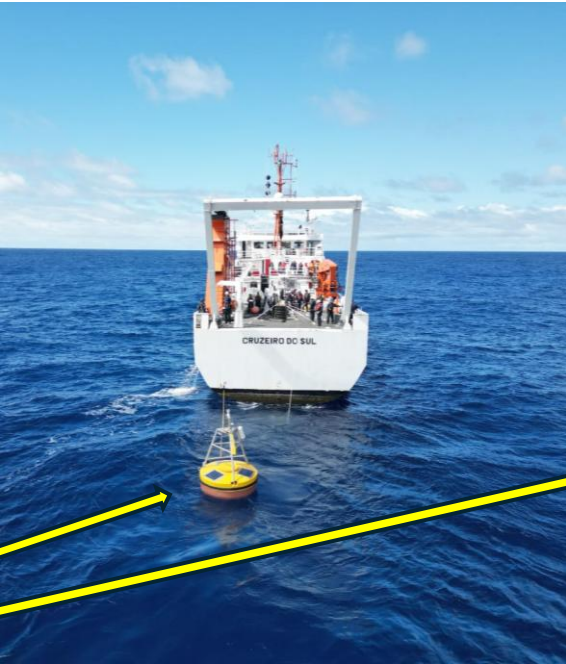
ASPSP EXPEDITION, Aug/2025



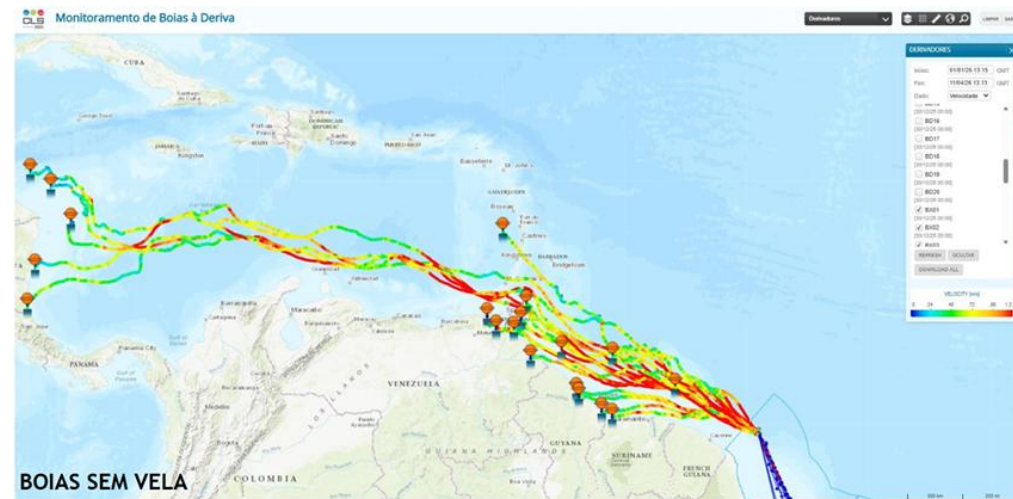
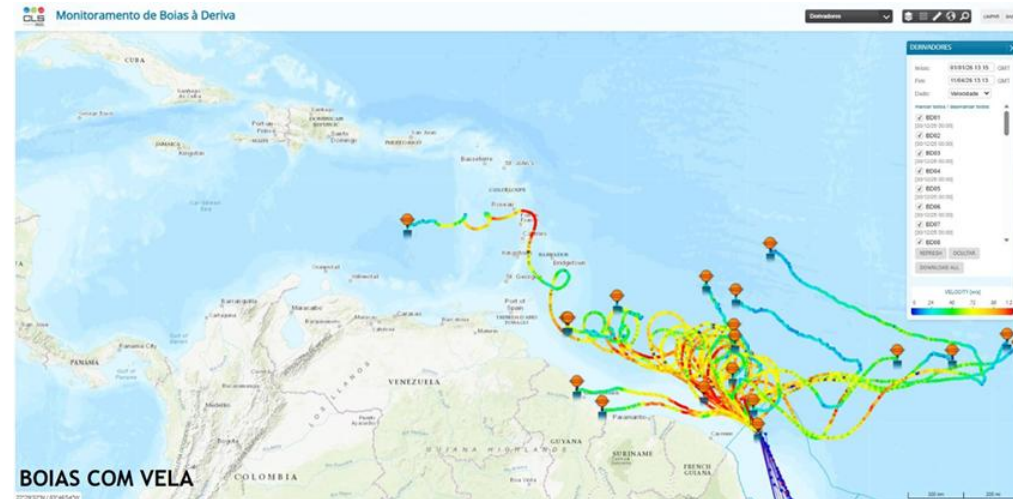
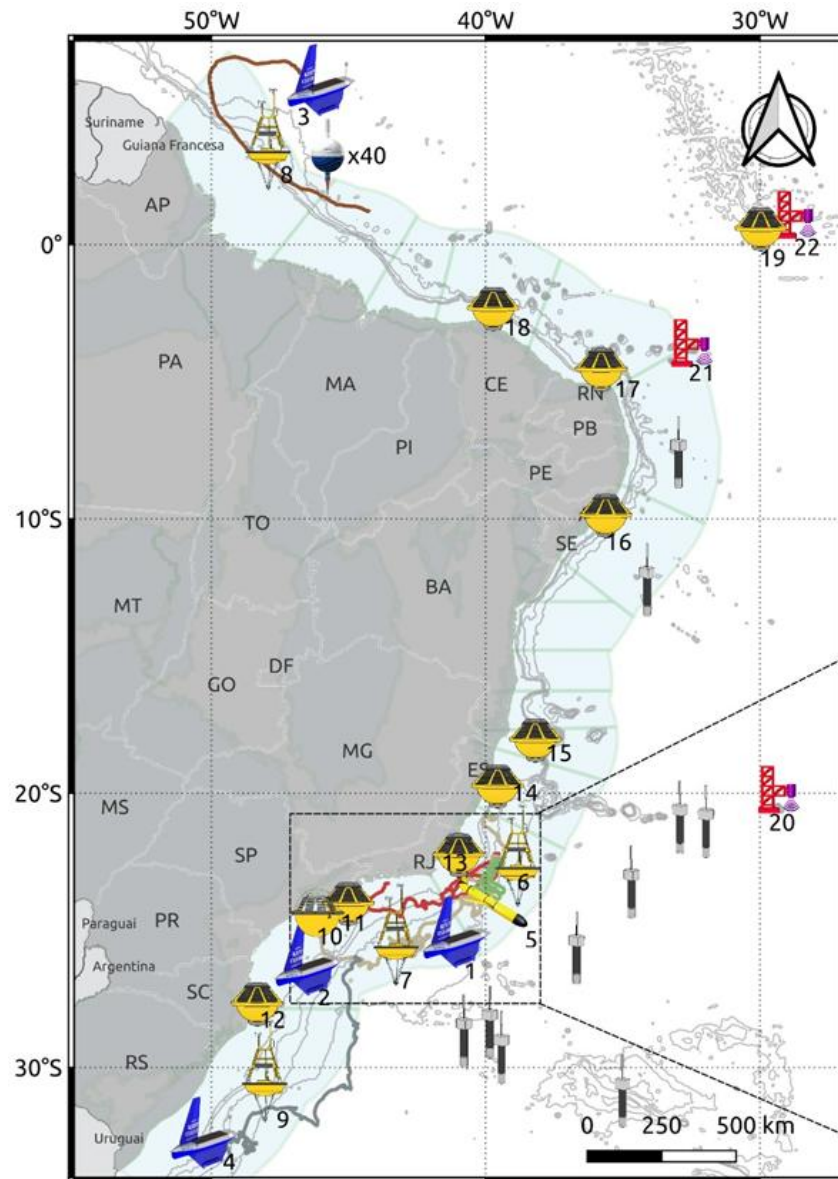
NORTH COAST EXPEDITION I - Oct/2025



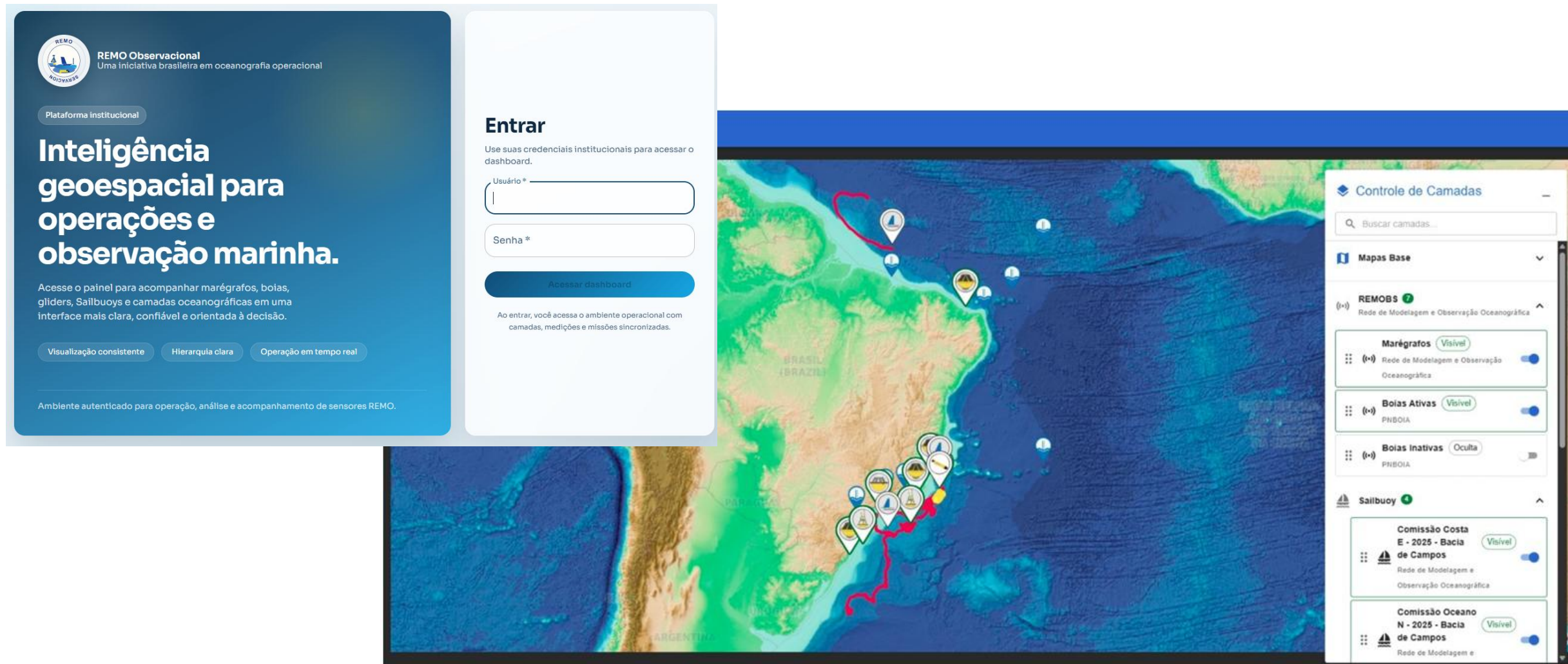
PELOTAS BASIN - Feb/2026



COASTAL BUOYS, SVP DRIFTERS and ARGO FLOATS



WEB PAGE – Coming soon...



An aerial photograph of the CENPES (Centro de Pesquisas de Engenharia de Petróleo) facility. The image shows several large, modern buildings with curved, metallic roofs. A prominent feature is a large, circular, white structure with a curved roof. The facility is surrounded by parking lots filled with cars and some greenery. In the foreground, there is a large, circular, dark-colored structure with a central tower. The background shows a body of water and some other industrial buildings.

CENPES

***OBRIGADO! MERCI! GRACIAS!
THANK YOU!***

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