SOCIB Balearic Islands Coastal Observing and Forecasting System

Ocean gliders a key element to understand physical and biochemical processes & long- term variability in the Mediterranean

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01. Introduction

SOCIB's goal is to bridge the gap between ocean observing technology and the scientific exploration of local and regional marine ecosystems. SOCIB has integrated observations from buoys, satellites, ships, autonomous underwater vehicles, HF radar, and ARGO profilers to a unique platform that can be used as a super site to monitor our ocean and coasts, focusing on the meso/submesoscale variability and associate basin-scale and/or local multidisciplinary impacts.

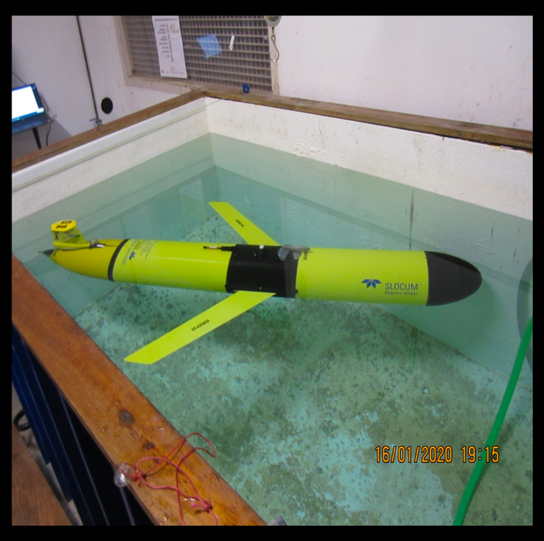
02. Approach

To achieve this mission, we have developed a 'smart ocean network' of different platforms and sensors to monitor the Western Mediterranean Sea in quasi- real time.

Gliders are an important element within the smart ocean network and integrated system that provide high-resolution in-situ observations to support ocean modelling and operational oceanography in the international framework.

03. SOCIB Glider operations 2011-2021

- From 2011-2021 we have obtained more than 108.174 profiles
- More than 2942 days in the water
- Cover more than 32.735 nm (~53.546 km)
- 120 Mission in the Western Mediterranean Sea

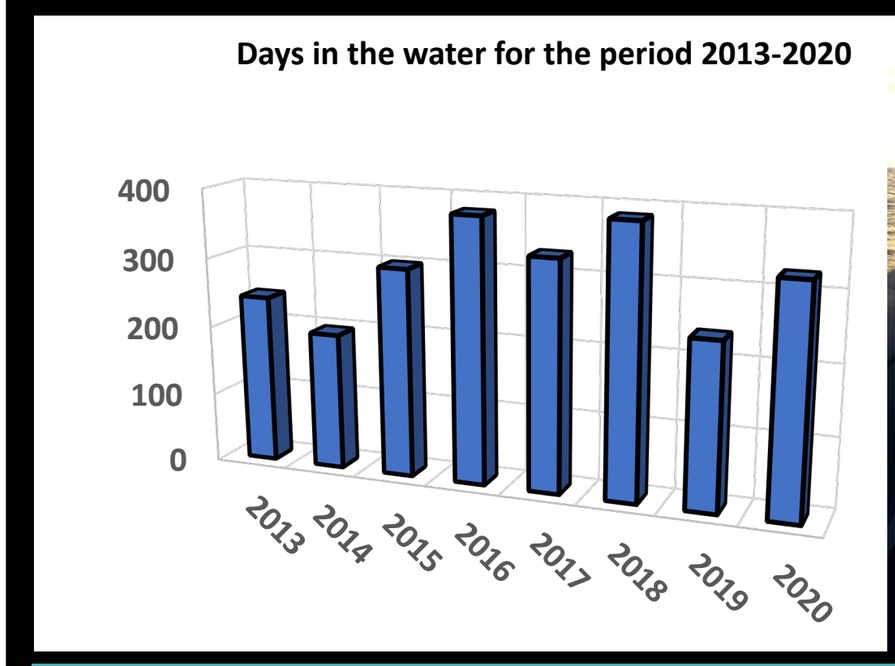


04. Results

The glider endurance Ibiza line has been part of the smart ocean network since 2011.

Choke points in the ocean, like the Ibiza Channel, have a significant role in the water mass transport and impact the general circulation of the region and the ecosystem variability.

The Ibiza line aims to identify the Balearic basin's water mass pathways and understand their biogeochemical impact.



05. Highlights 2017-2021

Papers

- 7 papers published / 2 papers submitted

Projects

- 1 endurance and 2 quasi-endurance programs
- 2 European (Jerico S3 & EuroSea)
- 1 international (Calypso)
- Several national pre-SWOT, ALBOREX,IRENE etc

Glider Operations

- 319 glider days/year in average
- 3.503 nm/year in average
- 12.355 profiles/year
- 6 Slocum (2 G2 & 4 G3) and 2 Seagliders (2 KA)
- New biogeochemical Sensors (PAR,CDOM & bbp_{700})

Science-Society engagement

- Education programs in middle & high schools
- International Glider trainings
- Observations are available to European data streams
- Contribute in the data assimilation of the WMOP

Take home message: By keeping SOCIB gliders out there for a period of time, we will be able to transform our understanding of the Mediterranean Sea and improve how we manage our environment and serve our society.