

Infrastructure (short name)	CSIC-IMEDEA Glider facility	
Installation (short name)	CSIC-IMEDEA Glider (CSIC Glider)	
Location	Western Mediterranean	
Legal name of organization	Consejo Superior de Investigaciones Cientificas CSIC-IMEDEA	
Location of organization	Esporles, Spain	
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Web site address	http://imedea.uib-csic.es/tmoos/gliders/	

Description
<p>CSIC-IMEDEA has been operating SLOCUM Webb Research gliders since 2005 and at present, 2 Deep (1.000 m) gliders and 1 Coastal glider (200m) exist (http://www.imedea.uib-csic.es/tmoos/gliders). New facilities have been also established (electronics, ballasting and AUV's/Gliders laboratories, and 1000 depth pressure chamber).</p> <p>Gliders are underwater autonomous vehicles designed to observe vast areas of the interior ocean (Stommel, 1989). They make use of their hydrodynamic shape and small fins to induce horizontal motions, while controlling their buoyancy. Buoyancy control also allows vertical motions in the water column. The nominal horizontal speed is about 1 km/h. Coastal versions of gliders are limited to operate between 10 and 200 m depth. The long autonomy period at sea is the main advantage of this platform.</p> <p>Gliders allow autonomous and sustained collection of CTD data and biogeochemical measurements (fluorescence, oxygen, etc) at high spatial resolutions (1km) and at low costs compared to conventional methods. Novel studies carried out in the Mediterranean Sea have confirmed the feasibility of using coastal and deep gliders to monitor the variability of the coastal ocean (Alvarez et al., 2007; Ruiz et al., 2009a; Ruiz et al., 2009b). Gliders have proved to be highly robust platforms to monitor the ocean even under adverse meteorological conditions and/or in really challenging oceanic areas such as the Alborán Sea (Ruiz et al., 2009c).</p> <p>CSIC-IMEDEA glider team has carried out about 22 gliders missions in the western Mediterranean Sea obtaining, so far, about 17,000 CTD casts plus oxygen, chlorophyll and turbidity.</p> <p>References</p> <p>Alvarez, A., B. Garau, A. Caili, 2007. Combining networks of drifting profiling floats and gliders for adaptive sampling of the Ocean, IEEE International Conference on Robotics and Automation Roma, Italy, 10-14.</p> <p>Ruiz, S., A. Pascual, B. Garau, I. Pujol, J. Tintoré, 2009a. Vertical motion in the upper ocean from glider and altimetry data. <i>Geophysical Research Letters</i>, L14607, doi:10.1029/2009GL03856.</p> <p>Ruiz, S., A. Pascual, B. Garau, Y. Faugere, A. Alvarez, J. Tintoré, 2009b. Mesoscale dynamics of the Balearic front integrating glider, ship and satellite data. <i>Journal of Marine Systems</i>, 78, S3-</p>

S16, doi: 10.1016/j.jmarsys.2009.01.007.

Ruiz, S., B. Garau, M. Martinez-Ledesma, 2009c. Monitoring the Eastern Alboran sea using high resolution glider data, Sea Technology, March issue, 29-32.

Stommel, H., 1989. The SLOCUM mission. Oceanography 22–24 April.

Service offered

CSIC-IMEDEA can provide access to the IMEDEA gliders facilities, including the use of one glider unit operating in the range 0-200 m or 0-1000 m, depending on the user's needs and after a carefully peer-review of proposed missions (feasibility, mission definition, benefits, etc...).

Additionally real-time data from all IMEDEA glider missions carried out under the project will be available in real-time.

The proposed mission can consist of:

- Preparation of 1 glider and its sensors for a specific task and for the area to operate.
- Logistics from the operator facility to the operation site and return
- Launch and recovery of the gliders
- Remote control and programming of the gliders by the operational team
- Data recovery and delivery to the user.

There is a dedicated team composed of technician who prepare and operate the gliders, program and supervise the cruise, format and distribute the data at the end of the cruise.

Instruments/Sensors

Instrument	Measured Parameter(s)	Depth range	Sampling frequency	Frequency of data recovery
1 Slocum Glider	conductivity, temperature, pressure, oxygen, fluorescence, turbidity	0-200 m or 0-1000 m	0.5 Hz	Every 6 hours

Special owner rules

Carefully peer-review of proposed missions – study area, feasibility, mission definition, benefits.