New developments on Biscay-AGL Observatory. From derived products to sensor networks.

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Introduction

The Santander standard section has been running from early 90’s as a series of monthly hydrographical series under the broader IEO program RADALES. This program was devised to provide hydrographical and biogeochemical series in marine waters around Spain. The sampling scheme was designed to perform the sampling typically in 1-days journeys assisted by small ships, therefore the main focus was in the continental shelf. However, due to the proximity of the shelf-break in front of the city of Santander (EI Bay of Biscay) it was possible to gather a monthly series of intermediate waters since early 90’s in the outer stations. The sampling was limited to 1000 m until late 2007, then it was extended to 1500 m and since 2014, after the construction of a larger regional ship, RV Ramón Margalef, that is in charge of the sampling, it covers the full-depth 2400 m.

The Augusto González de Linares ocean-o-meteorological buoy (named after the Santander Oceanographic Center founder in 1846) was set close to Station 7, the first deep water station of the Santander Standard Section. The section covered the full-depth 2400 m.

Acknowledgements

We want to thank the staff of the Santander, Gijón, A Coruña, IE O Centers and the crew of the IEO Oceanographic vessel Ramón Margalef. Regarding points of data observed by the AGL buoy, we want to thank the VACLAN/COVACLAN Projects of the Spanish Funding Agency. We want to thank the Point Open Ocean Observatories (IEOOS) which provides quality controlled data and information about Spanish surrounding waters and comprehends several subsystems.

Derived Products

Products are elaborated from data both of the AGL buoy and the monthly cruise. Below there are some samples

Location

Biscay-AGL Buoy Data Series

The following figures show some samples of data series obtained from the AGL Buoy [3,4].

Santander Standar Section. Station 6

Station 6 is located at 43° 42.5’ N, 003° 47’ W at a depth of 850m, very close to the shelf break and have been monthly sampled since May 1992. It can be considered representative of continental slope conditions in the southern Bay of Biscay.

Potential temperature-salinity diagram from 1991 to 2015

Salinity profile for station 6 from 1991 to 2015

Temperature profile for station 6 from 1991 to 2015

Chlorophyll-A series since 2007. Green line series shows AGL buoy data and blue dots shows data from monthly cruises.

Significant wave height series from mooring to summer 2014

Highest measured wave by AGL buoy was on January 29th, 2012 135.26m height.

Derived from satellite data and buoy based data and blue dotted line shows data from monthly cruise.

Significant wave height at the location of AGL Buoy. dots from reception to public display

Derived from satellite data and buoy based data blue line and blue dots shows data from monthly cruise.

Besides the samples shown here there are also time series for air temperature, humidity, wind speed and direction, current speed and direction up to 90 m deep, wave, peak period, chlorophyll and oxygen

References


Acknowledgements

The AGL Buoy and the Santander Standard Section from part of the IEOOS, and are funded by the Spanish Institute of Oceanography and the EU Infrastructure Project FixO3 (Fixed Point Open Ocean Observatories) and the VACLAN/COVACLAN Projects of the Spanish Funding Agency. We want to thank the staff of the Santander, Gijón, A Coruña, IE O Centers and the crew of the IEO Oceanographic vessel Ramón Margalef.