BOUSSOLE Monthly Cruise Report

Cruise 70
December 15 - 18, 2007

Duty Chiefs: Vincenzo Vellucci (enzo@obs-vlfr.fr)
Vessel: R/V Téthys II
(Captain: Joël Le Guennec)

Science Personnel: François Bourrin, Grigor Obolensky, Vincenzo Vellucci.

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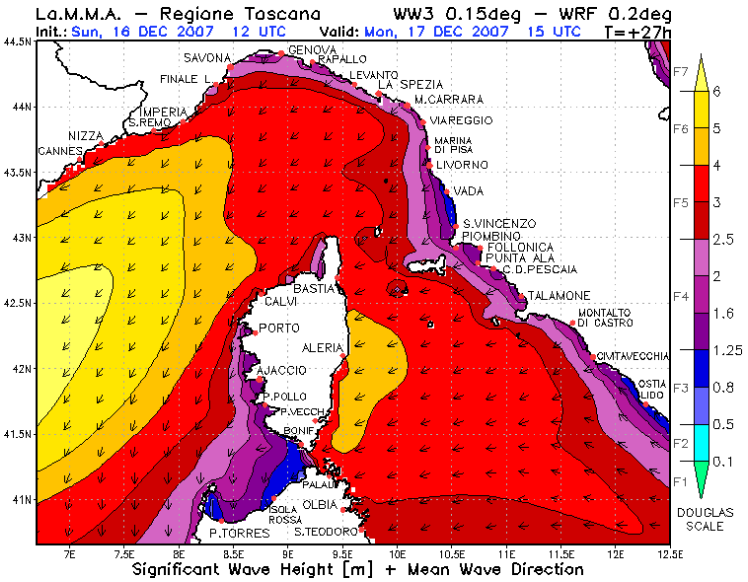

Fig 1. Map of the significant wave height in the Ligurian Sea forecasted for the 17th December 2007 at 15 UTC.

BOUSSOLE project

ESA/ESRIN contract N° 17286/03/I-OL

Deliverable from WP#400/200

December 20, 2007

Contents

Cruise Objectives

Routine operations

Multiple SPMR profiles are to occur within 1 hour of satellite overhead passes of MERIS, SeaWiFS or MODIS around solar noon, under optimal conditions: clear blue skies and flat, calm sea surface. If the sky is clear and sea conditions are reasonably calm (no whitecaps or large swell), hand held CIMEL sun photometer measurements are to be performed consecutively where possible with SPMR profiles. If sea conditions are poor but sky is good, hand held CIMEL sun photometer measurements can be made at intervals throughout the day to measure atmospheric optical thickness. A floating platform is to be used to support the SPMR Eu sensor approximately 20cm below the surface for up to 3 minutes of stable light field before a release mechanism triggers the release of the profiler to start a descent as normal. Multiple descents ideally will be started in this way and the data will be used to assess near-surface Eu extrapolation model calculations. CTD deployments are required at the start and end of the SPMR profiling day and around noon in the longer summer days or when there is a high possibility of a satellite matchup. In addition to the depth profile from the CTD, CDOM fluorometer, Chl fluorometer and AC9, seawater samples are to be collected, filtered and stored in N_2 for HPLC pigment and particule absorption spectrophotometric filter analysis in the lab. A gimbled PAR sensor positioned on the foredeck and operated from the CTD computer serves as a light field stability indicator during SPMR profiling.

For one day of each cruise, at the end of the optics measurements on site, there will be one CTD transect between the Boussole site and the Port of Nice. This transect consists of six fixed locations on-route from Boussole. The time of day of this transect should be similar for each cruise, if possible to minimise influence of diurnal variability.

For one day of each cruise, three divers will check the underwater state of the buoy structure and instrumentation, take some pictures for archiving, clean the sensor optical surface, and then take again some pictures after cleaning.

For one day of each cruise, 250 ml of sea water will be sampled at 200, 150, 80, 70, 6, 50, 40, 30, 20, 10 and 5 meters depth. For each sample, 125 ml will be filtered through a 0.2 µm GF/F filter and both total and filtered water samples will be stored. They are subsequently analysed in the laboratory for CDOM absorption determination (UltraPath high-performance spectrophotometer).

Additional planned operations

The exchange of the two OCPs (acquisition modules of the buoy, at 4 & 9 m, to which radiometers and transmissometers are connected), and the replacement of one solar panel (lost about one month ago) was planned for this cruise. However the weather forecast predicted very bad weather conditions and no diving operation could be organized. The GLIDER, deployed on December 15th, should be recovered on the last day on the route to the port of Nice.

Cruise Summary

The weather conditions were bad for the four days scheduled for this cruise and no sampling was possible. A perturbation with wind from NW up to 40 knots and H1/3 up to 4.0 m persisted on the Ligurian Sea. The first two days the ship stayed in the port of Nice. The third day was used to attempt to communicate with the GLIDER and to recover it. The last day was used to attempt a communication with the buoy, unsuccessfully however.

Saturday 15 December 2007

Sea conditions were too rough to go on site for sampling (H1/3 of 3.0 m at 12:00).

Sunday 16 December 2007

Sea conditions were too rough to go on site for sampling (H1/3 of 2.3 m at 12:00).

Monday 17 November 2007

Sea conditions were too rough to go on site for sampling (H1/3 of 3.0 m at 12:00).

The GLIDER showed problems with satellite communication on the previous day, so François Bourrin and Grigor Obolensky went at sea to attempt a radio communication with it. The communication was difficult and the recovering of the GLIDER was attempted unsuccessfully till sunset. No more communication was received since then, and the instrument was considered as lost.

Tuesday 18 October 2007

Sea conditions were still too rough to perform any sampling. But we went on site to check the general state of the buoy and to attempt a connection that was unsuccessful.

Cruise Report

15 December 2007 (UTC)

Bad weather prevented departure from the port of Nice.

16 December 2007

Bad weather prevented departure from the port of Nice.

17 December 2007

1200 Departure from the port of Nice to the last position sent by the GLIDER (43°22.987'N 007°28.258'E).
1400 Arrival at the position and localization of the GLIDER.
1445 Unsuccessful attempt to recover the GLIDER.
1650 Departure from the site to the port of Nice.
1900 Arrival to the port of Nice.

18 December 2007

1045 Departure from the port of Nice.
1425 Arrival at the BOUSSOLE site.
1515 Connection attempt to the buoy: unsuccessful!
1525 Departure from the BOUSSOLE site.
1830 Arrival to the port of Nice.