BOUSSOLE Monthly Cruise Report

Cruise 48
Decmber 13 – 16, 2005

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Vessel: R/V Téthys II
(Captain: Dany Deneuve)

Science Personnel: Guislain Bécu, Dominique Tailliez and 3 divers (Laurent Giletta, David Luquet and Jean de Vaugelas)

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Fig 1. Lamprey stuck to the buoy OCP-4.

BOUSSOLE project

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Deliverable from WP#400/200

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Foreword

This report is part of the technical report series that is being established by the BOUSSOLE project.

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Contents

Cruise Objectives

Multiple SPMR profiles are to occur within 1 hour of satellite overhead passes of MERIS 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 four fixed locations on-route from Boussole and a final two station positions to be decided during the transect in order to sample on both sides of the main frontal structure between the coastal waters and Ligurian Sea. The time of day of this transect should be similar for each cruise, if possible to minimise influence of diurnal variability.

3 divers (David Luquet, Laurent Giletta and Jean de Vaugela) will be onboard on 15 December 2005 to take some pictures and clean and check the buoy structure under the sea surface.

Dry weight operations will still be carried.

Other activities will also be performed on the buoy to download the data off the buoy and verify that everything is as expected above the waterline.

Cruise Summary

Tuesday 13 December 2005

The ship loading was delayed for logistical reasons (truck availability), which was not so important as the weather forecast was not optimistic. Nevertheless the ship left port of Nice at 1130 local time to try some CIMEL atmospheric measurements, as the sky was blue. But after the second en route measurement, the Sun unfortunately disappeared behind some far clouds, whereas 3/4 of the sky remained deep blue. The ship carried on its route to the BOUSSOLE site to try a buoy connection, but unsuccessfully at 1500 local time (perhaps the ship should have turned around the buoy?). The local weather was too bad to wait till the next connection attempt (H1/3=1.5m, wind=28 knots), so that the ship left to the port of Nice, realizing radial transect station 3, 4 and 5 CTD profiles.

Wednesday 14 December 2005

Stayed at port of Nice due to bad weather conditions.

Thursday 15 December 2005

Departure from port of Nice was delayed (2 hours) for weather conditions. The ship arrived at site around midday. Another buoy connection (two, one at 1200, other at 1300) attempts were unsuccessful. Divers went at sea in the beginning of afternoon. Then, a CTD profile was realized for HPLC and Ap filtrations, Ultrapath operation as well as dry weights. Divers had to take some plankton samples with their plankton net (three 200 m profiles). Endly, 1 CIMEL measurement as well as transect stations 1 and 2 CTD profiles were realized with again three 200 m plankton net profiles, and the ship arrived at port of Nice at 2220.

Friday 16 December 2005
Stayed at port of Nice due to bad weather conditions.

Cruise Report

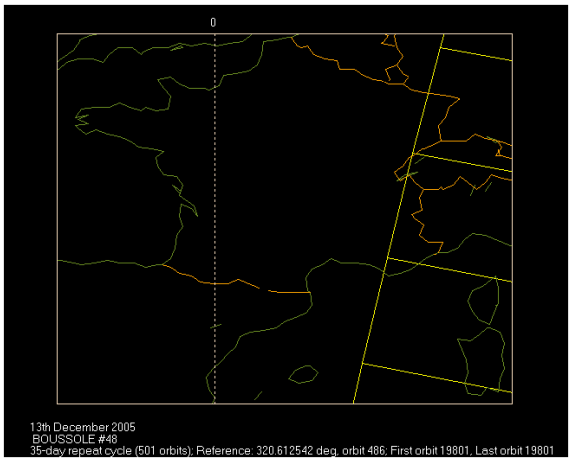
13 December 2005 (UTC)
1030 Departure from port of Nice.
1043 CIMEL 1.
1136 CIMEL 2.
1611 CTD 1 at station 3 (43°31'N 07°37'E).
1705 CTD 2 at station 4 (43°34'N 07°31'E).
1811 CTD 3 at station 5 (43°37'N 07°25'E).
1925 Arrival at port of Nice.

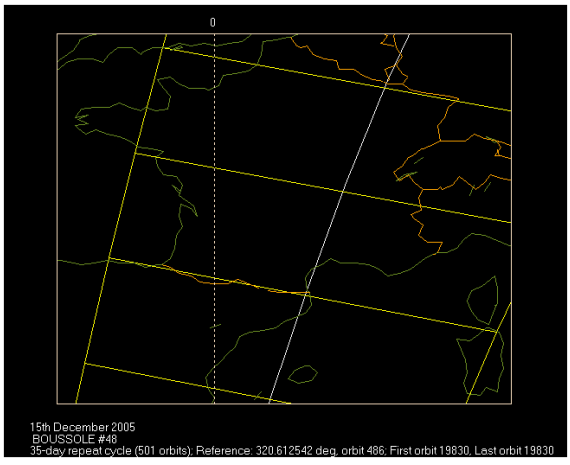
14 December 2005
Stayed in port of Nice.

15 December 2005
0730 Departure from port of Nice.
1100 Unsuccessful buoy connection attempt 1.
1200 Unsuccessful buoy connection attempt 2.
1315 Divers at sea to check, clean and take pictures of the buoy underwater structure.
1437 CTD 4 with water sampling at 200, 100, 80, 70, 60, 50, 40, 30, 20, 10 and 5 meters (HPLC, Ap, UltrPath, dry weights).
1520 Plankton net profiles 1, 2 and 3 (200 meters).
1629 CTD 5 at station 1 (43°25'N 07°48'E).
1700 Plankton net profiles 4, 5 and 6 (200 meters).
1824 CTD 6 at station 2 (43°28'N 07°42'E).
2120 Arrival at port of Nice.

16 December 2005
Stayed in port of Nice.

Calculated Swath paths for MERIS Sensor (ESOV Software)





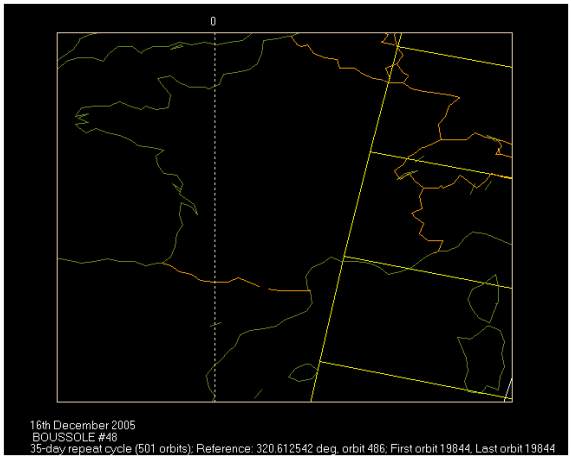


Figure 2. Calculated swath paths for MERIS (Esov software) above BOUSSOLE site for 13, 15 and 16 December 2005.

Appendix

Cruise Summary Table for Boussole 48

Date	Black names	Profile names	CTD notées /	Start Time	Duration	Depth max	Latitude (N)		longitude		Other sensors	Their cast	Start/Finish			Weather								Sea		
	(file ext: ".raw")	(file extension: ".raw")	satellite overpass	GMT (hour.min)	(min.sec)	(meter)	(Degree)	(Minute)	(Degree)	(Minute)				Sky	Clouds	Quantity (#/8)	Wind speed	Wind dir.	Atm. Pressure	humidity	Visibility	T air	T water	Sea	Swell height	Swell dir.	White horses
13/12/2005				10:43	03:00		43	39.660	7	19.720	CIMEL 1	Tau atmos.		blue	no	0			1022.6								
				11:36	03:00		43	34.606	7	29.430	CIMEL 2	Tau atmos.		part. covered	Ci	2			1021.4								
			CTDBOUS001	16:11	27:00	400	43	30.853	7	36.420				covered	heter.	4	8 kn	320	1018.7	59	very good	13.2	14.5	choppy	1,0 m		yes
			CTDBOUS002	17:05	26:00	400	43	33.930	7	30.828				covered	heter.	8	8 kn	283	1018.6	60	very good	13.4	15.2	choppy	1,0 m		yes
			CTDBOUS003	18:11	25:00	400	43	37.614	7	24.813				covered	heter.	8	4 kn	346	1018.6	58	very good	15.4	15.2	choppy	1,0 m		yes
15/12/2005				12:40	03:00		43	22.000	7	54.000	CIMEL 3	Tau atmos.		blue, with aer.	no	0			1022.6								
			CTDBOUS004	14:37	30:00	400	43	21.979	7	53.827				blue	heter.	1	5 kn	153	1015.4	60	very good	11.8	13.2	choppy	1,0 m		yes
			CTDBOUS005	16:29	26:00	400	43	24.959	7	47.877				covered	heter.	4	6 kn	224	1014.8	65	very good	11.4	13.4	calm	0,7 m		no
			CTDBOUS006	18:24	25:00	400	43	27.752	7	42.296				covered	heter.	8	12 kn	259	1015.0	70	very good	11.7	14.8	choppy	1,0 m		yes