BOUSSOLE Monthly Cruise Report

Cruise 66
July 22 - 24, 2007

Duty Chief: Guislain Bécu (guislain.becu@obs-vlfr.fr)
Vessel: R/V Téthys II
(Captain: Rémi Lafond)

Science Personnel: Guislain Bécu, Dominique Tailliez, Pierre Gernez, Atsushi Matsuoka, Antoine Poteau, Yves Lamblard, Christophe Lamoureux, Pierre Giordanengo.

Laboratoire d'Océanographique de Villefranche (LOV), 06238 Villefranche sur mer cedex, FRANCE

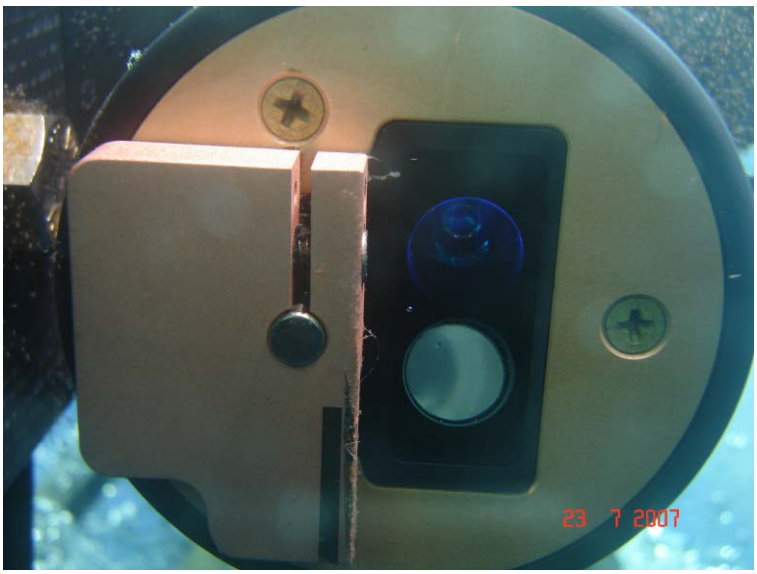


Fig 1. The ECO-FLNTUs fluorometer/turbidity-meter performing a measurement (the shutter is opened and the instrument emits a blue light).

BOUSSOLE project

ESA/ESRIN contract N° 17286/03/I-OL

Deliverable from WP#400/200

July 30, 2007

Contents

Cruise Objectives

Routine operations

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.

Additional operations

The acoustic releases batteries were tested, in order to prepare the next mooring recovering. Then, a SATROVER was cross compared with the CTD on a common cast at the point B+, at the exit of the Villefranche Bay.

Cruise Summary

Weather conditions were very poor, especially for a July month (25 knots on the first day, H1/3 up to 1.5 m). The only workable day was the second day of the cruise, where quite all the measurements were performed. The third and last day was used to test a SATROVER (from Hervé Claustre) at point B+ at the end of the Villefranche Bay, by fixing it on the rosette to cross compare its data with the CTD data.

Sunday 22 July 2007

Bad weather conditions prevented the departure from the port of Nice.

Monday 23 July 2007

This was the only workable day at the BOUSSOLE site. Operations performed at Sea this day were the diving usual tasks, 1 Secchi disk measurement, 2 acoustic releases batteries tests, 3 x 100 m plankton net profiles, 4 CIMEL measurements and 6 CTD casts (all on the transect between the BOUSSOLE site and the port of Nice).

Tuesday 24 July 2007

Bad weather prevented any measurement performing at the BOUSSOLE site. Only a cross comparison between the CTD and a SATROVER during a common cast was perform at the point B+.

Cruise Report

22 July 2007 (UTC)

Bad weather conditions prevented the departure from the port of Nice.

23 July 2007

0525 Departure from the port of Nice.
0900 Divers at Sea.
1130 Secchi disk 01.
1147 CIMEL 01, close to the buoy.
1200 Acoustic releases batteries checking.
1200 3x100m plankton net profiles.
1250 CIMEL 02, close to the buoy.
1251 SPMR profiles 01, 02 and 03.
1325 MVD optical surface and ARGOS beacon contacts cleaning.
1335 CTD deck unit troubleshooting -> found to be out of order, again.
1435 Water sampling at 5 and 10m, close to the buoy, for duplicate HPLC.
1524 CTD 01 (deck unit works again after some connection rewired), station 01 (43°25'N 07°48'E), with water sampling at 200, 150, 80, 70, 60, 50, 40, 30, 20, 10 and 5 meters for HPLC, CDOM and Ap.
1539 CIMEL 03, station 01 (43°25'N 07°48'E).
1626 CIMEL 04, station 02 (43°28'N 07°42'E).
1631 CTD 02, 400 m, station 02 (43°28'N 07°42'E).
1730 CTD 03, 400 m, station 03 (43°31'N 07°37'E).
1834 CTD 04, 400 m, station 04 (43°34'N 07°31'E).
1937 CTD 05, 400 m, station 05 (43°37'N 07°25'E).
2022 CTD 06, 400 m, station 06 (43°39'N 07°21'E).
2125 Arrival to the port of Nice.

24 July 2007

0500 Departure from the port of Nice.
0526 CTD 07 coupled with the STAROVER at the point B+.

Calculated Swath paths for the MERIS Sensor (ESOV Software)

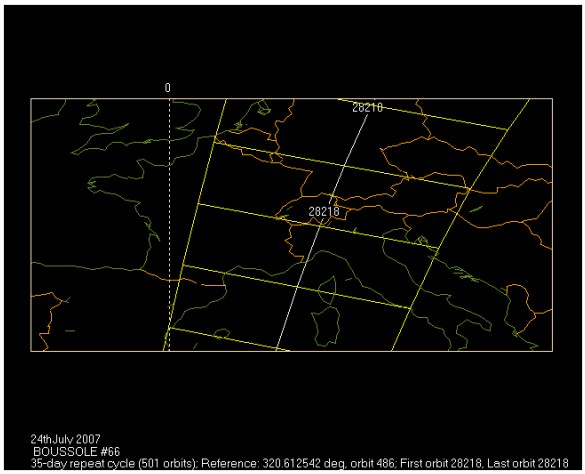
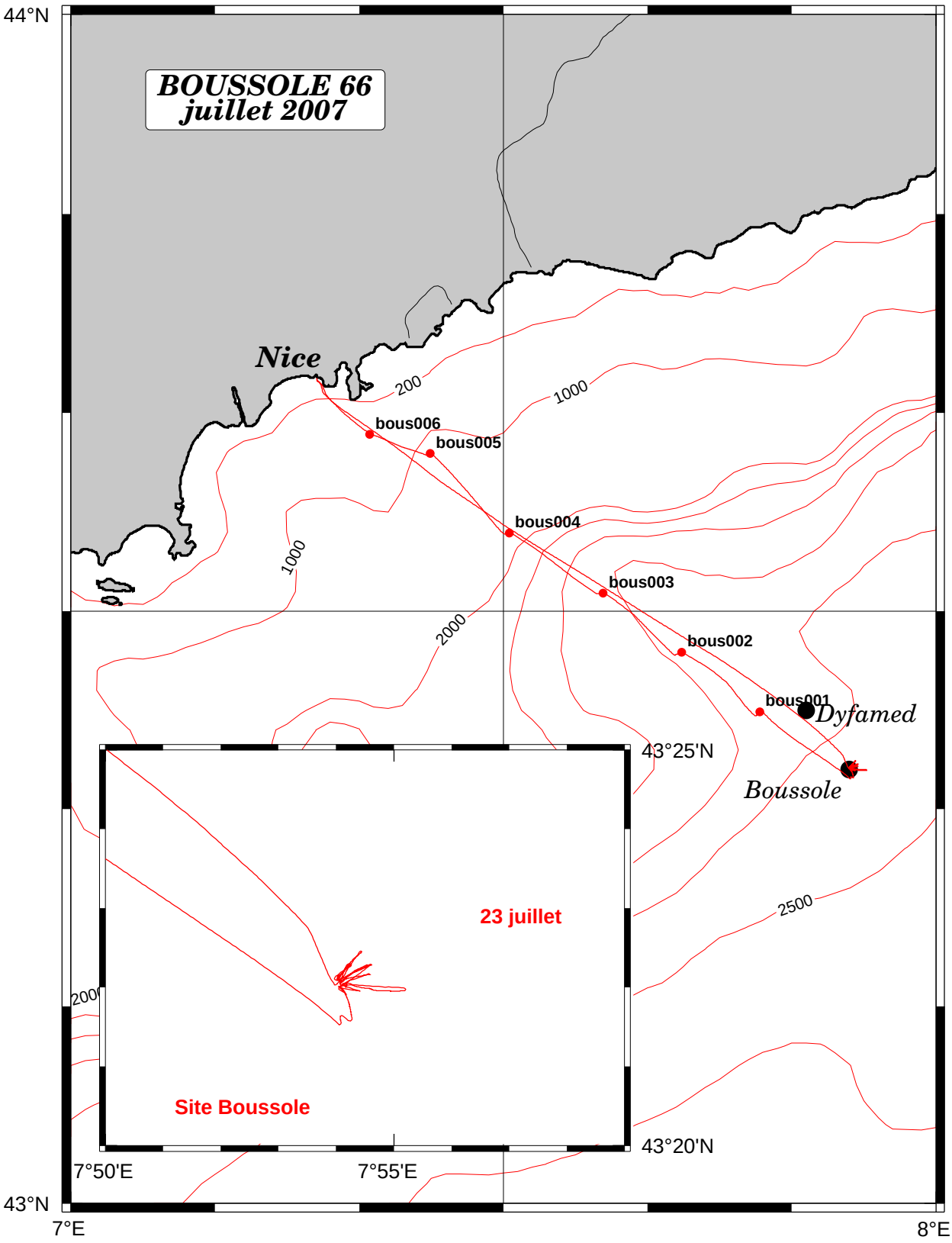


Figure 2. Calculated swath paths for MERIS (Esov software) above BOUSSOLE site for July 24, 2007.

Appendix

Cruise Summary Table for Boussole 66

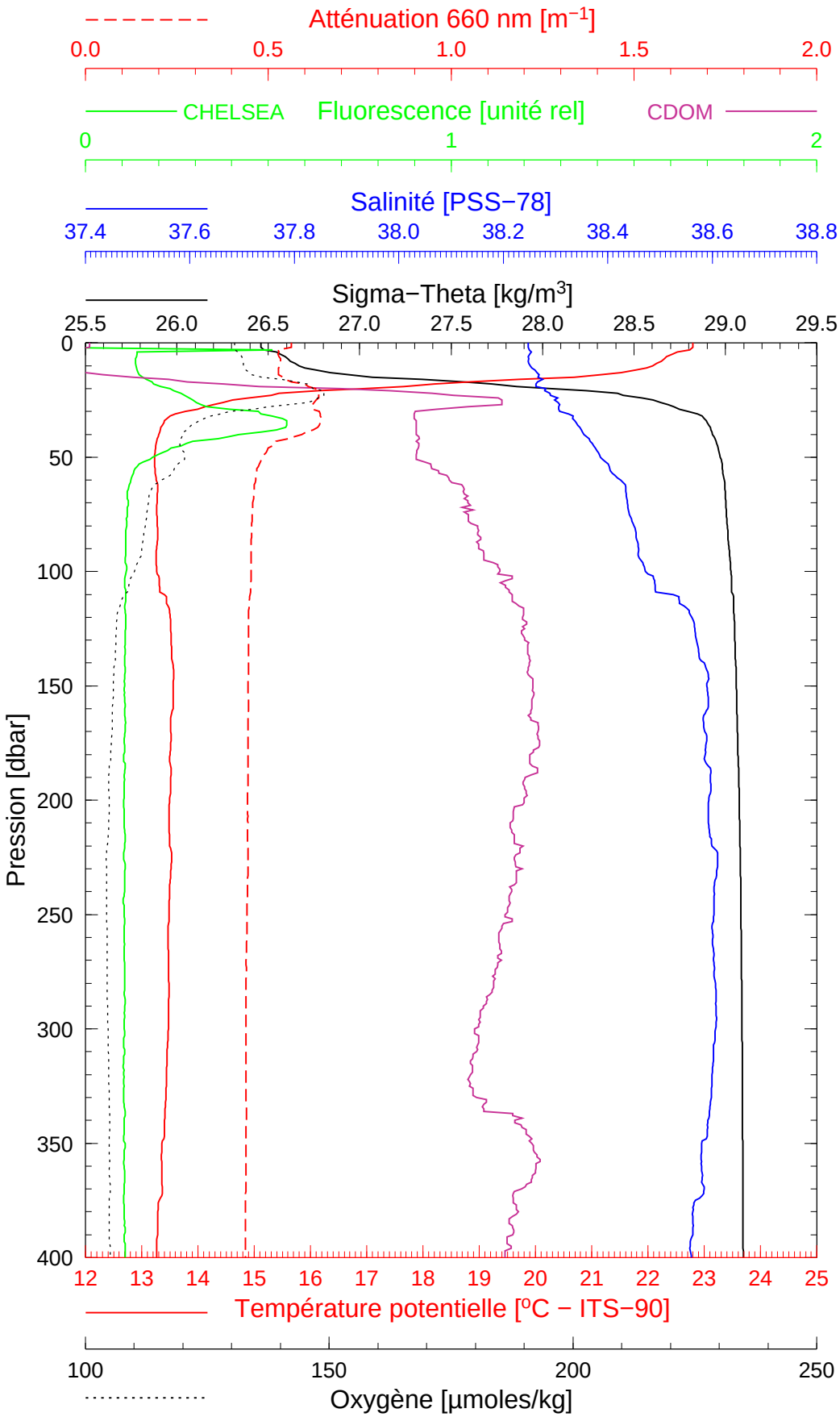
Date	Black names	Profile names	CTD notées /	Start Time	Duration	Depth max	Latitude (N)		longitude		Other sensors	Their cast	Start/Finish			Weather							Sea		
	(file ext: ".raw")	(file extension: ".raw")	satellite overpass	GMT (hour.min)	(min.sec)	(meter)	(Degree)	(Minute)	(Degree)	(Minute)				Sky	Clouds	Quantity (#/8)	Wind speed	Wind dir.	Atm. Pressure	humidity	Visibility	T air	T water	Sea	Swell height	Swell dir.	Whitecaps
				11:30	05:00	21	43	22.000	7	54.000	Secchi disk 01			blue	no	0											
				11:47	03:00		43	22.000	7	54.000	CIMEL 01			blue	no	0			1010.1								
				12:00	3 x 10:00	3 x 100	43	22.000	7	54.000	plankton net (x3)																
				12:51	03:00		43	22.000	7	54.000	CIMEL 02			blue	no	0			1010.0								
	bou230707black1			12:43	03:00																						
		bou230707AA		12:51	04:02	180	43	22.145	7	54.400				blue	Cu at horizon	1	5 kn	177	1010.0	75	very good	23.8		calm	0,4 m		no
		bou230707AB		13:02	04:19	180	43	22.044	7	54.636				blue	Cu at horizon	1	5 kn	177	1010.0	75	very good	23.8		calm	0,4 m		no
		bou230707AC		13:12	04:20	180	43	22.010	7	55.041				blue	Cu at horizon	1	5 kn	177	1010.0	75	very good	23.8		calm	0,4 m		no
23/07/2007	bou230707black2			13:27	03:00																						
				14:35		5 and 10	43	22.000	7	54.000	water samp.																
			CTDBOUS001	15:24	26:00	400	43	24.912	7	47.774				blue	Cu at horizon	2	3 kn	69	1008.4	75	very good	23.7	22.6	calm	0,4 m		no
				15:39	03:00		43	24.912	7	47.774	CIMEL 03			blue	no	0			1008.3								
				16:26	05:00		43	27.932	7	42.370	CIMEL 04			blue	no	0			1007.9								
			CTDBOUS002	16:31	25:00	400	43	27.932	7	42.370				partly covered	Cu	3	8 kn	170	1007.8	79	very good	23.5	23.6	calm	0,4 m		no
			CTDBOUS003	17:30	27:00	400	43	30.912	7	36.903				partly covered	Cu	2	13 kn	167	1007.4	78	very good	23.4	24.4	calm	0,4 m		no
			CTDBOUS004	18.34	24:00	400	43	33.957	7	30.426				partly covered	Cu	4	11 kn	187	1007.4	75	very good	24.0	24.6	calm	0,4 m		no
			CTDBOUS005	19:37	23:00	400	43	37.956	7	24.936				covered	Cu	6	6 kn	242	1007.4	82	very good	23.2	23.6	calm	0,4 m		no
			CTDBOUS006	20:27	23:00	400	43	38.925	7	20.718				night	night	9	10 kn	227	1008.0	83	night	23.1	23.0	calm	0,3 m		no
24/07/2007			CTDBOUS007	05:26	15:00	100	43	41.010	7	18.807				covered	Cu	7	7 kn	238	1006.4	72	very good	22.1	-	calm	0,4 m		some



GMT 2007 Jul 24 20:14:51

Boussole 66 **23/07/2007** **BOUS070723_01**

BOUS001

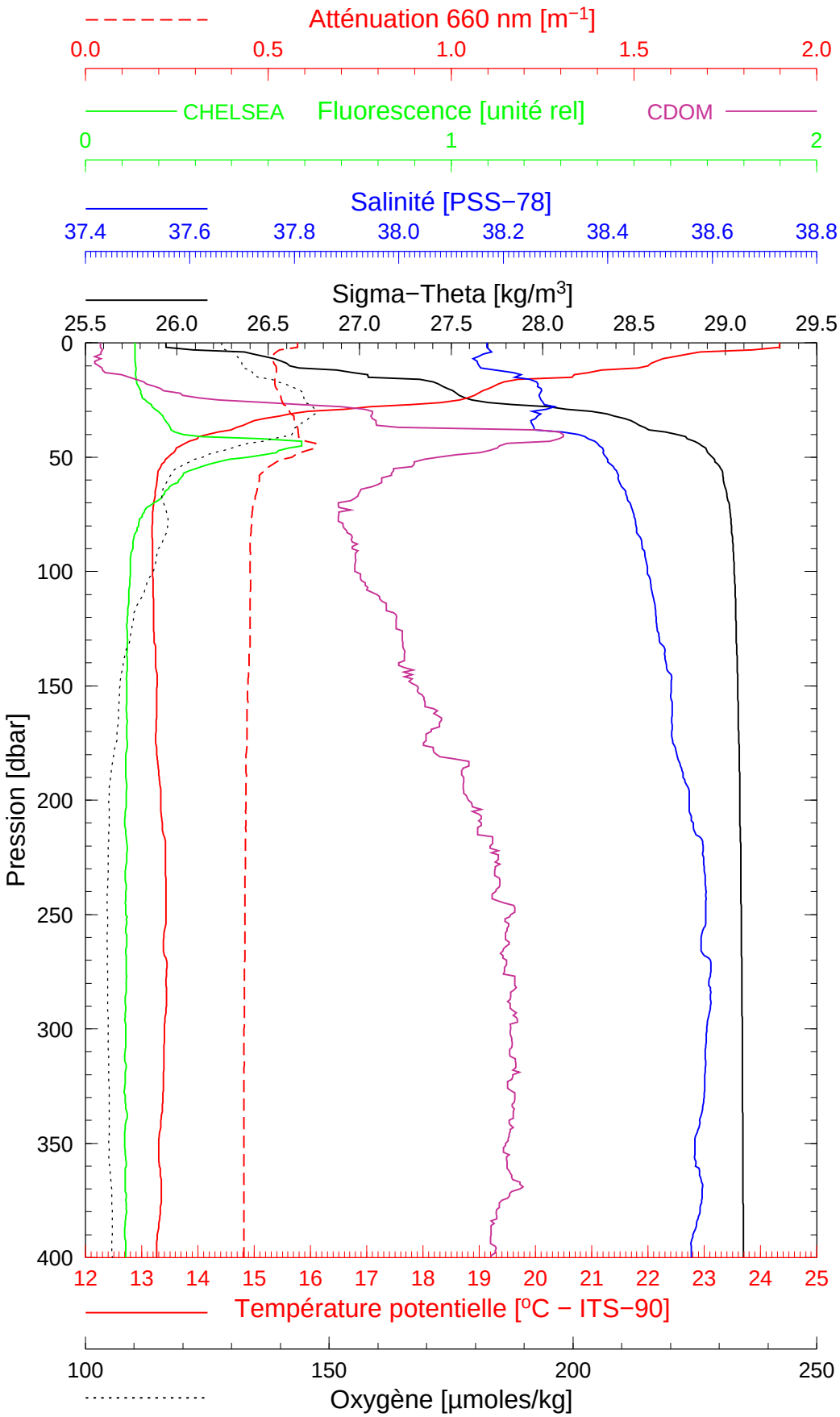


Date *23/07/2007* *Latitude* *43°24.912 N*

Heure déb *15h 24min [TU]* *Longitude* *07°47.774 E*

Boussole 66 **23/07/2007** **BOUS070723_02**

BOUS002

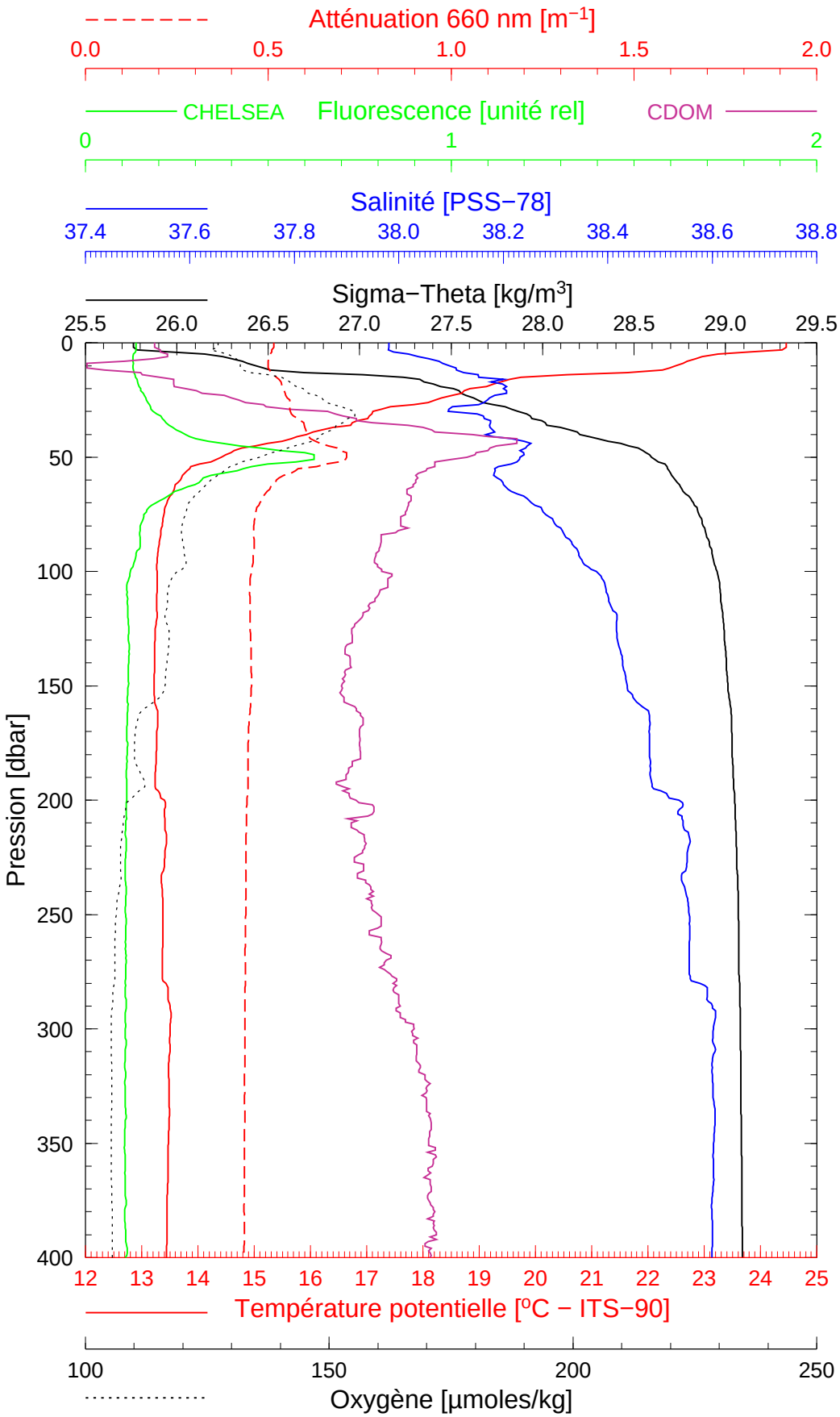


Date *23/07/2007* *Latitude* *43°27.932 N*

Heure déb *16h 31min [TU]* *Longitude* *07°42.370 E*

Boussole 66 **23/07/2007** **BOUS070723_03**

BOUS003

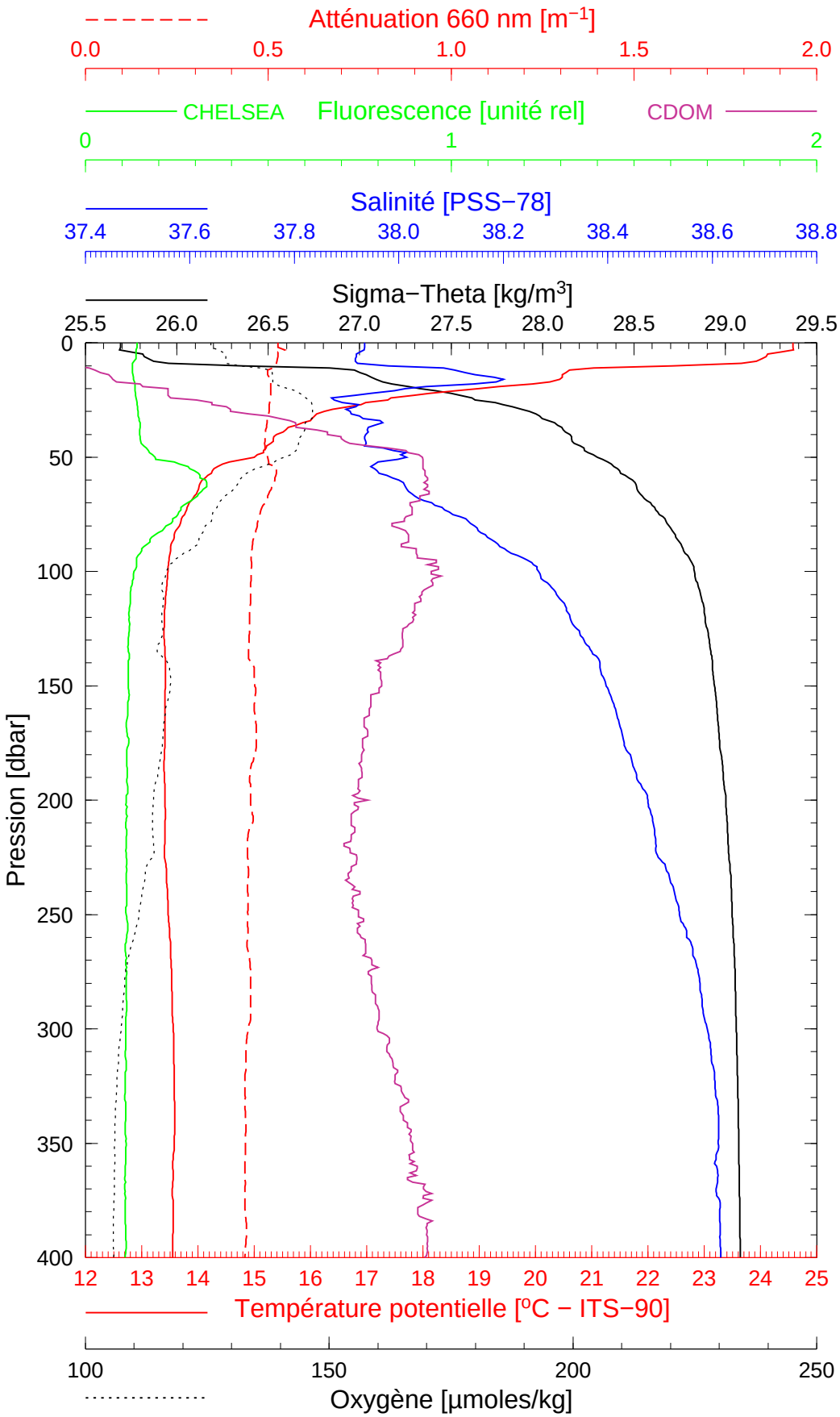


Date *23/07/2007* *Latitude* *43°30.912 N*

Heure déb *17h 30min [TU]* *Longitude* *07°36.903 E*

Boussole 66 **23/07/2007** **BOUS070723_04**

BOUS004

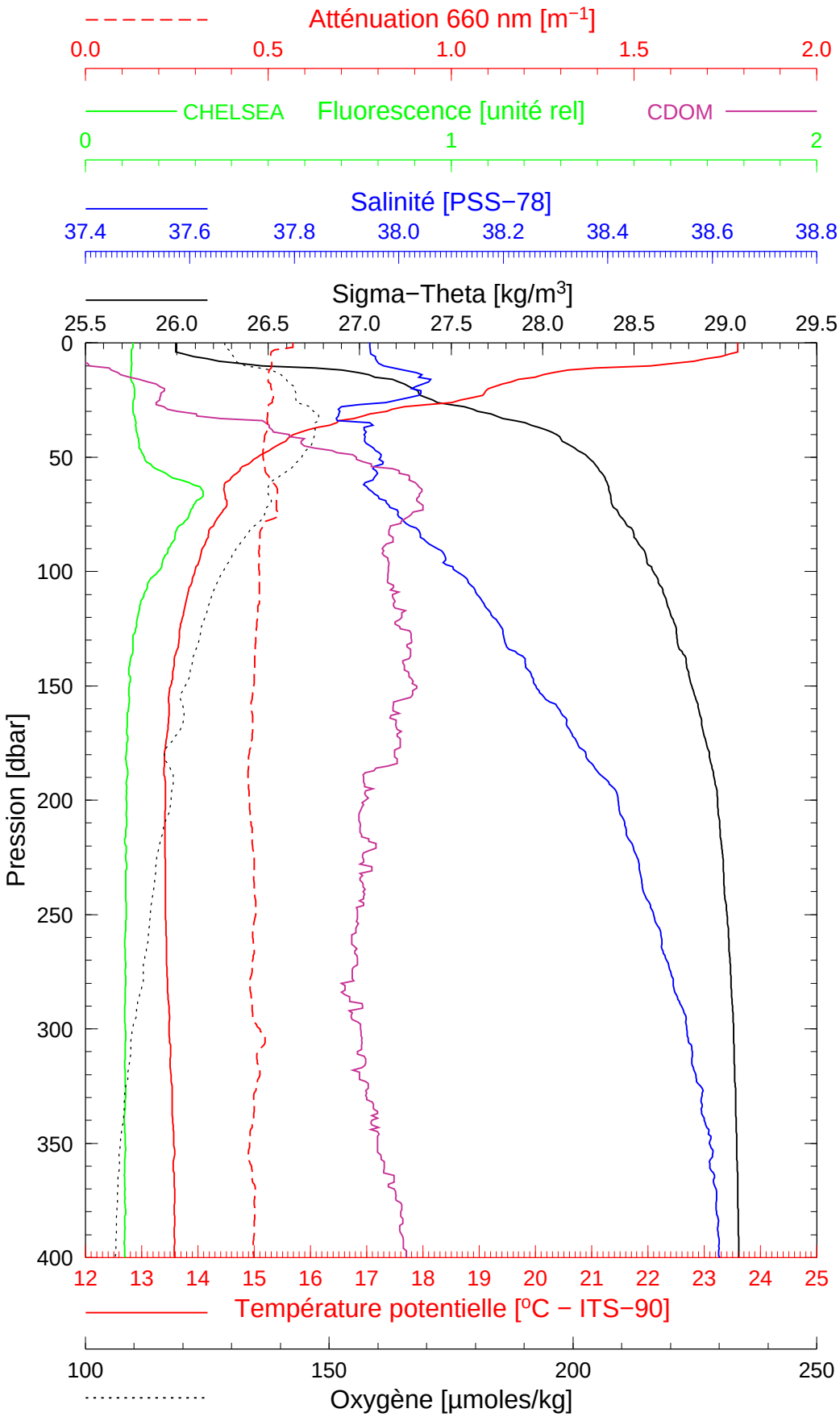


Date *23/07/2007* *Latitude* *43°33.957 N*

Heure déb *18h 34min [TU]* *Longitude* *07°30.426 E*

Boussole 66 **23/07/2007** **BOUS070723_05**

BOUS005

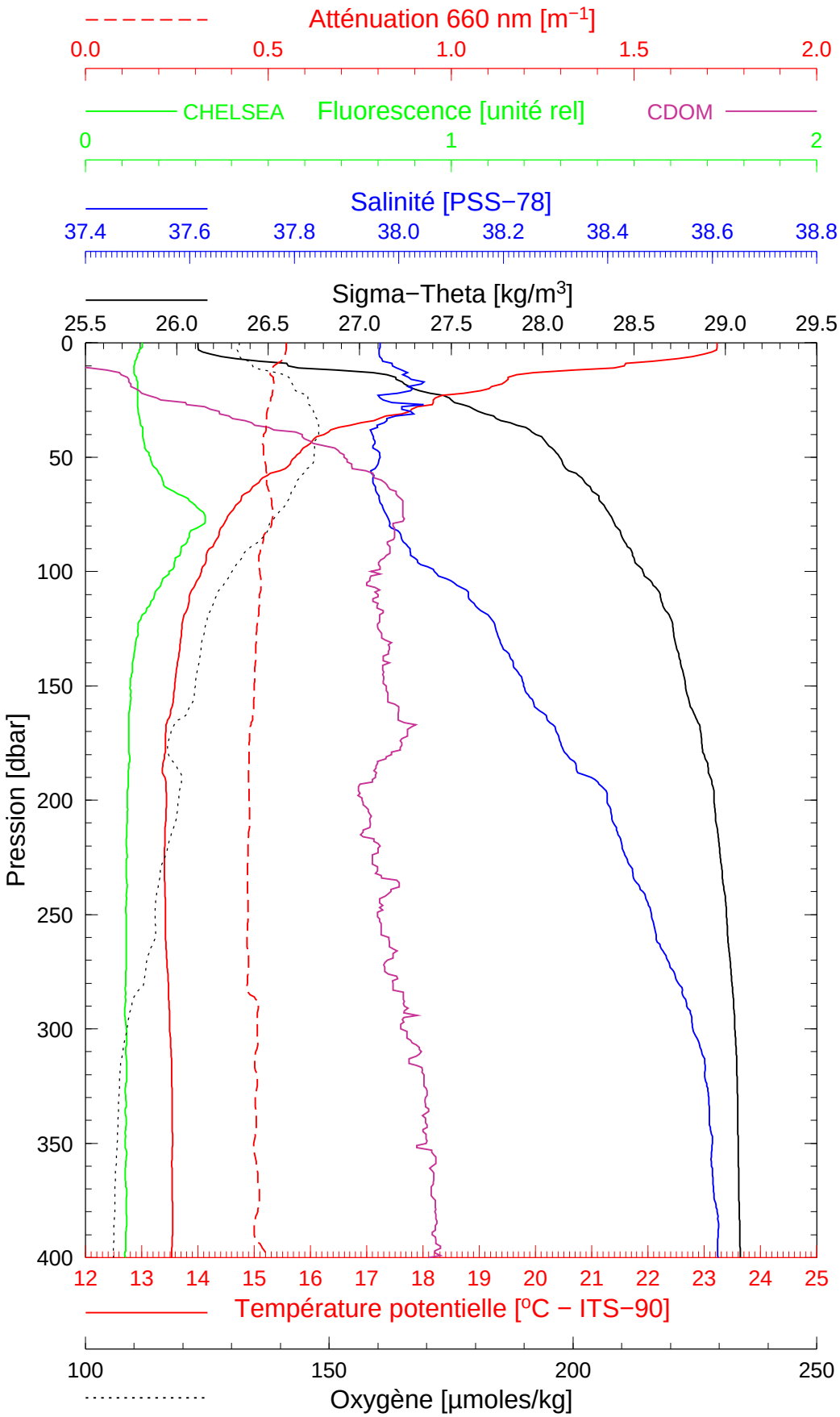


Date *23/07/2007* *Latitude* *43°37.956 N*

Heure déb *19h 37min [TU]* *Longitude* *07°24.936 E*

Boussole 66 **23/07/2007** **BOUS070723_06**

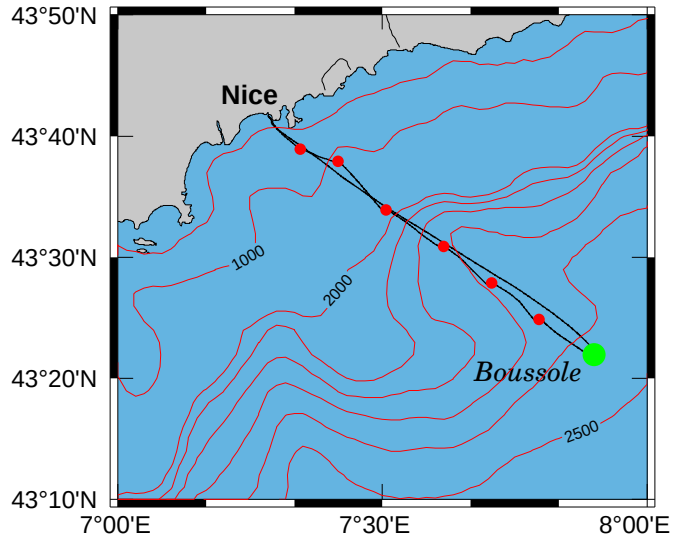
BOUS006

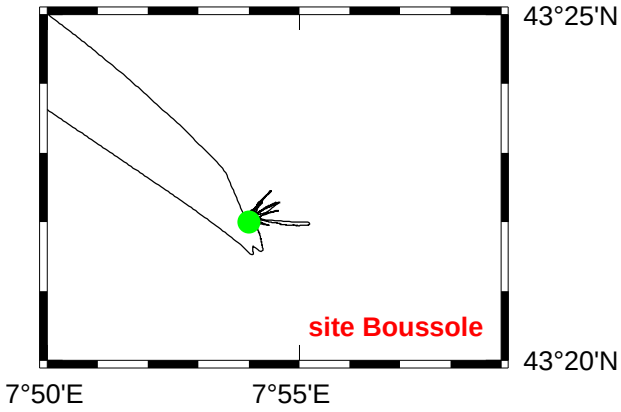


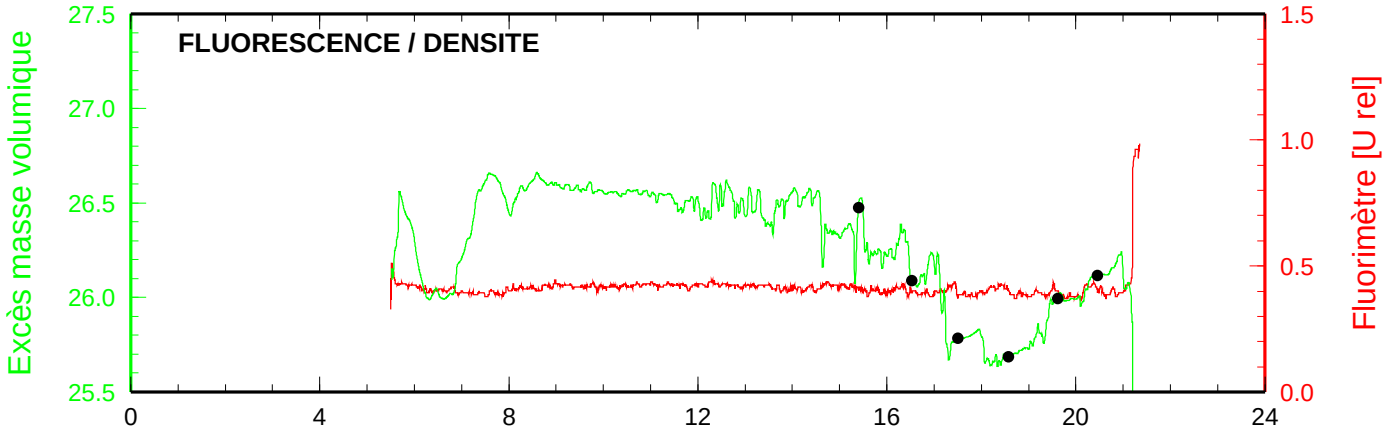
Date *23/07/2007* *Latitude* *43°38.925 N*

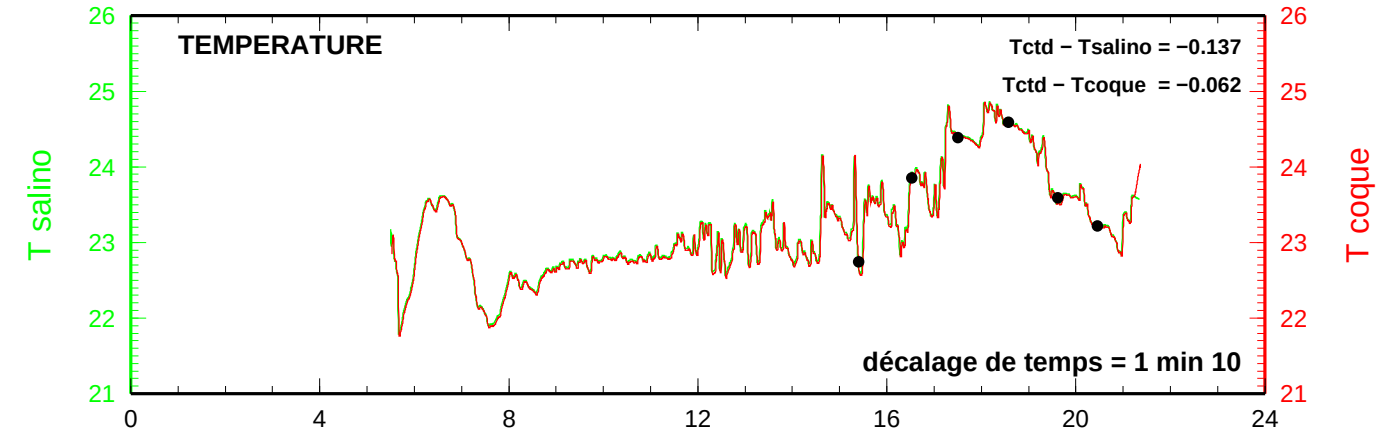
Heure déb *20h 27min [TU]* *Longitude* *07°20.718 E*

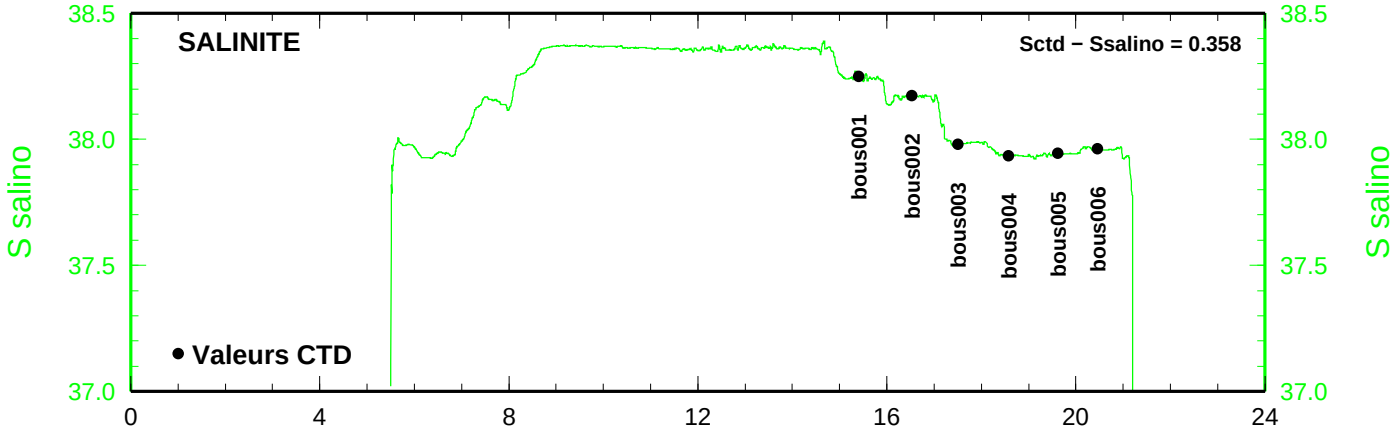
BOUSSOLE 66 23 juillet 2007











Heure [TU]