BOUSSOLE Monthly Cruise Report

Cruise 67
September 03 - 05, 2007

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Vessel: R/V Téthys II
(Captain: Alain Stéfan)

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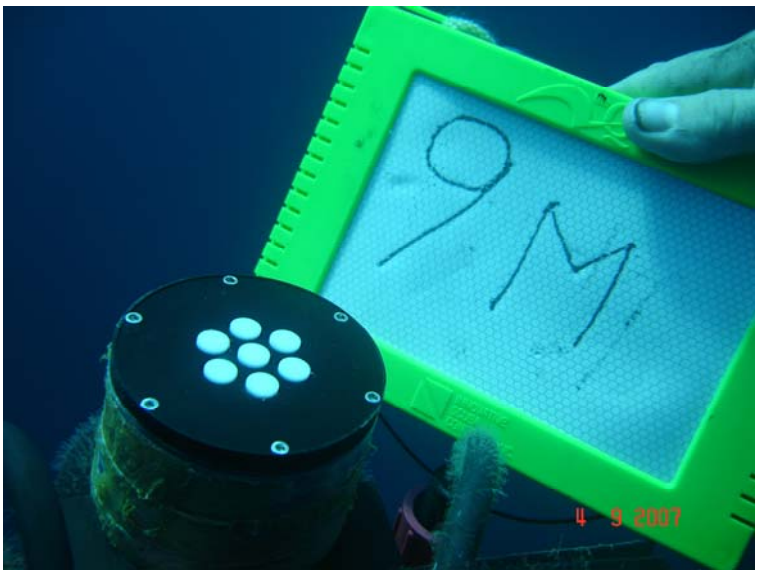


Fig 1. The 9 meter depth Eu sensor before cleaning.

BOUSSOLE project

ESA/ESRIN contract N° 17286/03/I-OL

Deliverable from WP#400/200

September 10, 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 again tested. The second attempt (after the remote control batteries have themselves been charged) was successful (now a 24 Volts supply cable is available, in case these batteries are discharged).

Cruise Summary

Weather conditions were not so good again. On the first day, there was no wind but the sky was covered with large clouds; on the second day the sly was blue but there was some wind blowing at more than 15 knots; and on the last day there was too much wind to work at the BOUSSOLE site.

Monday 03 September 2007

Operations performed at Sea this day were 7 CTD casts (among which 6 on the transect between the BOUSSOLE site and the port of Nice), water sampling for TSM, 3 plankton net profiles and some glider ballast test.

Tuesday 04 September 2007

Divers went at Sea this day to take pictures after and before cleaning the optical sensors. Other operations were 3 SPMR profiles, 1 CTD cast, water sampling at 5 m for TSM and 1 CIMEL measurement.

Wednesday 05 September 2007

Bad weather prevented any measurement performing at the BOUSSOLE site, except the acoustic release batteries tests after the remote control batteries had been charged during the night.

Cruise Report

03 September 2007 (UTC)

0430 Departure from the port of Nice.
0811 CTD 01, 400m, close to the buoy, with the glider attached to the rosette, with water sampling at 200, 150, 80, 70, 60, 50, 40, 30, 20, 10 and 5 meters for HPLC, Ap and CDOM.
0900 Glider deployment.
1015 Buoy data retrieval.
1040 Water sampling at 5 m for TSM.
1056 3x100 meters plankton net profiles.
1120 ARGOS beacon contacts and MVD optical surface cleaning.
1140 Some glider tests and recovering.
1323 CTD 02, 400 m, station 01 (43°25'N 07°48'E).
1421 CTD 03, 400 m, station 02 (43°28'N 07°42'E).
1523 CTD 04, 400 m, station 03 (43°31'N 07°37'E).
1624 CTD 05, 400 m, station 04 (43°34'N 07°31'E).
1727 CTD 06, 400 m, station 05 (43°37'N 07°25'E).
1816 CTD 07, 400 m, station 06 (43°39'N 07°21'E).
1910 Arrival at the port of Nice.

04 September 2007

0430 Departure from the port of Nice.
0800 Divers at Sea.
0810 Acoustic releases batteries tests: unsuccessful.
1016 SPMR profiles 01, 02 and 03.
1105 CIMEL 01, close to the buoy.
1109 CTD 08, 400 m, close to the buoy, with water sampling at 200, 150, 80, 70, 60, 50, 40, 30, 20, 10 and 5 meters for HPLC and Ap.
1210 Rosette at Sea at 5 meters for TSM.
1215 Acoustic releases batteries tests: unsuccessful.
1218 Departure from the BOUSSOLE site, as the wind begins to blow…
1520 Arrival at the port of Nice.

05 September 2007

0700 Departure from the port of Nice.
1035 Acoustic releases batteries tests: successful.
1330 Arrival to the port of Nice.

Calculated Swath paths for the MERIS Sensor (ESOV Software)

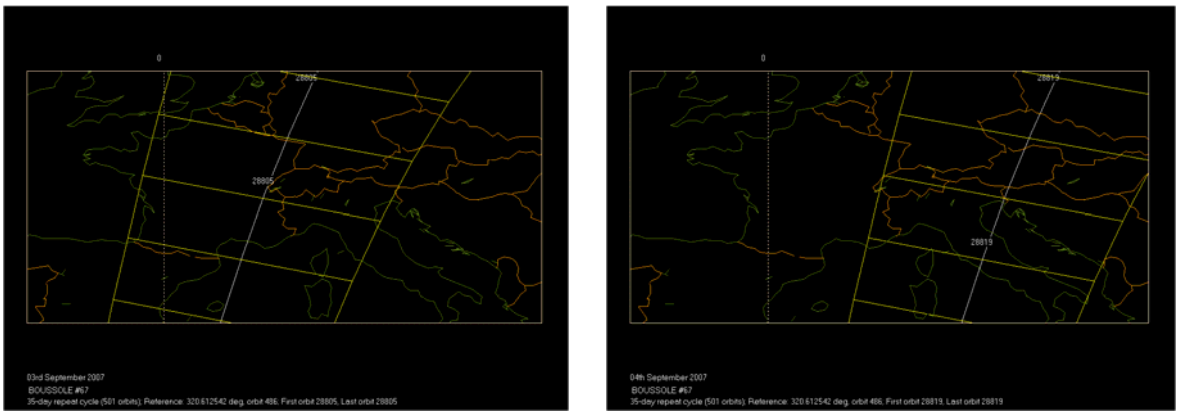


Figure 2. Calculated swath paths for MERIS (Esov software) above BOUSSOLE site for September 03 and 04, 2007.

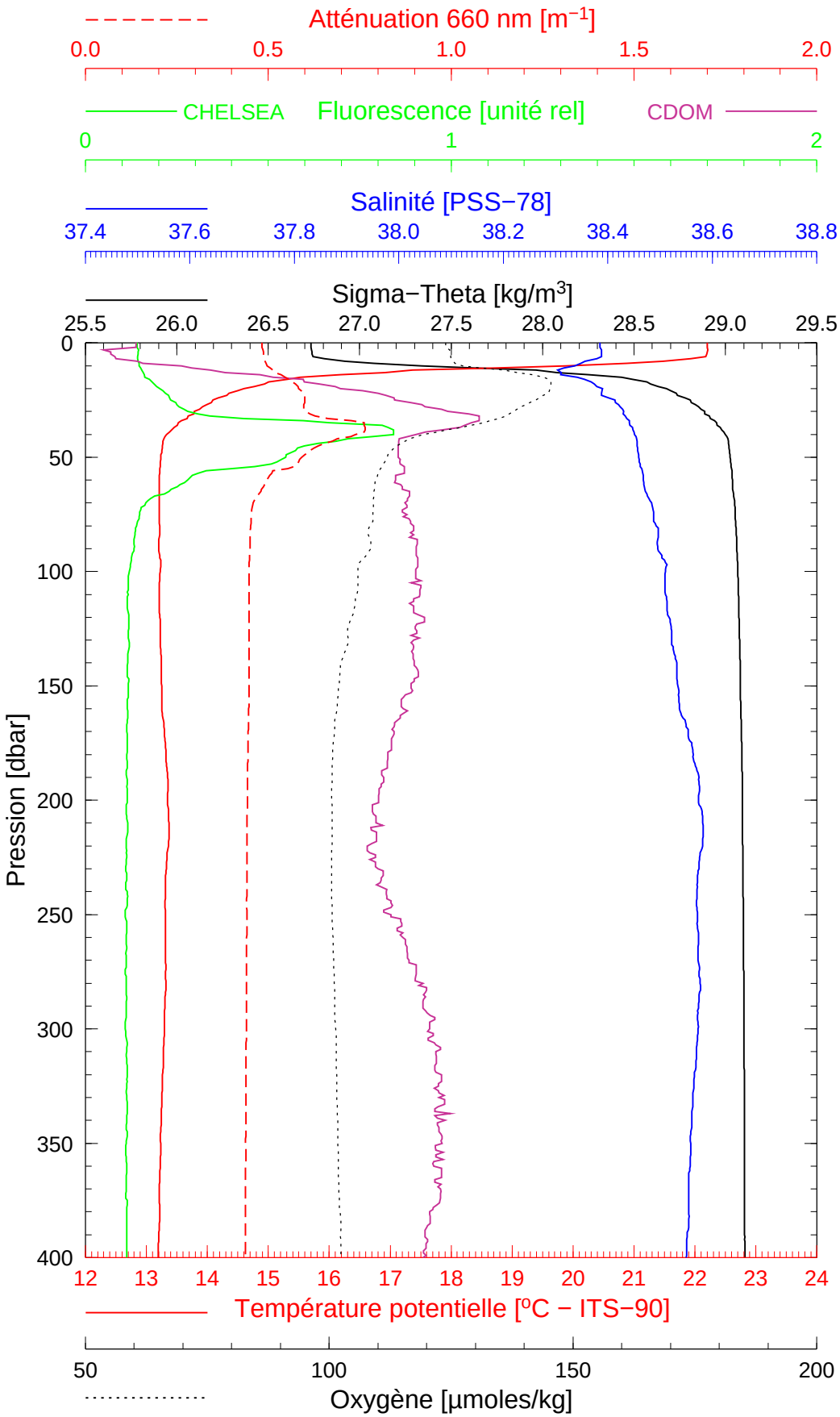
Appendix

Cruise Summary Table for Boussole 67

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
			CTDBOUS001	08:11	24:00	400	43	22.482	7	54.253				covered	Cu	4	6 kn	200	1014.0	76	very good	23.6	22.2	calm	0,4 m		no
				10:40		5	43	22.000	7	54.000	water samp.																
				10:56	3 x 10:00	3 x 100	43	22.208	7	54.204	plankton net (x3)																
			CTDBOUS002	13:23	24:00	400	43	24.966	7	48.001				covered	Cu	4	0 kn	-	1012.2	81	good	22.6	22..7	calm	0,4 m		no
03/09/2007			CTDBOUS003	14:21	28:00	400	43	27.955	7	42.481				covered	Cu	4	0 kn	-	1011.5	77	good	23.1	22.3	calm	0,4 m		no
			CTDBOUS004	15:23	27:00	400	43	30.993	7	36.909				covered	Cu	4	4 kn	129	1011.0	81	good	22.1	22.3	calm	0,4 m		no
			CTDBOUS005	16:24	24:00	400	43	34.021	7	30.887				covered	Cu	6	4 kn	101	1009.9	83	good	21.7	23.1	calm	0,4 m		no
			CTDBOUS006	17.27	25:00	400	43	37.498	7	24.951				covered	Cu	6	8 kn	53	1009.8	75	good	23.5	23.4	calm	0,4 m		no
			CTDBOUS007	18:16	27:00	400	43	38.885	7	20.830				covered	Cu	7	7 kn	141	1009.7	81	good	22.1	23.5	calm	0,4 m		no
	bou040907black1			08:39	03:00																						
		bou090407AA		10:16	04:22	180	43	21.783	7	53.782				blue	some Cu	4	16	98	1008.4	52	excellent	23.5		choppy	1 m		yes
		bou040907AB		10:29	04:55	180	43	21.628	7	53.590				blue	partly covered	3	14 kn	76	1011.7	89	excellent	17.5		choppy	1 m		yes
04/09/2007		bou040907AC		10:41	06:34	180	43	21.500	7	53.394				blue	partly covered	3	14 kn	76	1011.7	89	excellent	17.5		choppy	1 m		yes
	bou040907black2			11:03	03:00																						
				11:05	02:00		43	21.269	7	52.941	CIMEL 01			blue	some, far	2			1008.3								
			CTDBOUS008	11:09	21:00	400	43	21.316	7	53.027				blue	some Cu	3	19 kn	292	1008.4	47	excellent	23.4	22.5	agitated	1,3 m		yes
				12:05		5	43	22.000	7	54.000	water samp.																

Boussole 67 **03/09/2007** **BOUS070903_01**

BOUS001

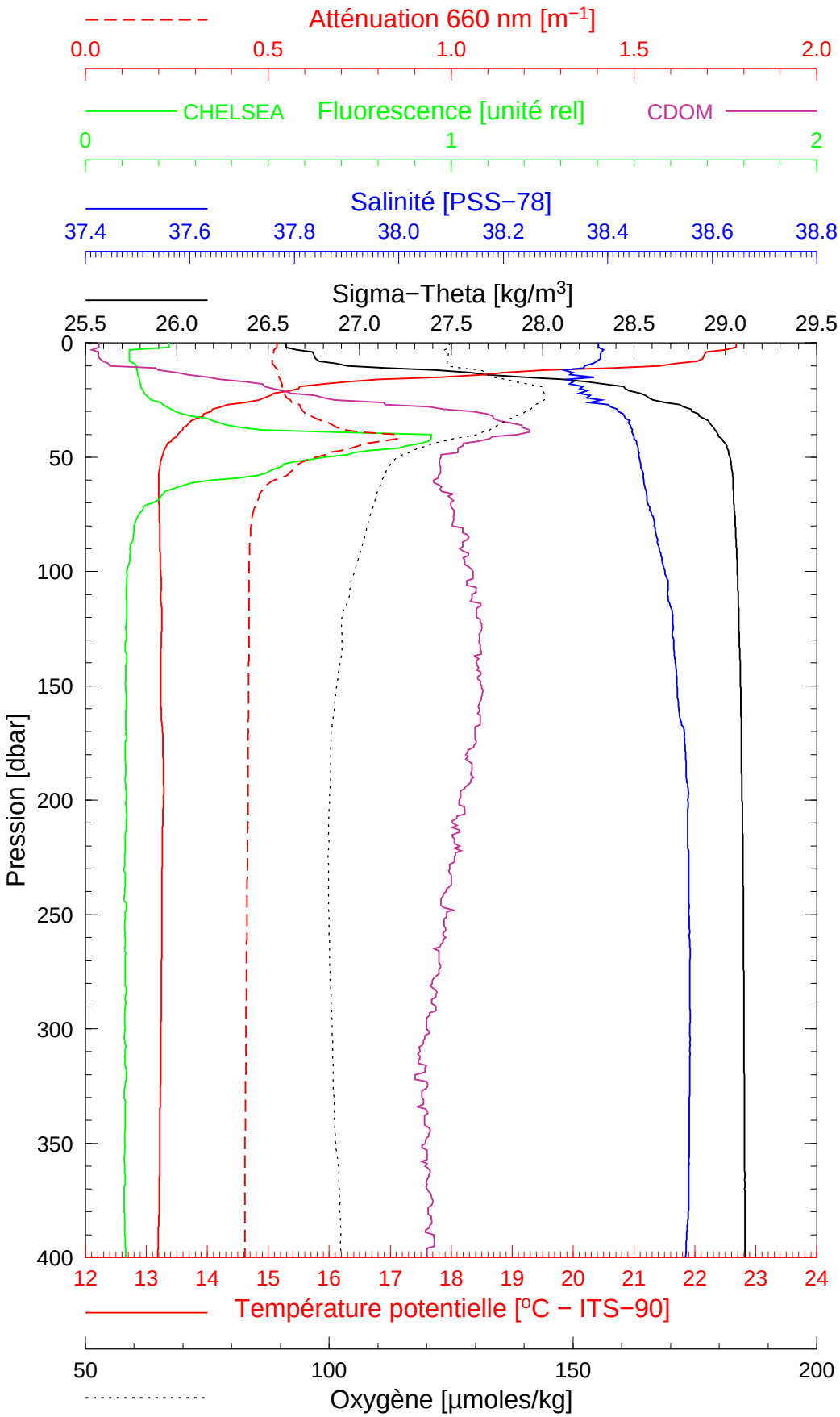


Date *03/09/2007* *Latitude* *43°22.482 N*

Heure déb *08h 11min [TU]* *Longitude* *07°54.253 E*

Boussole 67 **03/09/2007** **BOUS070903_02**

BOUS002

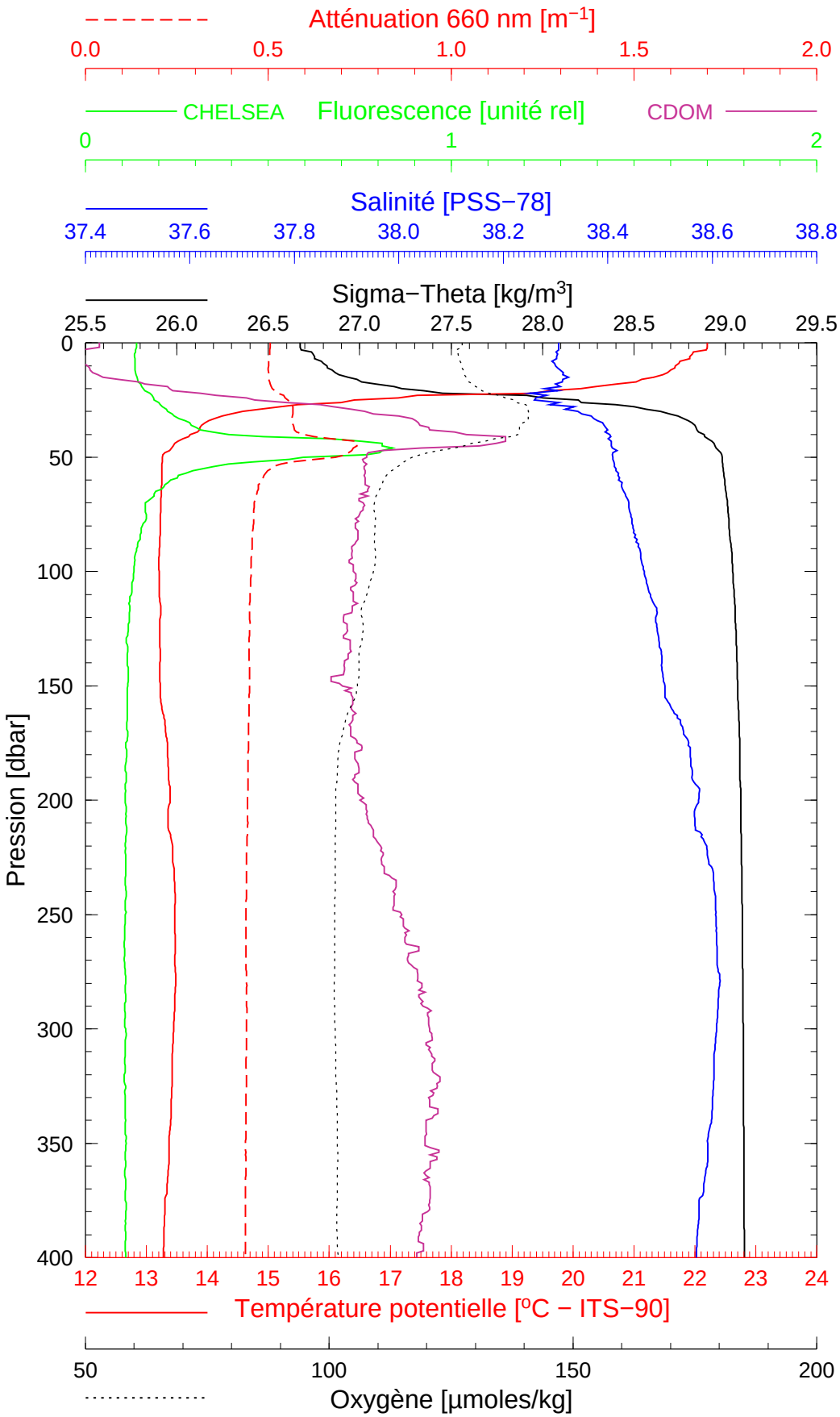


Date *03/09/2007* *Latitude* *43°24.966 N*

Heure déb *13h 23min [TU]* *Longitude* *07°48.001 E*

Boussole 67 **03/09/2007** **BOUS070903_03**

BOUS003

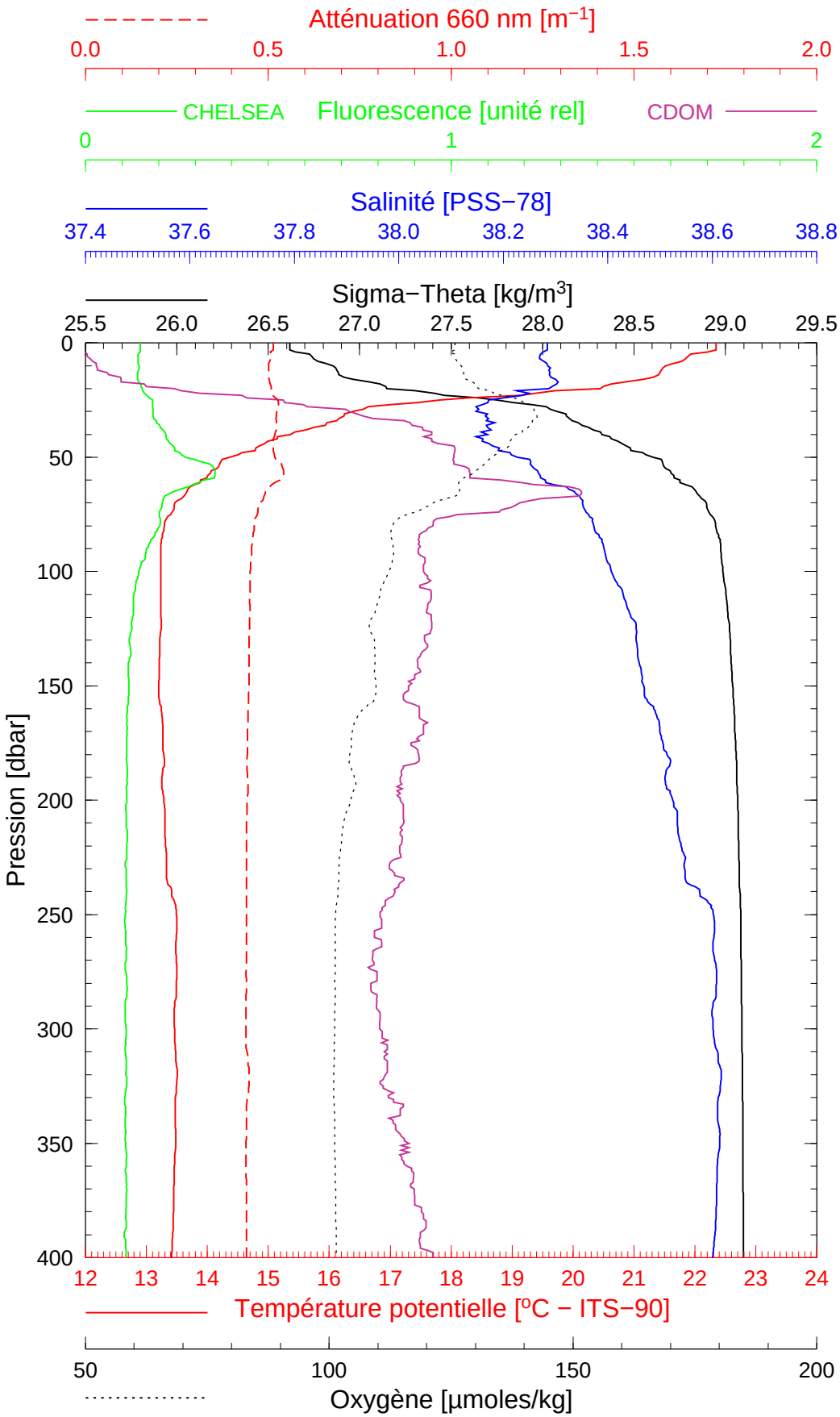


Date *03/09/2007* *Latitude* *43°27.955 N*

Heure déb *14h 21min [TU]* *Longitude* *07°42.481 E*

Boussole 67 **03/09/2007** **BOUS070903_04**

BOUS004

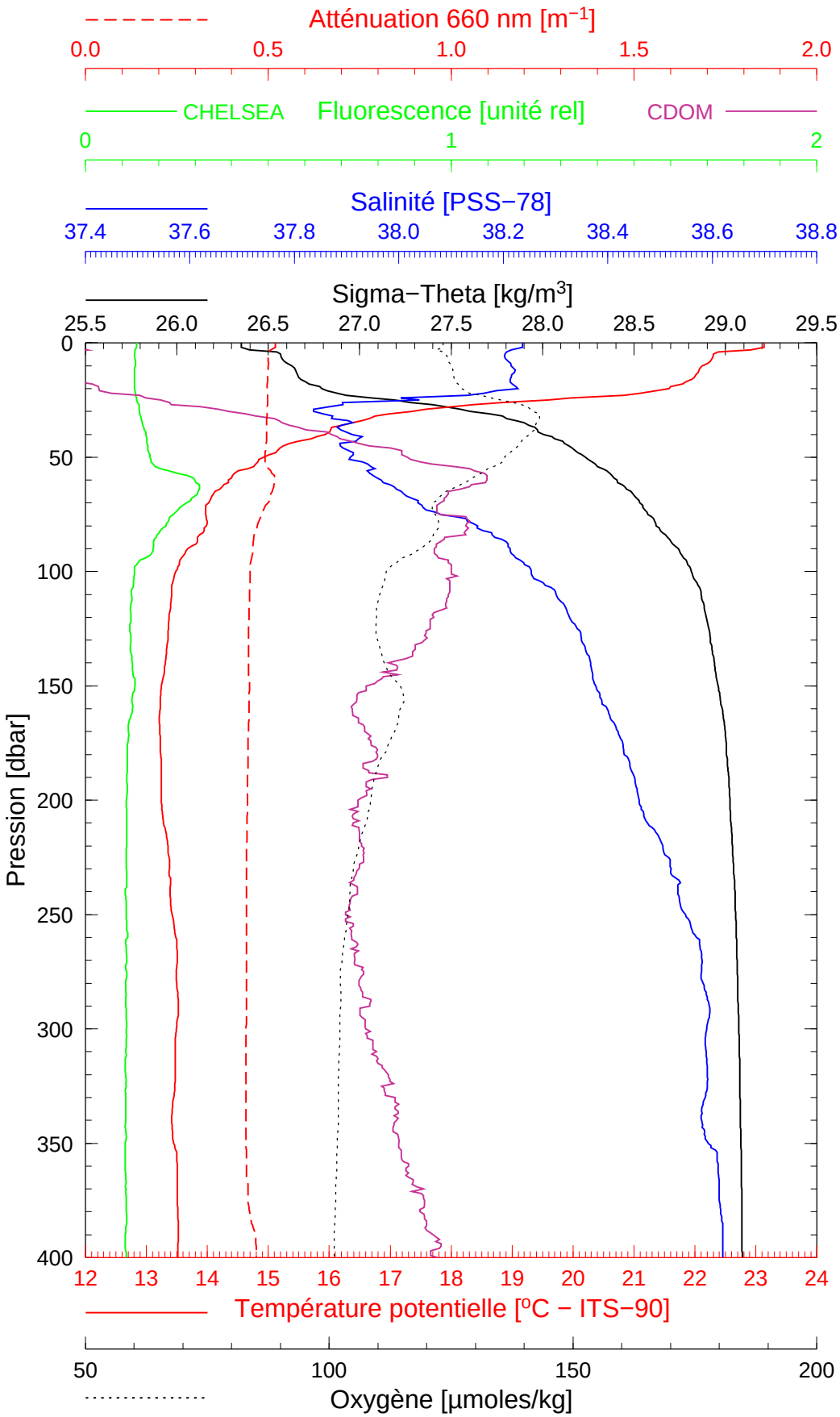


Date *03/09/2007* *Latitude* *43°30.993 N*

Heure déb *15h 23min [TU]* *Longitude* *07°36.909 E*

Boussole 67 **03/09/2007** **BOUS070903_05**

BOUS005

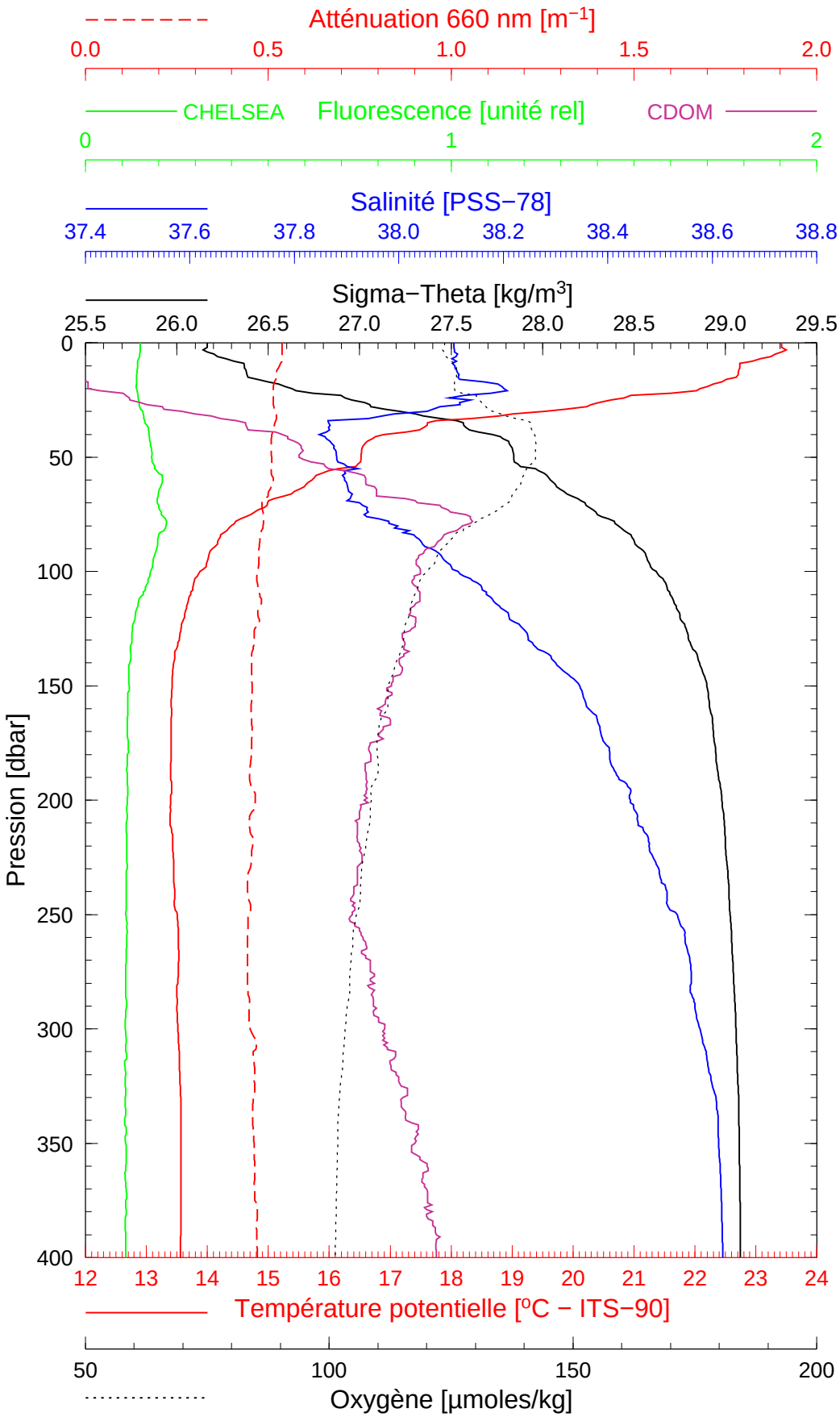


Date *03/09/2007* *Latitude* *43°34.021 N*

Heure déb *16h 24min [TU]* *Longitude* *07°30.887 E*

Boussole 67 **03/09/2007** **BOUS070903_06**

BOUS006

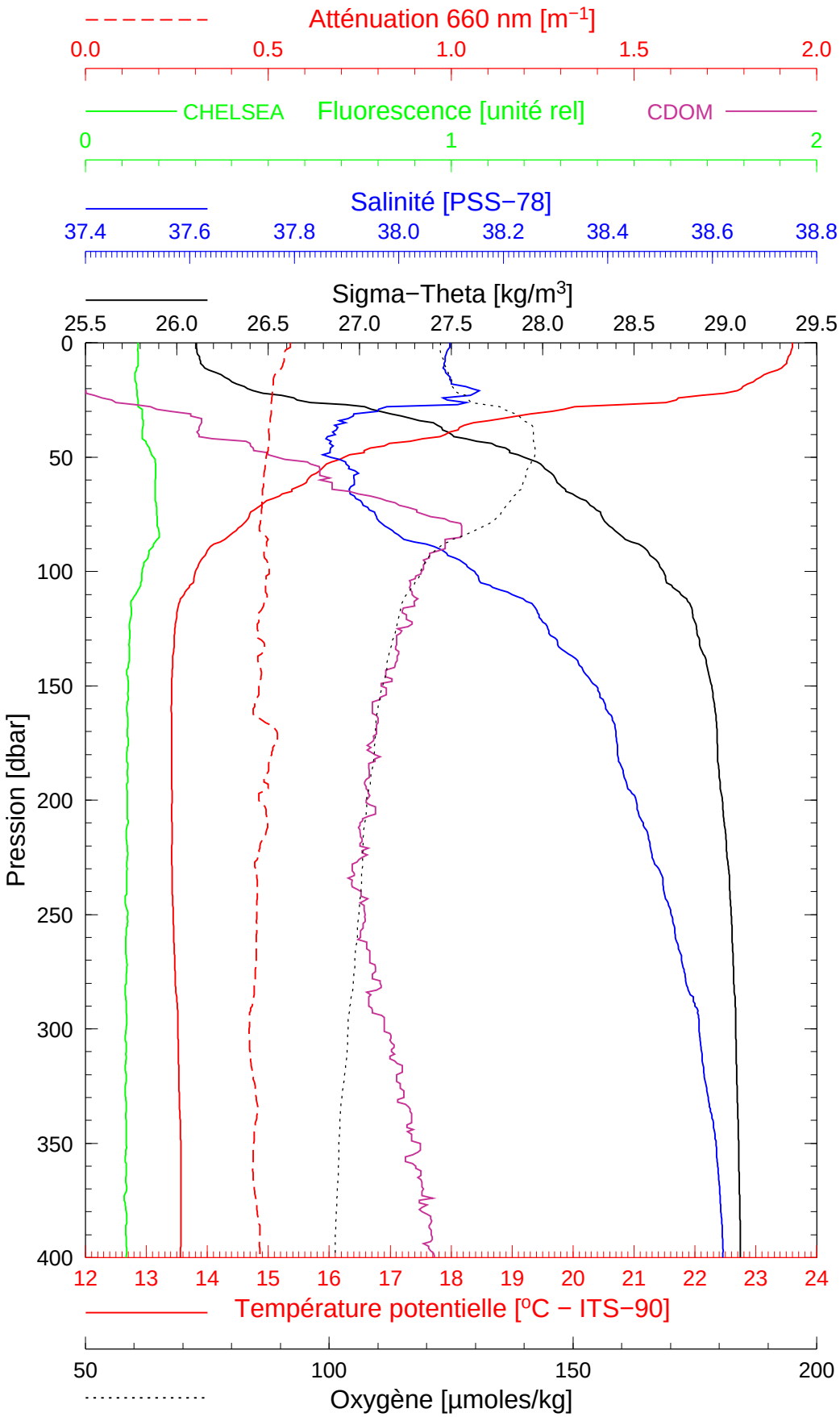


Date *03/09/2007* *Latitude* *43°37.498 N*

Heure déb *17h 27min [TU]* *Longitude* *07°24.951 E*

Boussole 67 **03/09/2007** **BOUS070903_07**

BOUS007

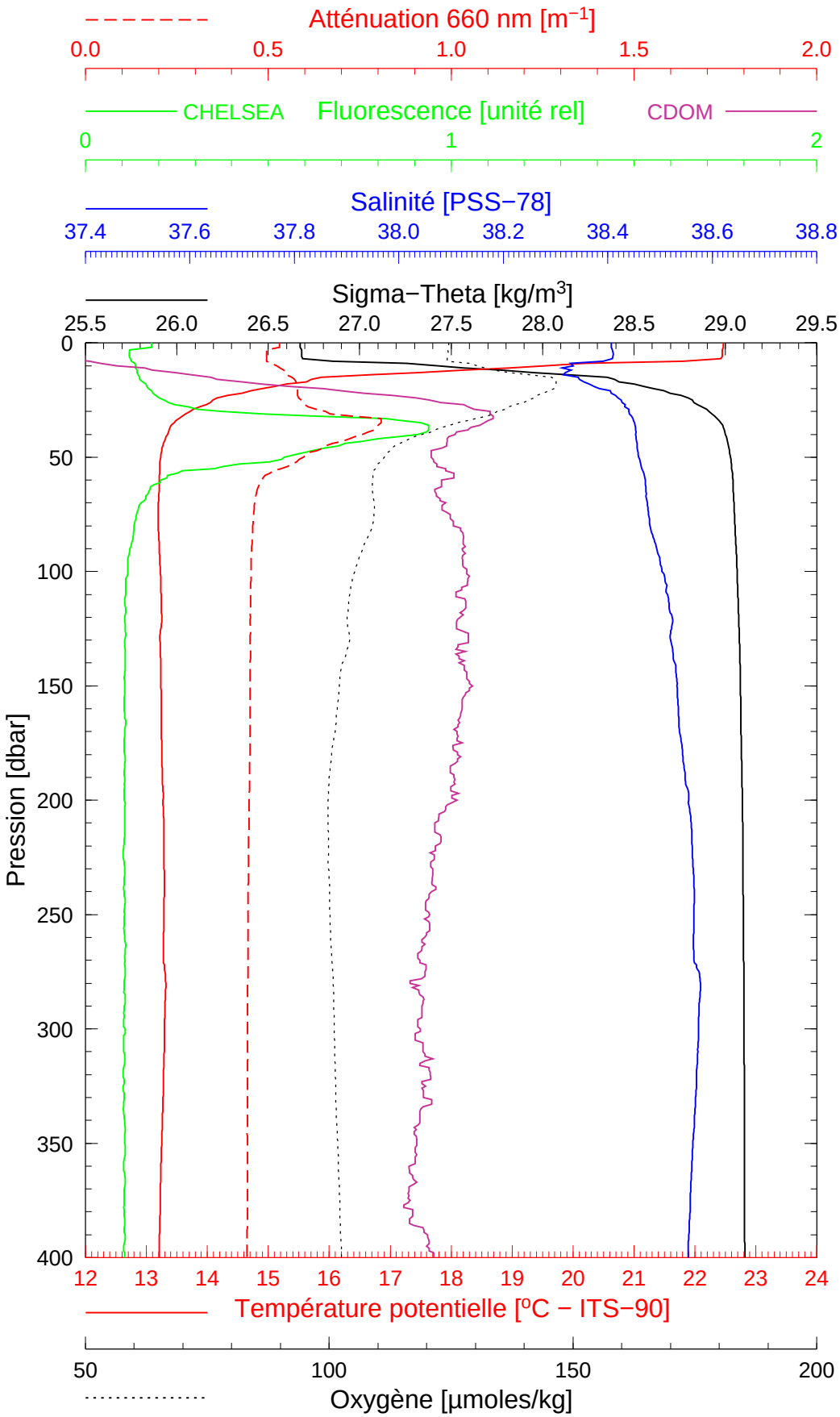


Date *03/09/2007* *Latitude* *43°38.885 N*

Heure déb *18h 16min [TU]* *Longitude* *07°20.830 E*

Boussole 67 **04/09/2007** **BOUS070904_01**

BOUS008



Date *04/09/2007* *Latitude* *43°21.316 N*

Heure déb *11h 09min [TU]* *Longitude* *07°53.027 E*