BOUSSOLE Monthly Cruise Report

Cruise 28
December 03 – 05, 2003

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

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Fig 1. Choppy seas for the only day where conditions permitted the ship to leave port

BOUSSOLE project

ESA/ESRIN contract N° 17286/03/I-OL

Deliverable from WP#400/200

December 2, 2005

Foreword

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

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European Space Agency

Centre National d'Etudes Spatiales, France

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Cruise Objectives

Multiple SPMR profiles are to occur within 1 hour of satellite overhead passes of SeaWiFS and MERIS and around solar noon. 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), SIMBADA measurements are to be performed consecutively where possible with SPMR profiles. If sea conditions are poor but sky is good, SIMBADA 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 the filters stored in LN2 for HPLC pigment and particulate absorption 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 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. On other uninterrupted transits between Nice and Boussole, Simbada measurements of optical thickness should be taken every 30 minutes to characterise variability between the Cap Ferrat sun photometer site and the Boussole site.

Cruise Summary

Heavy sea conditions prevented departure on the first 2 scheduled days. However, the forecast for the third and final day was for the strong winds to reduce and Beaufort force 2-3 for the afternoon. Departure was delayed until 08h00 but arriving on site just before noon still meant an uncomfortable wait until the seas had calmed down enough to work the CTD.

Cruise Report

Wednesday 3rd December (Times UTC)

Cancelled due to weather conditions

Thursday 4th December

Cancelled due to weather conditions

Friday 5th December

0700 Depart Port of Nice
1040 Arrival at Boussole Site (43°22'N 7°54'E). Too rough to work
1501 CTD Boussole 1. Max 400m. Bottle depths (m): 200,150,100,70,60,50,40,30,20,10,5.
1535 CTD on deck
1626 CTD Boussole 2. Max 400m. Transect Station 1 (43°25'N 7°28'E).
1722 CTD Boussole 3. Max 400m. Transect Station 2 (43°28'N 7°42'E).
1819 CTD Boussole 4. Max 400m. Transect Station 3 (43°31'N 7°37'E).
1921 CTD Boussole 5. Max 400m. Transect Station 4 (43°34'N 7°31'E).
2019 CTD Boussole 6. Max 400m. Transect Station 5 (43°37'N 7°25'E).
2045 Depart Station 6 for port of Nice.
2140 Arrival in port of Nice

Boussole Site Satellite Overhead Pass Schedules

SeaWiFS: Viewing Times

Date Time (UTC)	Lat (DEG)	Lon (DEG)	Sat. Azi.	Sat. Elev.	Range (km)	Sun Azi.	Sun Elev.	Tilt	Flags*
03 Dec 2003 11:13:04	43.220	7.540	106.99	20.56	1562	178.36	24.72	AFT	2 3
03 Dec 2003 12:50:41	43.220	7.540	268.16	39.58	1031	202.68	21.45	AFT	2
04 Dec 2003 11:53:34	43.220	7.540	129.42	48.72	900	188.54	24.14	AFT	2
04 Dec 2003 13:30:52	43.220	7.540	284.63	17.85	1689	211.75	18.01	AFT	2 3
05 Dec 2003 12:33:57	43.220	7.540	249.89	55.55	832	198.40	22.31	AFT	2

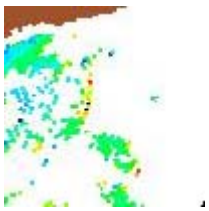
MERIS: Viewing Times

Date Time (UTC)	Lat (DEG)	Lon (DEG)	Sat. Azi.	Sat. Elev.	Range (km)	Sun Azi.	Sun Elev.	Tilt	Flags*
05 Dec 2003 10:07:32	43.220	7.540	287.59	81.62	798	161.82	22.38	NADIR	

Ligurian Sea Boussole Site Satellite Colour Images

http://seawifs.gsfc.nasa.gov/cgi/seawifs_region_extracts.pl

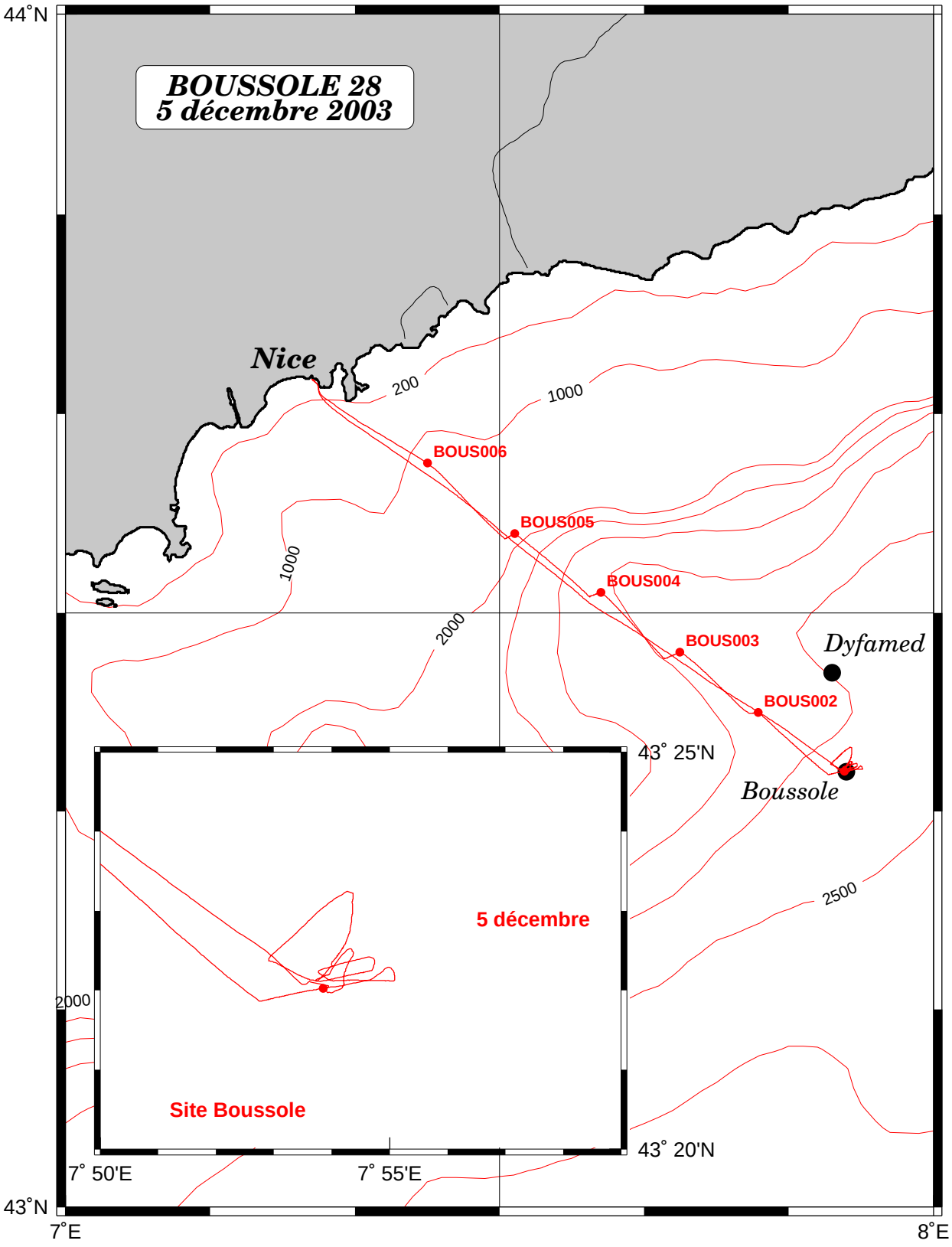
SeaWiFS



5th December, 2003

Tabulated Cruise Summary for Boussole 28

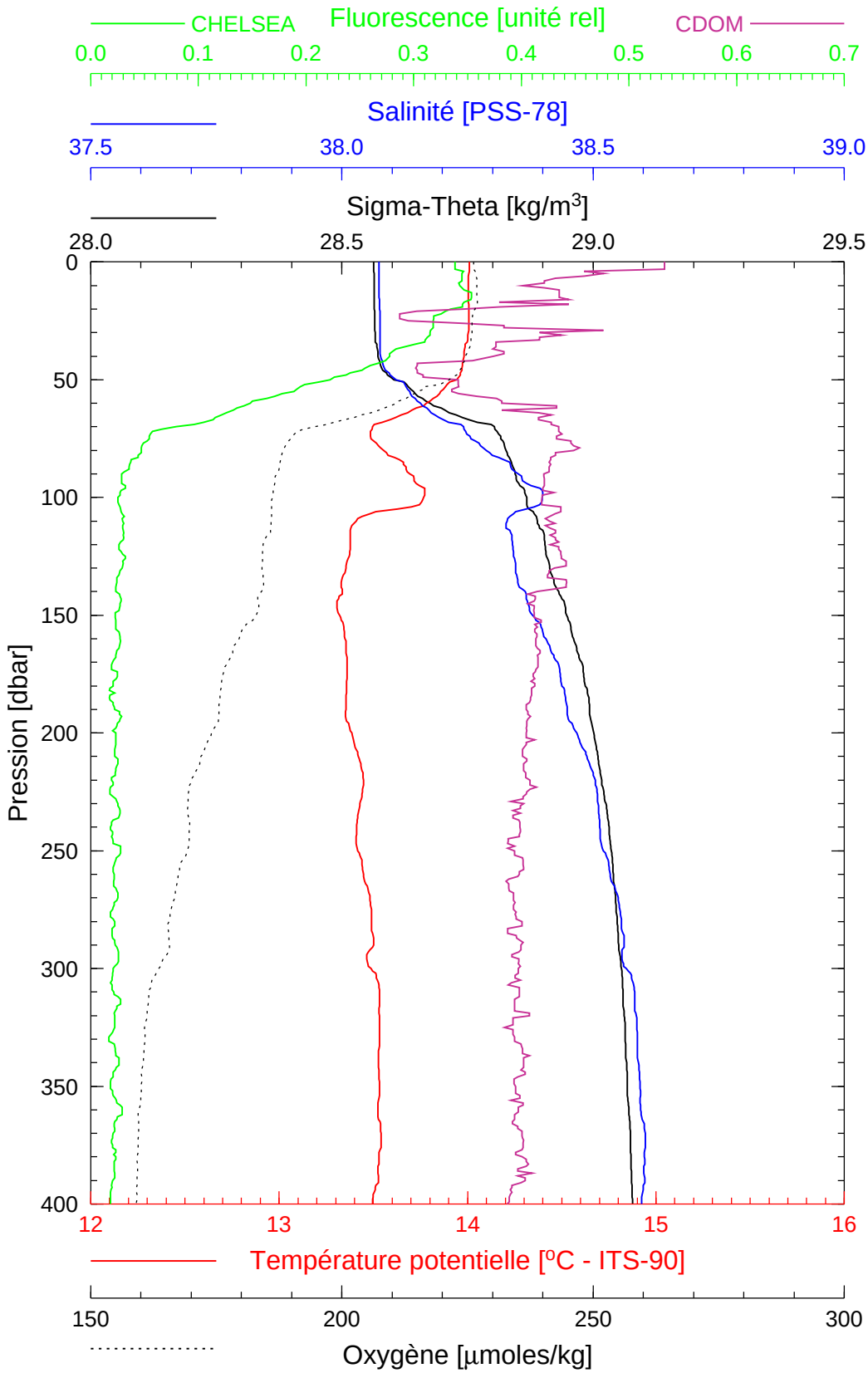
Date	Sensors:	Black names	Profile names	CTD notées /	Start Time	Duration	Depth max	Latitude (N)		Latitude (E)		Other sensors	Their cast	PAR	Start/Finish				Weather							Sea		
	spmr&smsr, smsr	(file extension: *.raw*)	(file extension: *.raw*)	satellite overpass	GMT (hour.min)	(min.sec)	(meter)	(Degree)	(Minute)	(Degree)	(Minute)	(hyperspectral:HS)			S/F mark#	Sky	Clouds	Qty (#/8)	Wind speed	Wind dir.	Atm. Pressure	humidity	Visibility	T air	T water	Sea	Swell height	Swell dir.
03/12/03																												
04/12/03																												
05/12/03				CTDBOUS001	15:01			43	22.029	7	53.869							6	16	69	1022.9	79		15.2	14.02	AG		
				CTDBOUS002	16:26	00:25		43	25.005	7	47.895							9	14	20	1023.1	77		14.9	14.02	P AG		
				CTDBOUS003	17:22	00:28		43	28.035	7	42.485							9	15	89	1023.2	77		15.5	14.96	P AG		
				CTDBOUS004	18:19	00:27		43	31.043	7	37.01							9	14	90	1023.3	77		16.1	16.7	P AG		
				CTDBOUS005	19:21	00:13		43	33.989	7	31.069							9	7	36	1023.7	71		16.5	16.6	P AG		
				CTDBOUS006	20:19	00:26		43	37.537	7	25.017							9	2	95	1023.6	71		15.9	16.62	BELLE		



GMT 2005 Apr 12 11:08:15

Boussole 28 **05/12/2003** **BOUS031205_01**

BOUS001

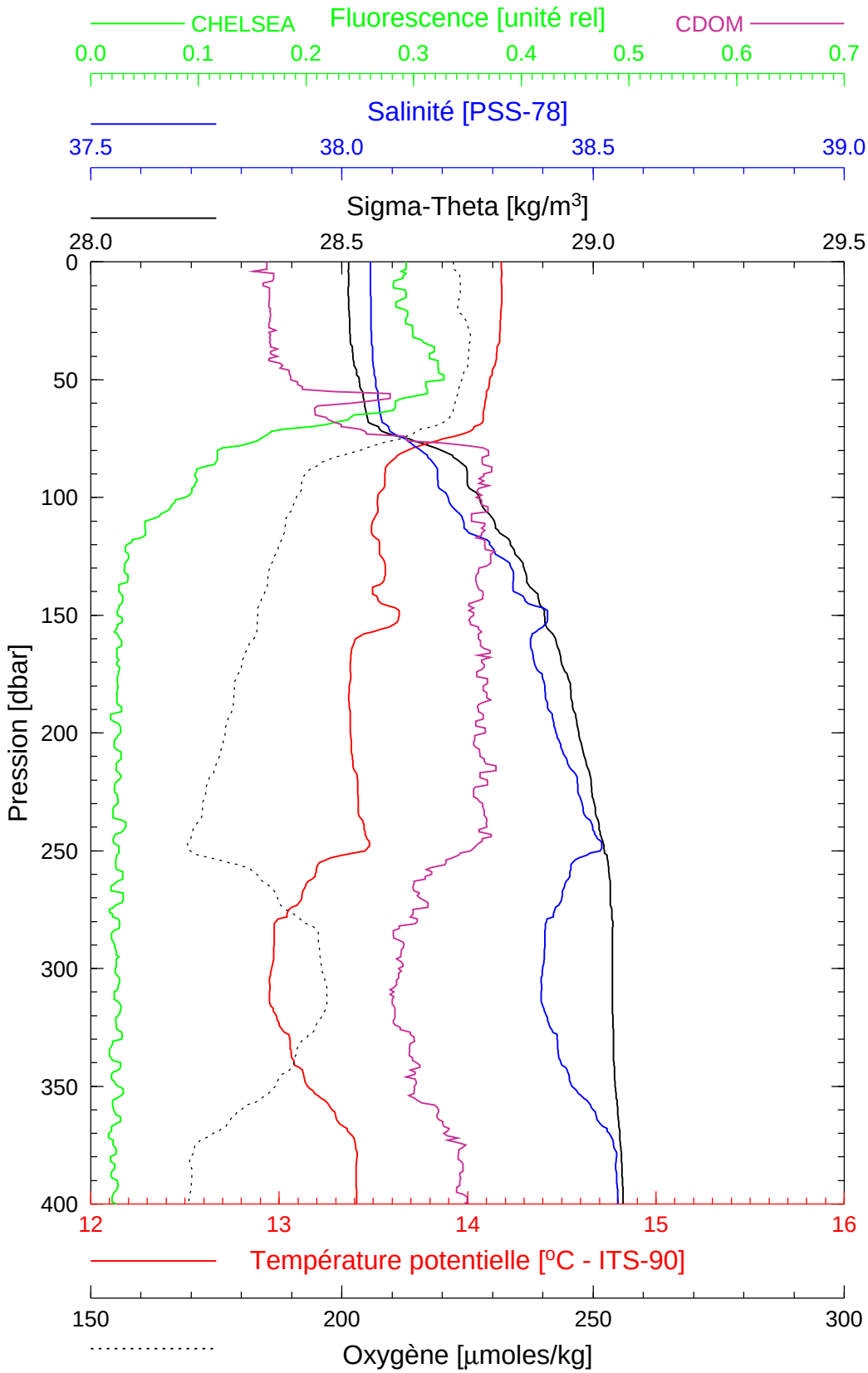


Date *05/12/2003* *Latitude* *43º22.029 N*

Heure déb *15h 01min [TU]* *Longitude* *07º53.851 E*

Boussole 28 **05/12/2003** **BOUS031205_02**

BOUS002

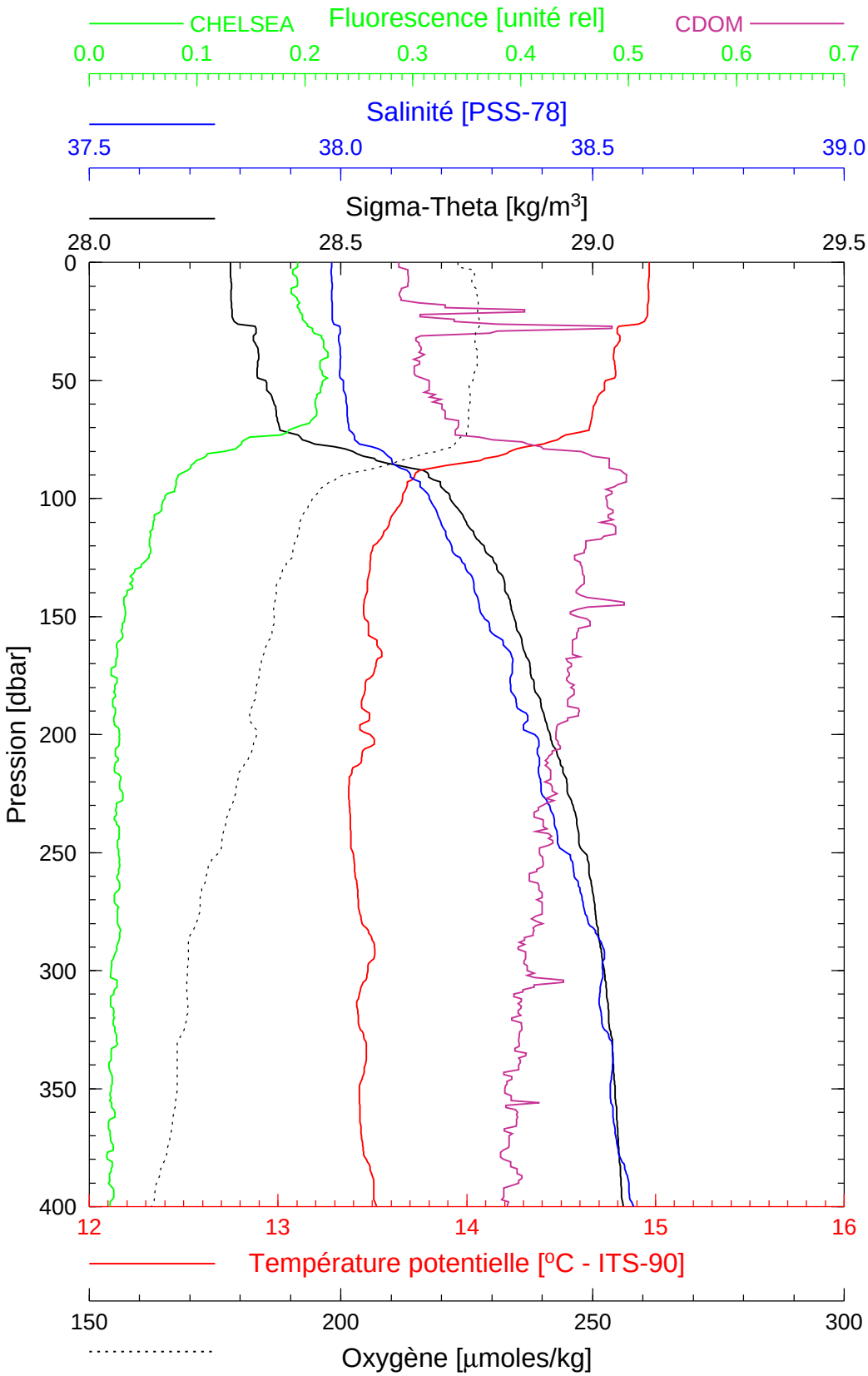


Date *05/12/2003* *Latitude* *43º25.005 N*

Heure déb *16h 26min [TU]* *Longitude* *07º47.895 E*

Boussole 28 **05/12/2003** **BOUS031205_03**

BOUS003

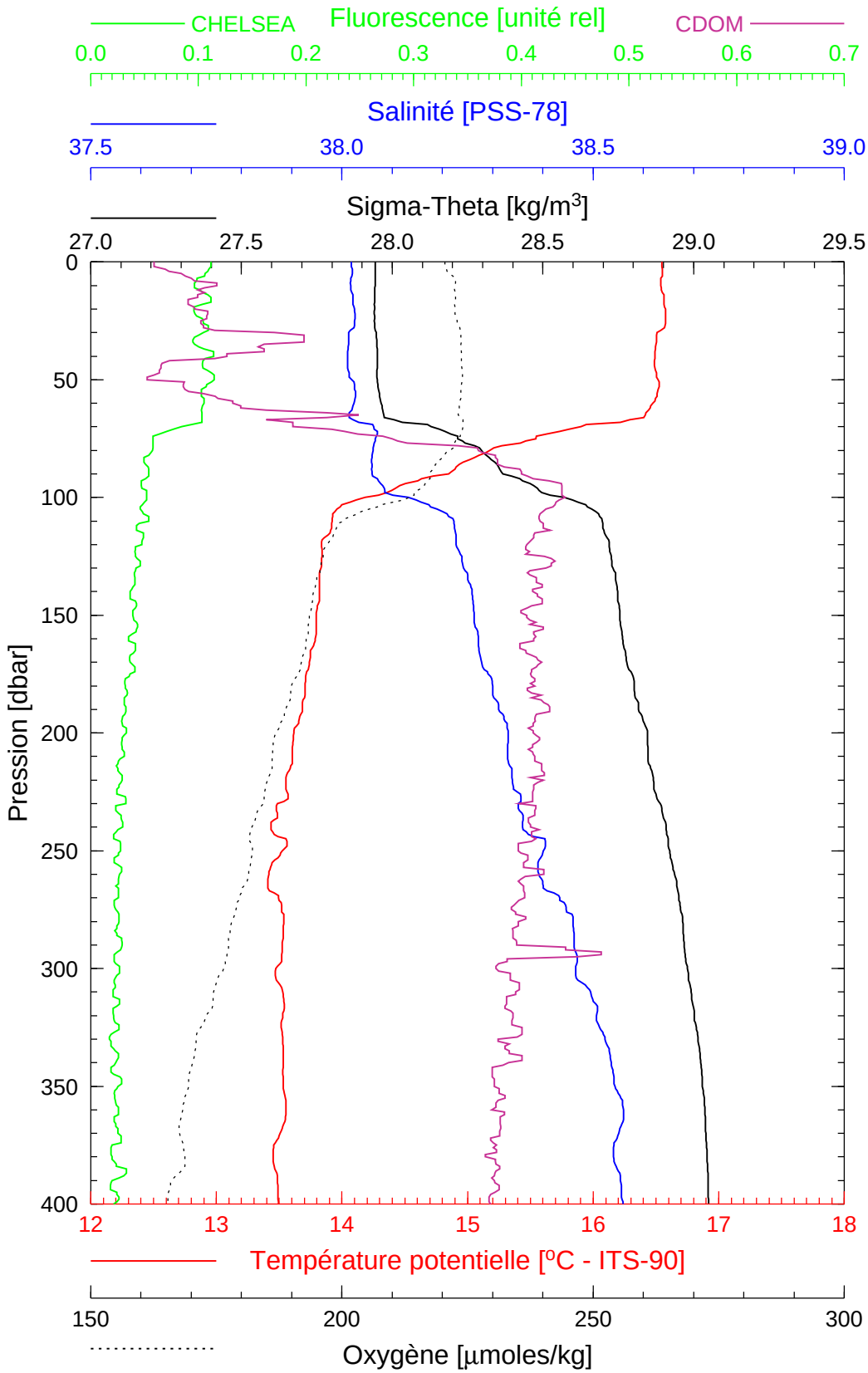


Date *05/12/2003* *Latitude* *43º28.035 N*

Heure déb *17h 22min [TU]* *Longitude* *07º42.485 E*

Boussole 28 **05/12/2003** **BOUS031205_04**

BOUS004

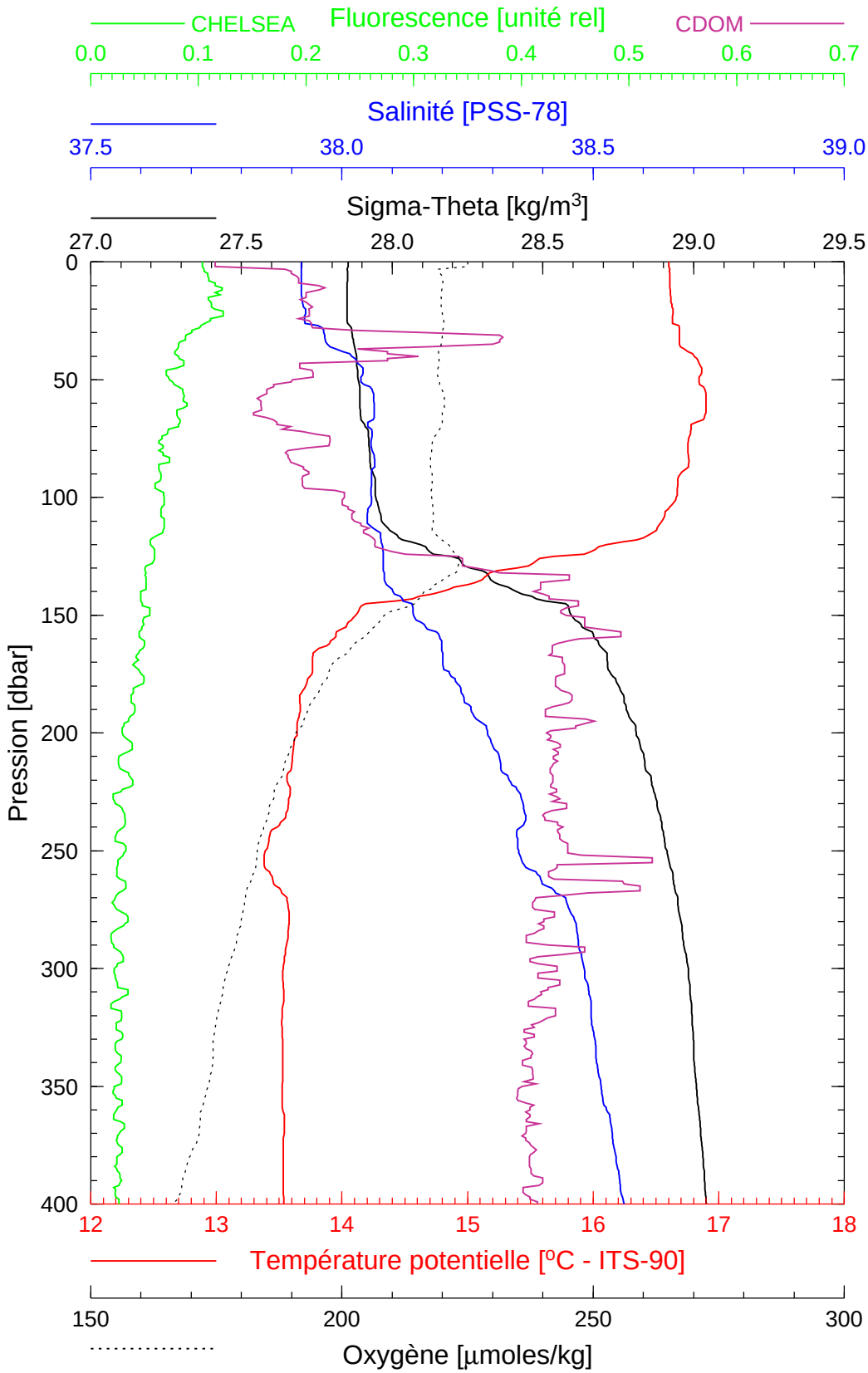


Date *05/12/2003* *Latitude* *43º31.043 N*

Heure déb *18h 19min [TU]* *Longitude* *07º37.010 E*

Boussole 28 **05/12/2003** **BOUS031205_05**

BOUS005

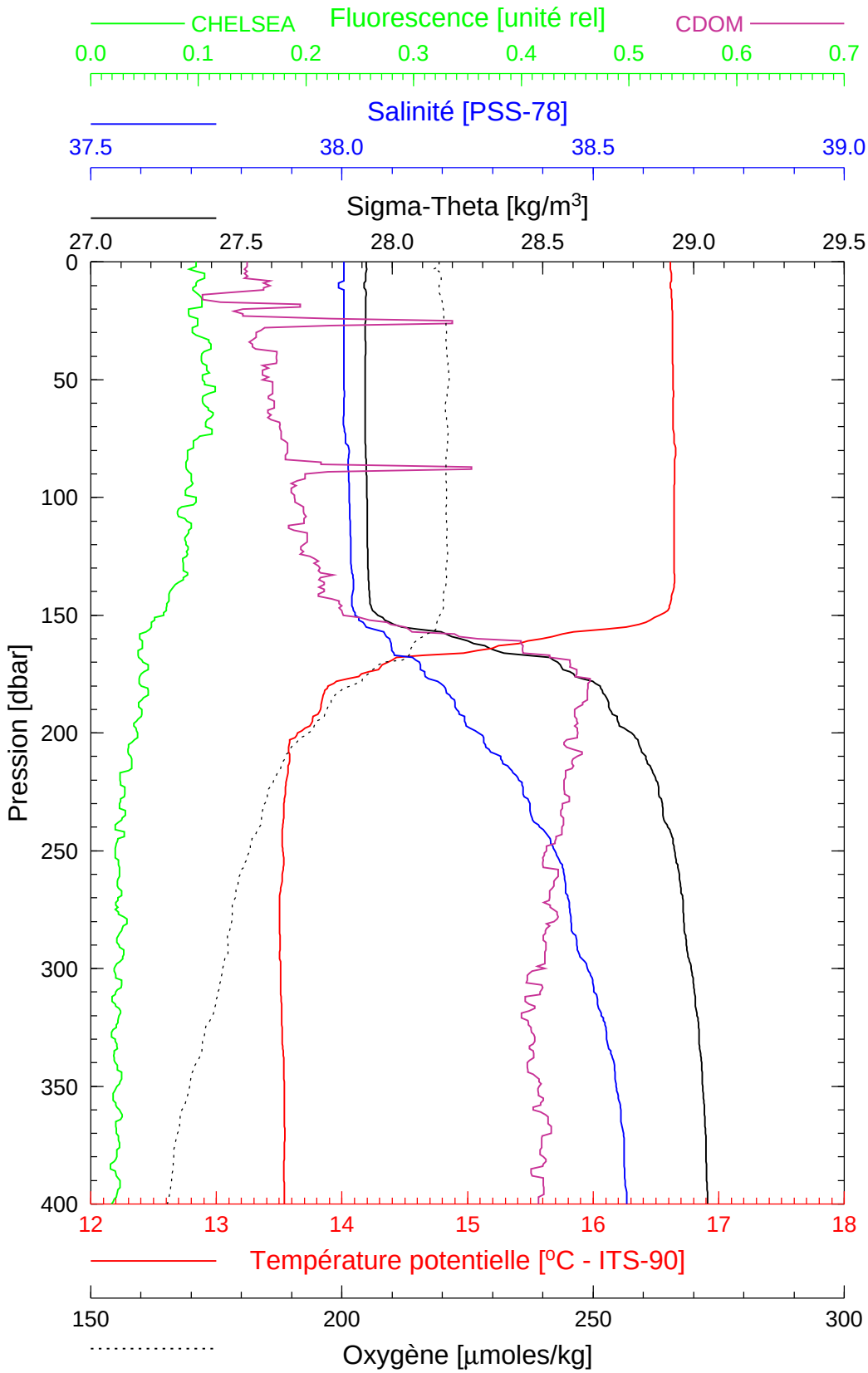


Date *05/12/2003* *Latitude* *43º33.989 N*

Heure déb *19h 21min [TU]* *Longitude* *07º31.069 E*

Boussole 28 **05/12/2003** **BOUS031205_06**

BOUS006



Date *05/12/2003* *Latitude* *43º37.537 N*

Heure déb *20h 19min [TU]* *Longitude* *07º25.017 E*