

BOUSSOLE Monthly Cruise Report

Cruise 20

March 15 – 17, 2003

Duty Chief: Alec Scott (alec.scott@obs-vlfr.fr)

Vessel: R/V Téthys II

(Captain: Alain Stépahn)

Science Personnel: Alec Scott, Dominique Tailliez, Maria Vlachou

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

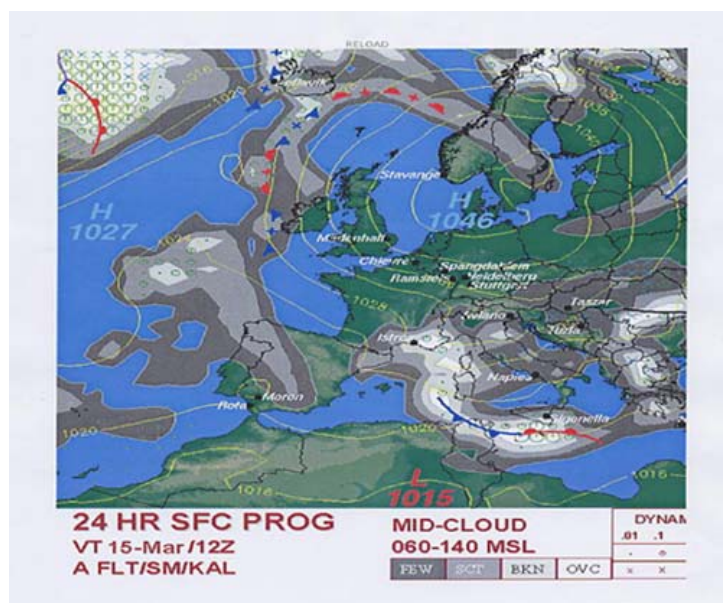


Fig 1. USAF Surface aviation weather forecast image (<http://www.phd.nl/aviation/wx/>) for 15th March, 2003, showing unfavourable conditions.

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.

BOUSSOLE is funded and supported by the following Agencies and Institutions



European Space Agency



Centre National d'Etudes Spatiales, France



National Aeronautics and Space Administration of the USA



Centre National de la Recherche Scientifique, France



Institut National des Sciences de l'Univers, France



Université Pierre & Marie Curie, France



Observatoire Océanologique de Villefranche sur mer, France

Cruise Objectives:

Multiple SPMR profiles were 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. SIMBADA measurements were to be performed consecutively where possible with SPMR if conditions suitably good. If conditions poor, SIMBADA data would be collected and used only to measure atmospheric optical thickness. A floating platform was to be used to support the SPMR Eu sensor approximately 20cm below the surface for approximately one 10 minute session per day where possible. This data would be compared with the near-surface extrapolation methods used in processing. CTD deployments were required before and after the profiling session. In addition to the depth profile from the CTD, CDOM fluorometer, Chl fluorometer and AC9, seawater samples were to be collected and stored in LN2 for further HPLC pigment and AP analysis in the lab. A gimble PAR sensor positioned on the foredeck and operated from the CTD computer served as a light field stability indicator during SPMR profiling

Maria Vlachou participated in the cruise to collect CDOM samples from CTD casts. These were to be used in the calibration of the new CDOM fluorometer through laboratory measurements using two different techniques; spectrophotometer with a 10-cm cuvette and a new instrument: the UltraPath.

This was the first Boussole cruise for Alec Scott as chief scientist. In addition to the routine Boussole objectives, it was also planned for the initiation of a release mechanism for the SPMR surface buoy to allow the SPMR to launch into freefall directly from the buoy.

Cruise Summary:

Strong winds persisted at the Boussole site throughout the 3 days and prevented any work from being carried out there. In addition to the strong winds, Saturday 15th also had very overcast skies and the Tethys II remained at the dock. In contrast, the following two days had perfectly clear skies. The ship travelled to the Boussole site on Sunday 16th and remained there until early afternoon in the hope that the forecast for improvements would prove true. By 13h30, it was decided that conditions were not likely to change and to return to port to recuperate for the final day. In the morning of Monday 17th, the ship departed for a site about 5 miles offshore but east of the Italian border to a point inside the Meris swath. The 08h00 weather forecast predicted possibly workable conditions at Boussole so the ship changed course slightly to go there instead. However, David Antoine telephoned with the Dyfamed buoy wind and wave data indicating more high winds and waves. At that time and location of the ship, conditions were good so it was decided to continue on to Boussole. However, 45 minutes away from the buoy, the ship crossed into the windy region where work was clearly not possible. The ship turned around and headed for an Easterly location closer to shore where a morning and afternoon CTD and SPMR session were possible for Meris and SeaWiFS. Heavy swell made conditions less than ideal for optics work and prevented use of the SPMR buoy but SPMR and CTD profiles were accomplished and samples collected for HPLC and CDOM.

Cruise Report (all times in GMT)

Saturday 15 March 2003

Cruise cancelled due to strong winds, high seas and overcast skies

Sunday 1st March 2003

0600 Depart Port of Nice for Boussole site.

1005 Arrive at Boussole. Sea and meteorological conditions too rough for work. Possibility of winds decreasing later in day so waiting on site for change
1330 Conditions not changing so departed site for Port of Nice
1640 Arrival in Port of Nice

Monday 17 March 2003

0600 Depart port of Nice. Conditions fair. Forecast for strong winds so destination Italian border 5 miles south of coast
0700 Marine weather forecast predicts possibly workable conditions at Boussole site so course change for Boussole site.
0740 Phone call from David Antoine with Dyfamed buoy meteorological update of 27kts max wind. Conditions around ship were fair so continued on to Boussole in hope of fair conditions spreading.
0830 Rapid increase in winds so ship turned to a course east of Italian border closer to the coast where conditions would be more favourable for work and location was with Meris band.
0915 Arrival at suitable location (43°33.599'N 07°45.102'E)
0937 CTD boussole1. 43°33.599'N 07°45.102'E. Max 400m. Bottle depths (m): 10, 5.
1009 CTD back on deck
1015 SPMR deployed for profiling session.
1049 SPMR back on deck and break for lunch
1150 SPMR deployed for profiling session.
1218 SPMR back on deck
1229 CTD boussole2. 43°31.754'N 07°44.829'E. Max 400m. Bottle depths (m): 200,120,100,80,70,60,50,35,20,10,5.
1259 CTD back on deck. Depart for Port of Nice
1630 Arrival in Port of Nice

Satellite Overhead Passes at Boussole Site (43°22'N 7°54'E)

SeaWiFS (times in GMT)

- 15 Mar 2003 12:28 at 54.11 degrees elevation
- 16 Mar 2003 11:31 at 35.22 degrees elevation
- 16 Mar 2003 13:09 at 24.04 degrees elevation
- 17 Mar 2003 12:12 at 67.74 degrees elevation

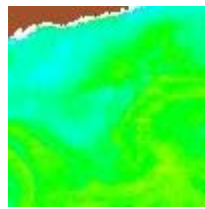
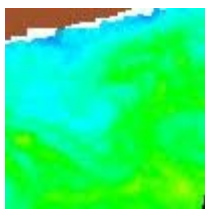
Meris (times in GMT)

- 16 Mar 2003 10:04
- 17 Mar 2003 09:33

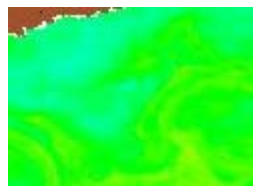
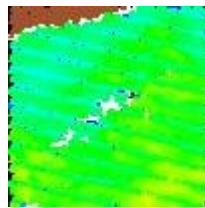
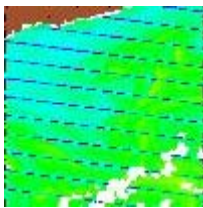
Ligurian Sea Boussole Site Images

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

SeaWiFS

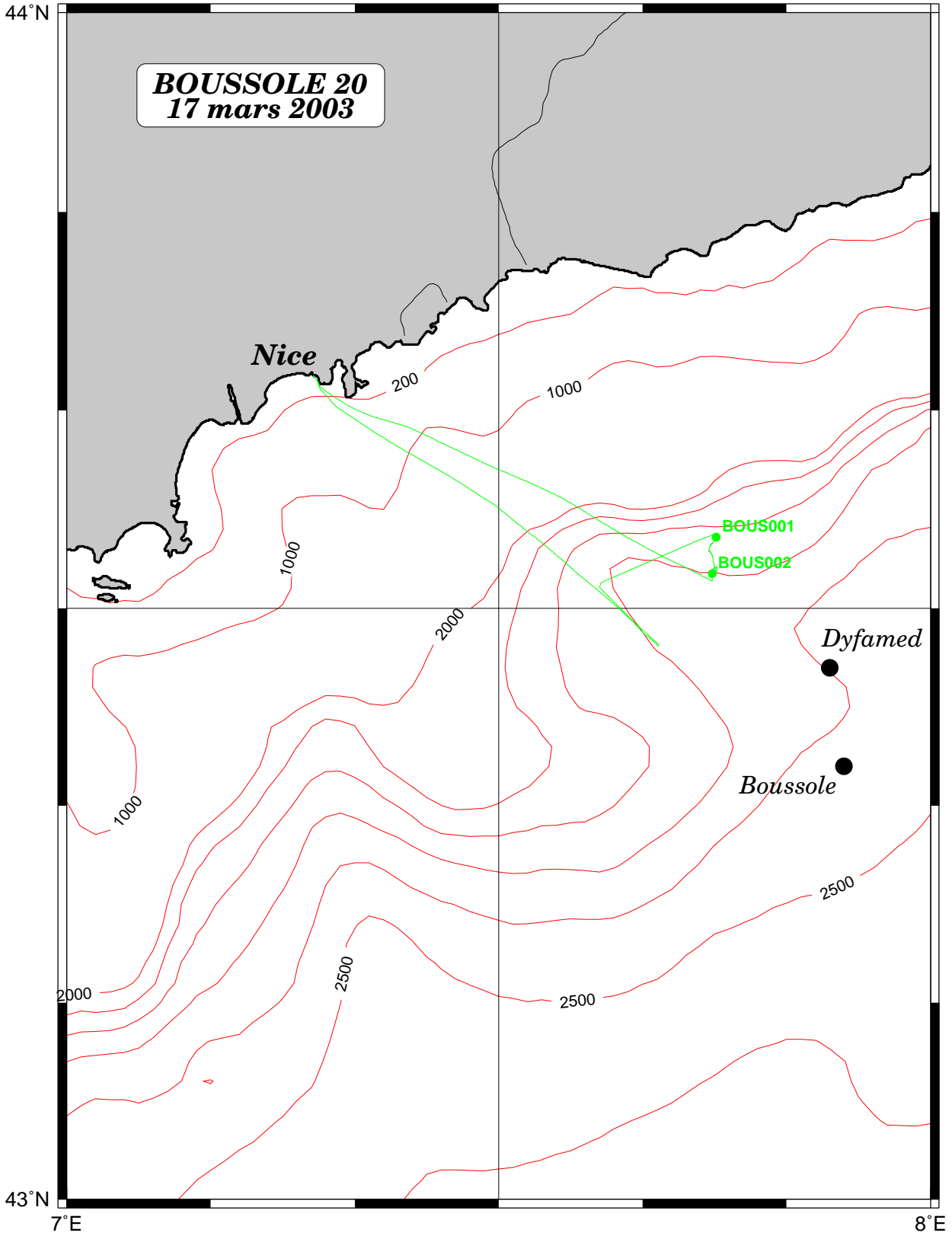


Modis



16th March, 2003

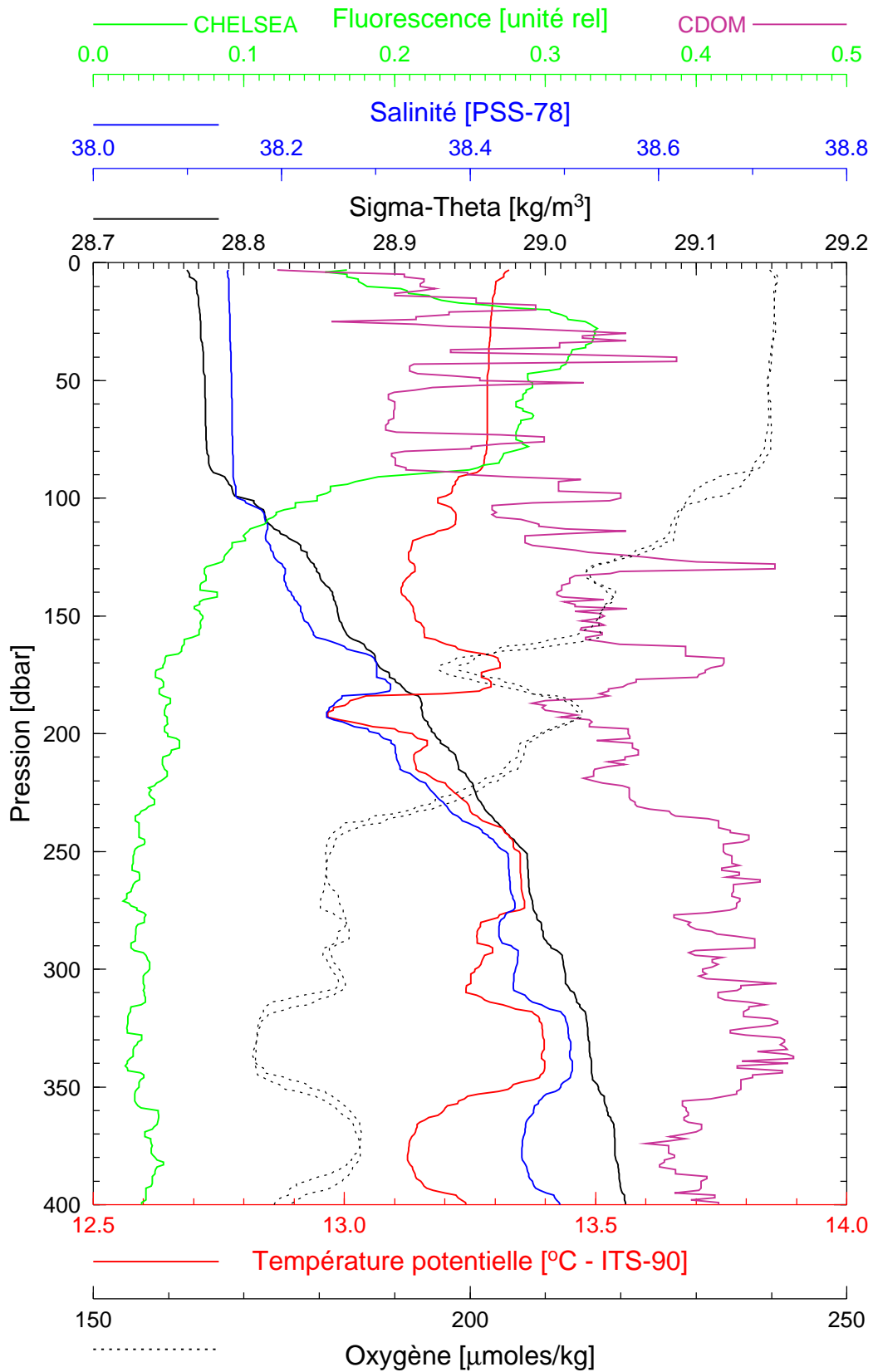
17th March, 2003



Boussole

mars 2003

bous001



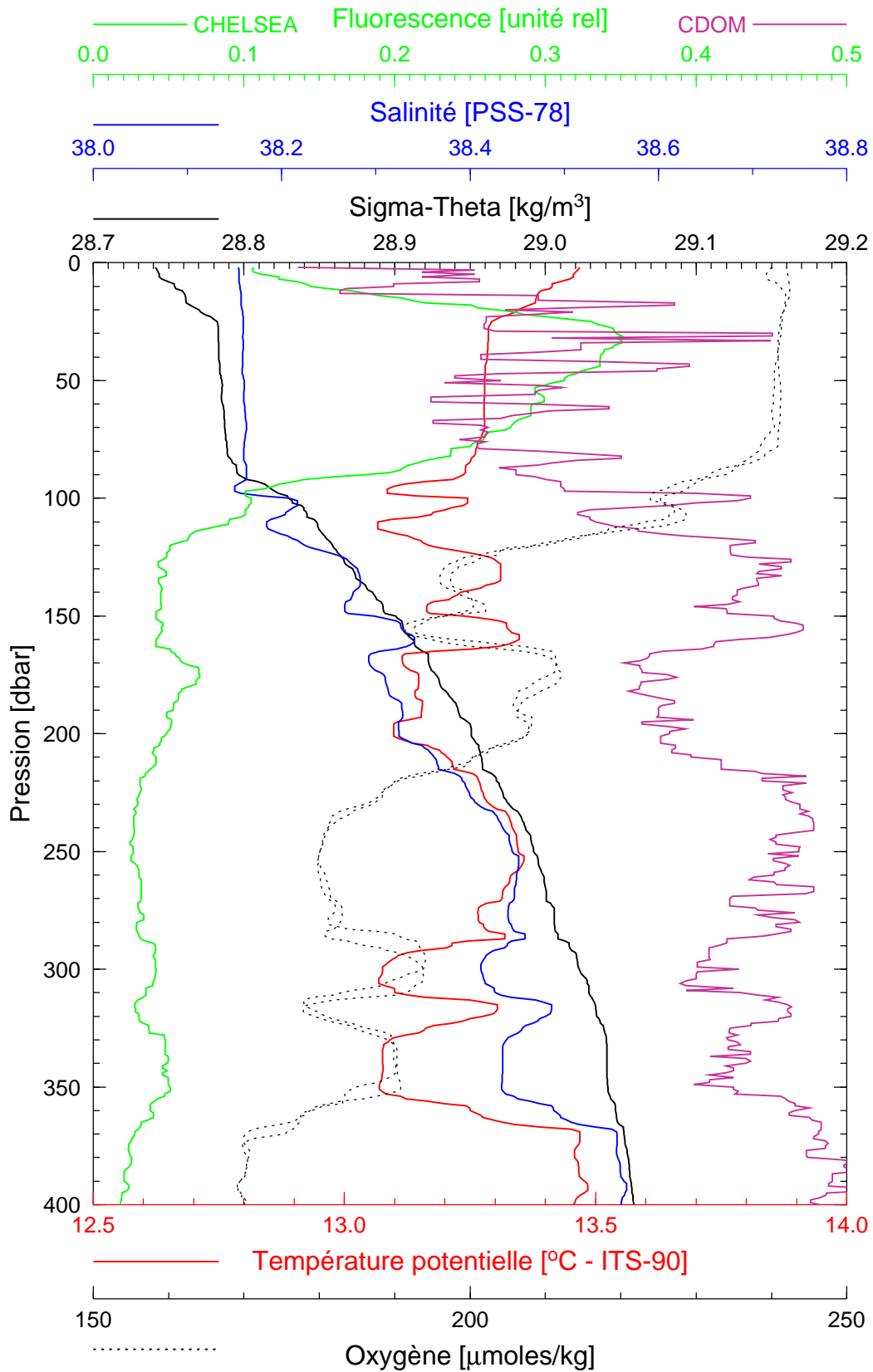
Date 17/03/2003
Heure déb 09h 37min [TU]

Latitude 43°33.599 N
Longitude 07°45.102 E

Boussole

mars 2003

bous002



Date 17/03/2003
Heure déb 12h 29min [TU]

Latitude 43°31.754 N
Longitude 07°44.829 E

BOUSSOLE 20 17 mars 2003

