The BOUSSOLE project technical reports; report # 10-1, issue 1.

# BOUSSOLE Monthly Cruise Report

## Cruises 01 to 18
## July 2001 - November 2002

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Vessel: R/V Téthys II
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Fig 1. Buoy launch with "CASTOR" ship from FOSELEV-MARINE.

**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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## Cruises 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.

Some SIMBADA optical radiometers measurements are to be realized to compare on one hand their above-water reflectance measurements with SPMR measurements, and on another hand to compare their aerosol optical thickness measurements with hand help CIMEL measurements.

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

## Cruises Measurements Summary

A total number of 180 SPMR/SMSR profiles, 42 CTD profiles, 72 hand held SIMBADA optical radiometers measurements and 245 HPLC Pigments measurements were realized during the 30 usable ships days, as detailed in Table 1 and 2.

| Year | Month | Boussole Cruise Number | Usable Ship Days | SPMR Profiles | CTD profiles | SIMBADA measurements | HPLC Pigments |
|---|---|---|---|---|---|---|---|
| 2001 | July | 1 | 3 | 19 | 0 | 8 | 9 |
| | August | 2 | 0 | 21 | 6 | 20 | 0 |
| | September | 3 | 2 | 2 | 0 | 0 | 20 |
| | October | 4 | 1 | 14 | 3 | 0 | 2 |
| | November | 5 | 2 | 11 | 0 | 7 | 9 |
| | December | 6 | 0 | 0 | 0 | 0 | 13 |
| 2002 | January | 7 | 3 | 6 | 5 | 0 | 13 |
| | February | 8 | 0 | 0 | 0 | 0 | 8 |
| | March | 9 | 2 | 11 | 2 | 6 | 9 |
| | April | 10 | 0 | 0 | 0 | 0 | 28 |
| | May | 11 | 3 | 12 | 2 | 0 | 0 |
| | June | 12 | 4 | 24 | 10 | 11 | 31 |
| | July | 13 | 3 | 26 | 5 | 10 | 31 |
| | September | 14 | 3 | 9 | 3 | 7 | 20 |
| | October | 15 | 2 | 11 | 2 | 3 | 23 |
| | November | 16 | 0 | 0 | 0 | 0 | 29 |
| | December | 17 | 2 | 14 | 4 | 0 | ? |
| 2003 | January | 18 | 0 | 0 | 0 | 0 | 0 |
| | **Total** | | **30** | **180** | **42** | **72** | **245** |

Table 1. BOUSSOLE cruises 01 to 18 tally.

| Campaign | Date | Location | Weather and sea conditions | SPMR profiles | CTD | SIMBADA |
|---|---|---|---|---|---|---|
| BOUSSOLE1 | 22/07/2001 | BOUSSOLE site | low wind | 3 | | 1 |
| | 23/07/2001 | BOUSSOLE site | cumulus am, altostratus pm | 9 | | 2 |
| | 24/07/2001 | BOUSSOLE site | cirrostratus | 7 | | 5 |
| BOUSSOLE2 | 01/09/2001 | | no work done | | | |
| | 02/09/2001 | BOUSSOLE site | cirrostratus | 11 | 4 | 12 |
| | 03/09/2001 | BOUSSOLE site | clear sky, small white horses | 10 | 2 | 8 |
| BOUSSOLE3 | 02/10/2001 | | | 2 | | |
| | 03/10/2001 | | no work done (weather ended up being nice) | | | |
| | 04/10/2001 | | no work done | | | |
| BOUSSOLE4 | 03/11/2001 | | milky sky, small swell | 9 | 2 | |
| | 04/11/2001 | | milky sky, small clouds | 5 | 1 | |
| BOUSSOLE5 | 02/12/2001 | | altocumulus, altostratus, medium wind | 4 (SPMR did not work) | | 0 |
| | 03/12/2001 | BOUSSOLE site | few cirrostratus, halo around sun, low wind | 7 (SPMR did not work) | | 7 |
| BOUSSOLE6 | 12-14/12/2001 | .. | no work done | | | |
| BOUSSOLE7 | 21/01/2002 | BOUSSOLE site | cumulus, cirrus (5/8), some white horses. | 1 | 1 | |
| | 22/01/2002 | .. | sea too rough | 0 | 2 | |
| | 23/01/2002 | BOUSSOLE site | overcast sky | 5 | 2 | |
| BOUSSOLE8 | 23-25/02/2002 | .. | no work done | | | |
| BOUSSOLE9 | 22/03/2002 | BOUSSOLE site | blue sky, light cirrus, smooth swell, high density of "salpes and velèles" on sea | 6 | 1 | |
| | 23/03/2002 | .. | no work done | | | |
| | 24/03/2002 | 5 miles south of Nice | blue sky, light wind, 1m swell | 5 | 1 | 6 |
| BOUSSOLE10 | 08-10/04/2002 | .. | no work done | 0 | | |
| BOUSSOLE11 | 20/05/2002 | BOUSSOLE site | blue sky, low swell | 7 | 1 | |
| | 21/05/2002 | BOUSSOLE site | lots of cumulus, calm sea | 5 | 1 | |
| | 22/05/2002 | BOUSSOLE site | rough sea | | | |
| BOUSSOLE12 | 25/06/2002 | BOUSSOLE site | milky sky, cumulus above horizon, very calm sea | 7 | 1 | |
| | 26/06/2002 | South of Nice, 600m depth lines | milky sky, cumulus (4/8) | 2 | 1 +AC9 | 2 |
| | 27/06/2002 | BOUSSOLE site | from very milky to pretty blue sky, no wind, very calm sea | 12 | 6 | 7 |
| | 28/06/2002 | BOUSSOLE site to South of Nice | blue sky (S. Nice), low wind, waves | 3 | 2 | 2 |
| BOUSSOLE13 | 20/07/2002 | BOUSSOLE site | overcast to blue sky, cumulus to cirrus, low wind, calm sea | 11 | 2 | 5 |
| | 21/07/2002 | BOUSSOLE site | perfect blue sky after midday, medium wind, nice sea | 9 | 2 | 3 |
| | 22/07/2002 | BOUSSOLE site | milky to blue sky, low wind, nice to perfect sea surface | 6 | 1 | 2 |
| BOUSSOLE14 | 02/09/2002 | BOUSSOLE site | high swell, white horses, overcast sky, wind | 0 | 1 | |
| | 03/09/2002 | BOUSSOLE site | cirrus and fog (5/8), low wind, nice sea | 8 | 2 | 7 |
| | 04/09/2002 | BOUSSOLE site | overcast, medium wind, swell, white horses | 1 | | |
| BOUSSOLE15 | 05/10/2002 | BOUSSOLE site | few cirrus early morning, cumulus building up slowly up to 7/8, perfect sea | 4 + 1 SPMR at surface | 2 | 3 |
| | 06/10/2002 | BOUSSOLE site | cloudy, lots of cumulus, 50 cm high clapping of waves | 4 + 2 SPMR at surface | | |
| BOUSSOLE16 | 26-28/10/2002 | .. | no work done - campaign canceled due to military activity | 0 | | |
| BOUSSOLE17 | 27/11/2002 | BOUSSOLE site | | 9 | | |
| | 28/11/2002 | BOUSSOLE site | | 3 + 2 SPMR at surface | 2 | 12 |
| | 29/11/2002 | .. | Cancelled due to weather conditions | | | |
| BOUSSOLE18 | 07-10/12/2002 | .. | Cancelled due to weather conditions | 0 | | |

Table 2. BOUSSOLE cruises 01 to 18 activities summary.

# Appendix

boussole 01-18 spmr summary.xls

| Date | Black names | Profile names | Start Time | Duration | Depth max | Latitude (N) | | Longitude (E) | |
|---|---|---|---|---|---|---|---|---|---|
| | (file extension: ".raw" | (file extension: ".raw") | GMT (hour.min) | (min.sec) | (meter) | (Degree) | (Minute) | (Degree) | (Minute) |
| 22/07/2001 | BOU220701black1 | | | 01.00 | | | | | |
| | | BOU220701a | | | 200 | | | | |
| | | BOU220701b | | | | | | | |
| | | BOU220701c | | | 180 | | | | |
| | BOU220701black2 | | | 06.40 | | | | | |
| 23/07/2001 | BOU230701black1 | | | 03.35 | | | | | |
| | BOU230701black2 | | 10.12 | 03.00 | | | | | |
| | | BOU230701a | 10.50 | | 60 | | | | |
| | | BOU230701b | | | 200 | | | | |
| | | BOU230701c | 11.54 | 03.50 | 205 | | | | |
| | | BOU230701d | 12.58 | 04.09 | 216 | 43 | 22.005 | 7 | 54.282 |
| | | BOU230701e | | 03.52 | 209 | | | | |
| | | BOU230701f | 14.37 | | | 43 | 22.743 | 7 | 54.995 |
| | | BOU230701g | 14.57 | 04.08 | 210 | 43 | 22.792 | 7 | 55.276 |
| | | BOU230701h | 15.14 | 03.55 | 210 | 43 | 22.810 | 7 | 55.437 |
| | | BOU230701i | 15.32 | | 201 | 43 | 22.819 | 7 | 55.655 |
| | BOU230701black3 | | 15.46 | 03.00 | | | | | |
| 24/07/2001 | BOU240701black1 | | 8.14 | 01.00 | | | | | |
| | | BOU240701a | 8.24 | 04.14 | 215 | | | | |
| | | BOU240701b | | 03.43 | 205 | | | | |
| | | BOU240701c | 8.59 | 03.55 | 211 | | | | |
| | | BOU240701d | 9.15 | 03.49 | 185 | | | | |
| | BOU240701black2 | | 9.25 | 01.01 | | | | | |
| | BOU240701black3 | | 10.31 | 01.00 | | | | | |
| | BOU240701black4 | | 11.11 | 01.00 | | | | | |
| | BOU240701black5 | | 11.36 | 01.02 | | | | | |
| | | BOU240701e | 11.44 | 04.16 | 235 | | | | |
| | | BOU240701f | 12.04 | 02.37 | 93 | | | | |
| | | BOU240701g | 12.18 | 03.50 | 199 | | | | |
| 02/09/2001 | | | 7.00 | | | | | | |
| | BOU020901black1 | | 8.01 | | | | | | |
| | | BOU020901a | 8.14 | | 208 | | | | |
| | | BOU020901b | 8.31 | 04.00 | 200 | | | | |
| | | BOU020901c | 8.45 | 05.00 | 185 | | | | |
| | | BOU020901d | 9.04 | 05.00 | 174 | | | | |
| | | BOU020901e | 9.21 | 04.00 | 198 | | | | |
| | | BOU020901f | 9.33 | 04.00 | | | | | |
| | | BOU020901g | 9.46 | 05.00 | | | | | |
| | BOU020901black2 | | 10.05 | 01.00 | | | | | |
| | | | 11.20 | | 400 | | | | |
| | BOU020901black3 | | 11.47 | 01.00 | | | | | |
| | BOU020901black4 | | | 01.00 | | | | | |
| | | BOU020901h | 12.25 | | 199 | 43 | 22 | 7 | 52 |
| | BOU020901black5 | | 13.39 | | | | | | |
| | | BOU020901i | 14.24 | 05.00 | | 43 | 22 | 7 | 53 |
| | | BOU020901j | 14.39 | 05.00 | 185 | | | | |
| | | BOU020901k | 14.54 | 05.00 | 208 | 43 | 22 | 7 | 53 |
| | BOU020901black6 | | 15.11 | 01.42 | | | | | |
| | | | 15.50 | | 400 | | | | |
| | | | | | | | | | |
| 03/09/2001 | | | 8.10 | | | | | | |
| | BOU030901black1 | | 8.30 | 02.37 | | | | | |
| | | BOU030901a | 8.56 | 04.08 | 154 | | | | |
| | | BOU030901b | 9.10 | 04.27 | 186 | | | | |

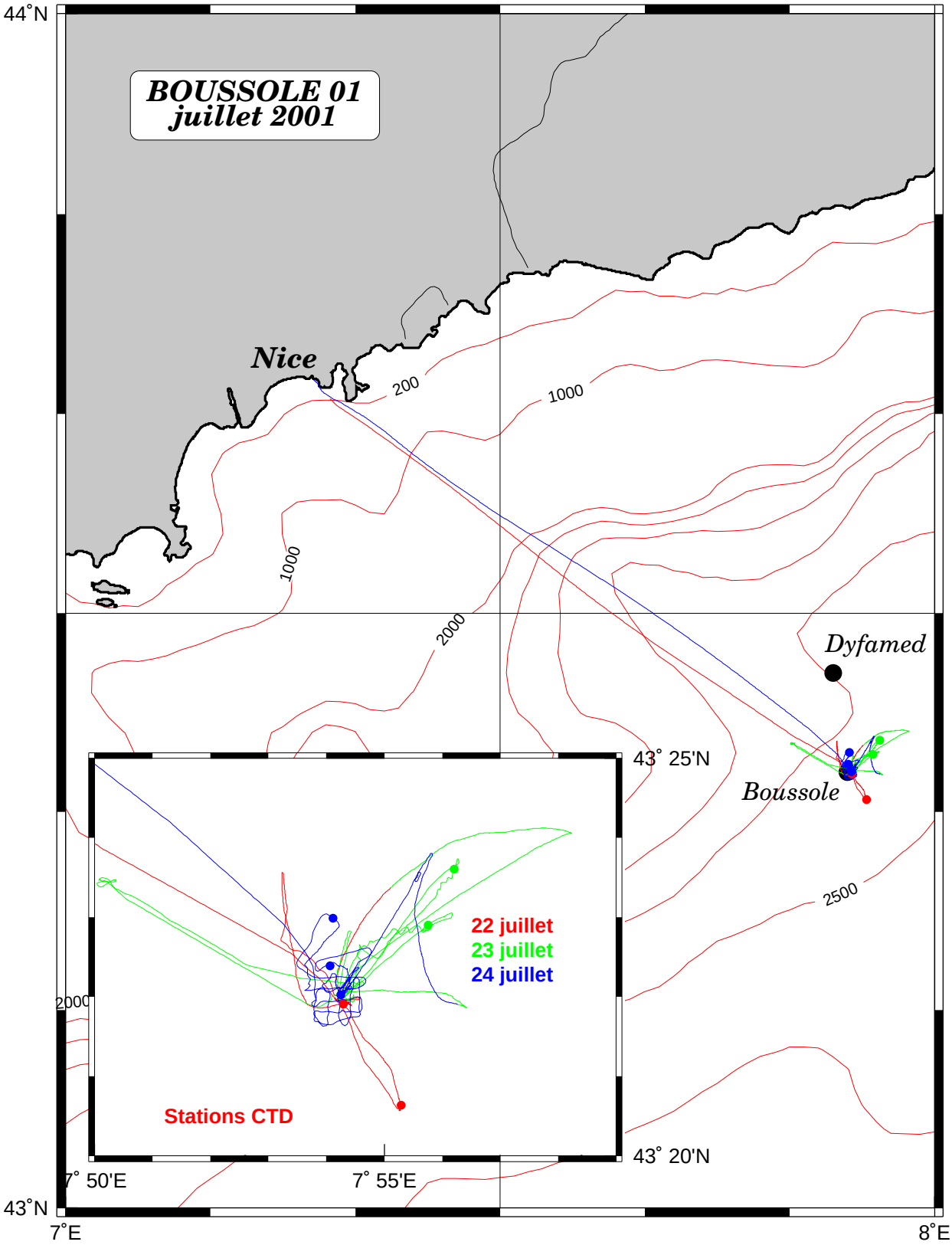
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | BOU030901c | 9.28 | 03.36 | 135 | | | | |
| | | BOU030901d | 9.42 | | 130 | | | | |
| | BOU030901black2 | | 9.55 | 01.00 | | | | | |
| | BOU030901black3 | | 11.43 | 01.00 | | | | | |
| | | BOU030901e | 11.51 | | 133 | | | | |
| | | BOU030901f | 12.02 | | 130 | | | | |
| | | BOU030901g | 12.26 | 03.10 | 130 | | | | |
| | | BOU030901h | 12.38 | 03.02 | 130 | 43 | 22 | 7 | 54 |
| | | BOU030901i | 13.03 | 03.00 | 130 | 43 | 22 | 7 | 53 |
| | | BOU030901j | 13.16 | | | | | | |
| | BOU030901black4 | | 13.37 | 01.06 | | | | | |
| | | | 13.43 | | | | | | |
| 02/10/2001 | BOU021001black1 | | 11.13 | 03.00 | | | | | |
| | | BOU021001a | 11.46 | 03.00 | 122 | | | | |
| | | BOU021001b | 11.54 | 03.00 | 116 | | | | |
| | BOU021001black2 | | 12.04 | 03.00 | | | | | |
| 03/11/2001 | | | | | | | | | |
| | BOU031101black1 | | 11.12 | 03.00 | | | | | |
| | | BOU031101a | 11.24 | 02.19 | 120 | | | | |
| | | BOU031101b | 11.45 | 00.05 | | | | | |
| | | BOU031101c | 11.45 | | | | | | |
| | | BOU031101d | 11.52 | 02.04 | 115 | | | | |
| | | BOU031101e | 12.09 | 02.38 | 119 | | | | |
| | | BOU031101f | 12.17 | 02.13 | 122 | | | | |
| | | BOU031101g | 12.27 | 02.12 | 125 | | | | |
| | | BOU031101h | 12.43 | 02.51 | 155 | | | | |
| | | BOU031101i | 12.52 | 02.09 | 120 | | | | |
| | | | | | | | | | |
| 04/11/2001 | BOU041101black1 | | 11.11 | 03.00 | | | | | |
| | | BOU041101a | 11.30 | 02.08 | 122 | | | | |
| | | BOU041101b | 11.40 | 02.15 | 120 | | | | |
| | | BOU041101c | 11.50 | 02.31 | 121 | | | | |
| | | BOU041101d | 12.00 | 02.17 | 120 | | | | |
| | | BOU041101e | 12.57 | 02.18 | 120 | | | | |
| | BOU041101black2 | | 13.10 | 03.00 | | | | | |
| | | | | | | | | | |
| 02/12/2001 | BOU021201black1 | | 11.04 | 03.00 | | | | | |
| | | BOU021201a | 12.00 | 04.30 | | | | | |
| | | BOU021201b | 12.14 | 01.45 | | | | | |
| | | BOU021201c | 12.20 | 04.02 | | | | | |
| | | BOU021201d | 12.30 | 03.03 | | | | | |
| | BOU021201black2 | | 12.36 | 03.00 | | | | | |
| 03/12/2001 | BOU031201black1 | | 10.08 | 03.00 | | | | | |
| | BOU031201black2 | | 10.52 | 03.00 | | | | | |
| | | BOU031201a | 11.07 | 03.00 | | 43 | 22.900 | 7 | 52.490 |
| | | BOU031201b | 11.16 | 03.02 | | 43 | 22.870 | 7 | 52.400 |
| | | BOU031201c | | | | | | | |
| | | BOU031201d | 11.38 | 03.38 | | 43 | 22.980 | 7 | 51.770 |
| | | BOU031201e | 11.46 | 03.19 | | 43 | 22.980 | 7 | 51.660 |
| | | BOU031201f | 11.54 | 03.11 | | 43 | 23.000 | 7 | 51.570 |
| | | BOU031201g | 12.01 | 02.45 | | 43 | 22.990 | 7 | 51.460 |
| | BOU031201black3 | | 12.11 | 03.00 | | | | | |
| 21/01/2002 | BOU210102black1 | | 13.13 | 03.00 | | | | | |
| | | BOU210102a | 13.29 | 02.07 | 102 | | | | |
| | BOU210102black2 | | 13.54 | 01.59 | 99 | | | | |
| | | | 14.15 | | 1000 | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 22/01/2002 | | | 11.06 | | 400 | 43 | 22 | 7 | 53 |
| | BOU220102black1 | | 11.07 | 03.00 | | | | | |
| | | | 11.24 | | | | | | |
| 23/01/2002 | | | 10.56 | | | 43 | 22 | 7 | 53 |
| | BOU230102black1 | | 10.56 | 03.00 | | | | | |
| | | BOU230102a | 11.29 | 02.33 | 112 | | | | |
| | | BOU230102b | 11.49 | 01.47 | 85 | | | | |
| | | BOU230102c | 12.06 | 01.53 | 81 | | | | |
| | | BOU230102d | 12.27 | 01.52 | 76 | 43 | 22.775 | 7 | 54.814 |
| | | BOU230102e | 12.46 | 01.26 | 69 | 43 | 22.903 | 7 | 54.969 |
| | BOU230102black2 | | 12.46 | 01.17 | 56 | | | | |
| | | | 13.10 | | | | | | |
| 22/03/2002 | | | 9.54 | | 400 | 43 | 22.037 | 7 | 54.105 |
| | BOU220302black1 | | 11.21 | 03.00 | | | | | |
| | | BOU220302a | 11.39 | 01.53 | 100 | 43 | 22.061 | 7 | 53.946 |
| | | BOU220302b | 11.49 | 02.04 | 100 | 43 | 22.136 | 7 | 53.832 |
| | | BOU220302c | 12.01 | 01.59 | 105 | 43 | 22.181 | 7 | 53.778 |
| | BOU220302black2 | | 12.07 | 03.00 | | 43 | 21.923 | 7 | 54.131 |
| | | BOU220302d | 13.28 | 01.57 | 100 | 43 | 22.065 | 7 | 54.003 |
| | | BOU220302e | 13.45 | 02.43 | 100 | 43 | 22.245 | 7 | 53.766 |
| | BOU220302black3 | | 13.55 | 03.00 | | | | | |
| | | BOU220302f | 14.48 | 02.04 | 100 | 43 | 22.399 | 7 | 54.487 |
| 23/03/2002 | | | | | | | | | |
| 24/03/2002 | | | 13.00 | | | | | | |
| | BOU240302black1 | | 13.15 | 03.00 | | | | | |
| | | BOU240302a | 13.33 | 02.10 | 100 | 43 | 36.869 | 7 | 19.542 |
| | | BOU240302b | 13.40 | 02.11 | 100 | 43 | 36.935 | 7 | 19.469 |
| | | BOU240302c | 13.48 | 02.05 | 100 | 43 | 36.044 | 7 | 19.357 |
| | | BOU240302d | 14.00 | 02.40 | 100 | 43 | 37.199 | 7 | 19.262 |
| | BOU240302black2 | | 14.31 | 03.00 | | | | | |
| | | BOU240302e | 14.40 | 02.11 | 100 | 43 | 36.582 | 7 | 19.873 |
| 20/05/2002 | BOU200502black1 | | 7.11 | 03.00 | | | | | |
| | | | | | | | | | |
| | | | 9.20 | | | | | | |
| | BOU200502black2 | | 11.10 | 03.00 | 400 | | | | |
| | | BOU200502a | 11.18 | 02.37 | 125 | | | | |
| | | BOU200502b | 11.30 | 02.44 | 135 | | | | |
| | | BOU200502c | 12.02 | 02.31 | 122 | 43 | 22.204 | 7 | 53.736 |
| | | BOU200502d | 12.15 | 03.08 | 120 | 43 | 22.363 | 7 | 53.568 |
| | | BOU200502e | 13.00 | 02.50 | 120 | | | | |
| | | | | | | | | | |
| | | BOU200502f | 14.00 | 02.57 | 120 | 43 | 22.246 | 7 | 54.154 |
| | | BOU200502g | 15.00 | 02.38 | 120 | | | | |
| 21/05/2002 | | | | | | | | | |
| | BOU210502black1 | | 8.22 | 03.00 | | | | | |
| | | BOU210502a | 9.00 | 02.19 | 121 | 43 | 22.021 | 7 | 53.841 |
| | | BOU210502b | | | | 43 | 22.121 | 7 | 54.001 |
| | | BOU210502c | 10.00 | 02.22 | 120 | 43 | 22.093 | 7 | 53.547 |
| | BOU210502black2 | | 10.09 | 03.00 | | | | | |
| | BOU210502black3 | | 11.21 | 03.00 | | | | | |
| | | BOU210502d | 11.30 | 02.27 | 120 | 43 | 22.298 | 7 | 54.033 |
| | | BOU210502e | 12.00 | 02.21 | 126 | 43 | 22.167 | 7 | 53.969 |
| | | BOU210502f | 12.30 | 02.26 | 120 | 43 | 22.275 | 7 | 53.956 |
| | BOU210502black4 | | 12.43 | | | | | | |
| | | | 13.00 | | 400 | | | | |
| 22/05/2002 | | | 9.55 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | BOU270602B | 8.55 | 03.26 | 150 | 43 | 22.268 | 7 | 52.783 |
| | | BOU270602C | 9.22 | 03.00 | 150 | 43 | 21.961 | 7 | 53.917 |
| | | BOU270602D | 9.46 | 02.51 | 150 | 43 | 22.094 | 7 | 53.822 |
| | BOU270602black2 | | 9.55 | 03.00 | | | | | |
| | | BOU270602E | 11.15 | 02.56 | 150 | 43 | 22.920 | 7 | 53.351 |
| | | | 11.30 | | | | | | |
| | | BOU270602F | 12.00 | 03.02 | 150 | 43 | 23.362 | 7 | 53.315 |
| | | | 12.25 | | 5 | 43 | 22.341 | 7 | 53.529 |
| | | | 12.30 | | | | | | |
| | | | 12.47 | | 5 | 43 | 21.777 | 7 | 54.074 |
| | | | 13.05 | | 5 | 43 | 22.391 | 7 | 54.404 |
| | | BOU270602G | 13.12 | 03.15 | 154 | 43 | 22.500 | 7 | 54.247 |
| | | BOU270602H | 14.05 | 02.59 | 150 | 43 | 23.120 | 7 | 54.812 |
| | | BOU270602I | 14.51 | 03.10 | 150 | 43 | 23.614 | 7 | 55.494 |
| | | BOU270602J | 15.37 | 03.02 | 150 | 43 | 22.093 | 7 | 54.495 |
| | | BOU270602K | 16.11 | 02.59 | 150 | 43 | 21.989 | 7 | 54.053 |
| | | | 16.24 | | | 43 | 22.011 | 7 | 54.214 |
| | | BOU270602L | 16.48 | 02.54 | 152 | 43 | 21.995 | 7 | 54.533 |
| | BOU270602black3 | | | | | | | | |
| 28/06/2002 | | BOU280602A | 5.23 | 02.25 | 130 | 43 | 22.508 | 7 | 54.244 |
| | | | 5.40 | | 400 | | | | |
| | | BOU280602B | 9.03 | 03.01 | 160 | 43 | 34.985 | 7 | 31.781 |
| | | | 9.15 | | 400 | | | | |
| | | BOU280602C | 10.06 | 03.07 | 163 | 43 | 34.624 | 7 | 30.337 |
| | BOU270602black3 | | 10.25 | 03.00 | | | | | |
| 20/07/2002 | BOU200702black1 | | 8.36 | 03.00 | | | | | |
| | | BOU200702A | 8.48 | 04.00 | 193 | 43 | 21.913 | 7 | 54.198 |
| | | BOU200702B | 9.22 | 04.25 | 182 | 43 | 21.783 | 7 | 54.371 |
| | | BOU200702C | 9.39 | 03.42 | 170 | 43 | 21.656 | 7 | 54.34 |
| | | | 10.54 | 50.00 | 400 | 43 | 22.038 | 7 | 54.232 |
| | BOU200702black2 | | 11.44 | 03.00 | | | | | |
| | | BOU200702D | 11.59 | 05.54 | 190 | 43 | 21.954 | 7 | 53.55 |
| | | BOU200702E | 12.14 | 03.32 | 181 | 43 | 22.012 | 7 | 53.42 |
| | | BOU200702F | 12.29 | 03.47 | 172 | 43 | 22.041 | 7 | 53.342 |
| | | BOU200702G | 13.07 | 03.38 | 170 | 43 | 22.06 | 7 | 53.48 |
| | | BOU200702H | 14.19 | 03.00 | 170 | 43 | 22.027 | 7 | 53.999 |
| | | BOU200702I | 14.30 | 03.34 | 161 | 43 | 22.101 | 7 | 53.899 |
| | | BOU200702J | 15.06 | 03.50 | 170 | 43 | 22.129 | 7 | 53.898 |
| | | | 15.39 | | 400 | 43 | 22.059 | 7 | 53.882 |
| | | BOU200702K | 16.32 | 03.02 | 155 | 43 | 22.037 | 7 | 53.848 |
| | BOU200702black3 | | 16.46 | 03.00 | | | | | |
| | | | 17.00 | | | | | | |
| 21/07/2002 | | | 9.09 | 27.00 | 400 | 43 | 22.006 | 7 | 54.071 |
| | BOU210702black1 | | 9.40 | 03.00 | | | | | |
| | | BOU210702A | 9.52 | 03.11 | 150 | 43 | 21.814 | 7 | 53.89 |
| | | BOU210702B | 11.41 | | | | | | |
| | | BOU210702C | 11.49 | | 170 | 43 | 22.471 | 7 | 53.48 |
| | | BOU210702D | 12.29 | 03.47 | 169 | 43 | 21.985 | 7 | 54.31 |
| | | BOU210702E | 12.41 | 03.53 | 170 | 43 | 22.133 | 7 | 54.354 |
| | | BOU210702F | 14.13 | 03.26 | 180 | 43 | 22.19 | 7 | 54.019 |
| | | BOU210702G | 14.23 | 03.39 | 180 | 43 | 22.281 | 7 | 54.125 |
| | | BOU210702H | 15.24 | 03.16 | 170 | 43 | 22.604 | 7 | 54.98 |
| | | | 15.38 | 30.00 | 400 | 43 | 22.611 | 7 | 55.222 |
| | | BOU210702I | 16.17 | 03.38 | 185 | 43 | 22.898 | 7 | 55.646 |
| | BOU210702black2 | | 16.49 | 03.00 | | | | | |
| 22/07/2002 | | BOU220702A | 5.12 | 02.00 | 100 | 43 | 22.027 | 7 | 54.313 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | BOU220702B | 6.22 | 02.55 | 150 | 43 | 21.708 | 7 | 54.295 |
| | | BOU220702C | 7.29 | 03.19 | 171 | 43 | 21.789 | 7 | 54.104 |
| | | BOU220702D | 8.10 | 05.09 | 190 | 43 | 21.764 | 7 | 54.091 |
| | | | 8.40 | 30.00 | 400 | 43 | 21.629 | 7 | 54.269 |
| | | BOU220702E | 9.15 | 03.29 | 170 | 43 | 21.298 | 7 | 54.404 |
| | | BOU220702F | 11.19 | 04.03 | 190 | 43 | 21.442 | 7 | 53.688 |
| 02/09/2002 | | | 15.27 | | 400 | 43 | 21.852 | 7 | 53.674 |
| | | | 17.00 | | | | | | |
| 03/09/2002 | | | 7.04 | | 400 | 43 | 22.402 | 7 | 53.152 |
| | BOU030902black1 | | 7.20 | 03.00 | | | | | |
| | | BOU030902A | 7.48 | | 353 | | | | |
| | | BOU030902B | 8.17 | 03.33 | 190 | 43 | 22.06 | 7 | 52.636 |
| | | BOU030902C | 9.20 | 03.34 | 190 | 43 | 21.86 | 7 | 53.963 |
| | | BOU030902D | 10.01 | 03.37 | 190 | 43 | 21.85 | 7 | 54.084 |
| | | BOU030902E | 11.22 | 03.36 | 190 | 43 | 21.97 | 7 | 53.966 |
| | BOU030902black2 | | 11.40 | 03.00 | | | | | |
| | | BOU030902F | 13.06 | 03.36 | 190 | 43 | 22.029 | 7 | 53.801 |
| | | BOU030902G | 14.07 | 03.35 | 190 | 43 | 22.388 | 7 | 53.532 |
| | | | 14.33 | 23.00 | 400 | 43 | 22.263 | 7 | 53.647 |
| | | BOU030902H | 15.40 | 03.27 | 190 | 43 | 22.116 | 7 | 53.988 |
| 04/09/2002 | | BOU040902A | 8.53 | 02.04 | 100 | 43 | 21.695 | 7 | 53.694 |
| 05/10/2002 | | | 8.44 | 15.00 | 400 | 43 | 21.986 | 7 | 54.249 |
| | bou051002black1 | | 9.24 | 03.00 | | | | | |
| | | bou051002a | 9.35 | | 150 | 43 | 21.907 | 7 | 53.969 |
| | | bou051002b | 9.50 | 03.02 | 150 | 43 | 21.804 | 7 | 53.896 |
| | | bou051002c | 10.01 | 02.56 | 150 | 43 | 21.764 | 7 | 53.812 |
| | bou051002black2 | | 10.11 | 03.00 | | | | | |
| | | bou051002ref_at_sea | 11.28 | 08.40 | surface | 43 | 22.034 | 7 | 54.183 |
| | bou051002black3 | | 11.57 | 03.08 | | | | | |
| | | bou051002d | 12.07 | 02.30 | 122 | 43 | 21.998 | 7 | 54.087 |
| | | | 12.35 | | | 43 | 21.985 | 7 | 54.147 |
| 06/10/2002 | bou061002black1 | | 11.19 | 03.00 | | | | | |
| | | bou061002spmratsurface | 11.28 | 07.27 | surface | 43 | 22.093 | 7 | 54.452 |
| | | bou061002c | 11.55 | 02.55 | 150 | 43 | 22.202 | 7 | 54.393 |
| | | bou061002d | 12.06 | 02.56 | 160 | 43 | 22.257 | 7 | 54.357 |
| | | bou061002e | 12.17 | 02.58 | 170 | 43 | 22.339 | 7 | 54.266 |
| | bou061002black2 | | 12.30 | 03.15 | | | | | |
| | | bou061002f | 12.44 | 03.25 | 170 | 43 | 22.08 | 7 | 53.933 |
| | bou061002black3 | | 12.58 | 11.00 | | | | | |
| | | bou061002spmratsurface2 | 13.15 | 03.00 | surface | 43 | 22.205 | 7 | 53.915 |
| 27/11/2002 | | | 8.44 | 15.00 | 400 | 43 | 21.986 | 7 | 54.249 |
| | bou271102black1 | | 10.45 | 03.00 | | | | | |
| | | bou271102a | 11.01 | | 130 | 43 | 22.275 | 7 | 54.073 |
| | | bou271102b | 11.17 | 02.47 | 130 | 43 | 22.163 | 7 | 53.632 |
| | | bou271102c | 11.25 | 03.00 | 130 | 43 | 22.125 | 7 | 53.309 |
| | | bou271102d | 11.36 | 03.11 | 120 | 43 | 22.04 | 7 | 52.907 |
| | | bou271102e | 11.44 | 03.34 | 110 | 43 | 21.978 | 7 | 52.521 |
| | | bou271102f | 11.57 | 12.06 | 110 | 43 | 21.939 | 7 | 52.132 |
| | bou271102black2 | | 12.06 | 03.00 | | | | | |
| | bou271102black3 | | 13.53 | 03.00 | | | | | |
| | | bou271102g | 14.00 | 02.50 | 110 | 43 | 22.213 | 7 | 54.09 |
| | | bou271102h | 14.09 | 04.29 | 100 | | | | |
| | | bou271102i | 14.44 | 02.35 | 120 | 43 | 22.305 | 7 | 53.017 |
| | bou271102black4 | | 14.55 | 03.00 | | | | | |
| 28/11/2003 | | | | | | | | | |
| | bou281102black1 | | 9.56 | 03.00 | | | | | |

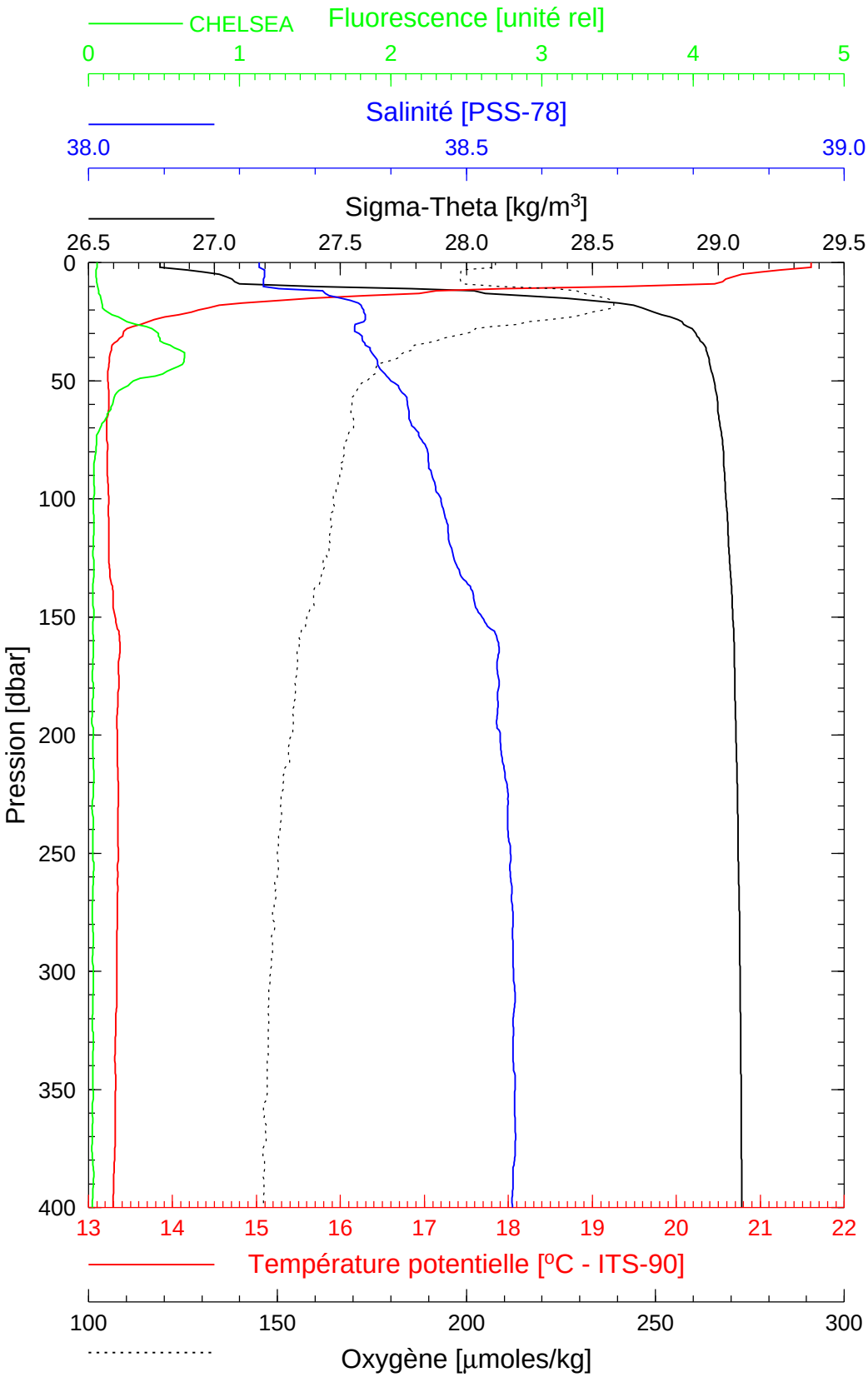
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | bou281102spmratsurface | 10.05 | 05.00 | surface | 43 | 22.074 | 7 | 53.749 |
| | | bou281102a | 10.20 | 02.27 | 115 | 43 | 22.122 | 7 | 53.387 |
| | | bou281102b | 10.26 | 02.09 | 110 | 43 | 22.133 | 7 | 53.27 |
| | | bou281102c | 10.34 | 03.03 | 95 | 43 | 22.157 | 7 | 53.162 |
| | | bou281102spmratsurface2 | 10.48 | 05.00 | surface | 43 | 22.254 | 7 | 52.877 |
| | bou281102black2 | | 10.57 | 03.00 | | | | | |




GMT 2003 Aug 17 22:47:41

**Boussole 01** **22/07/2001** **BOUS010722_01**

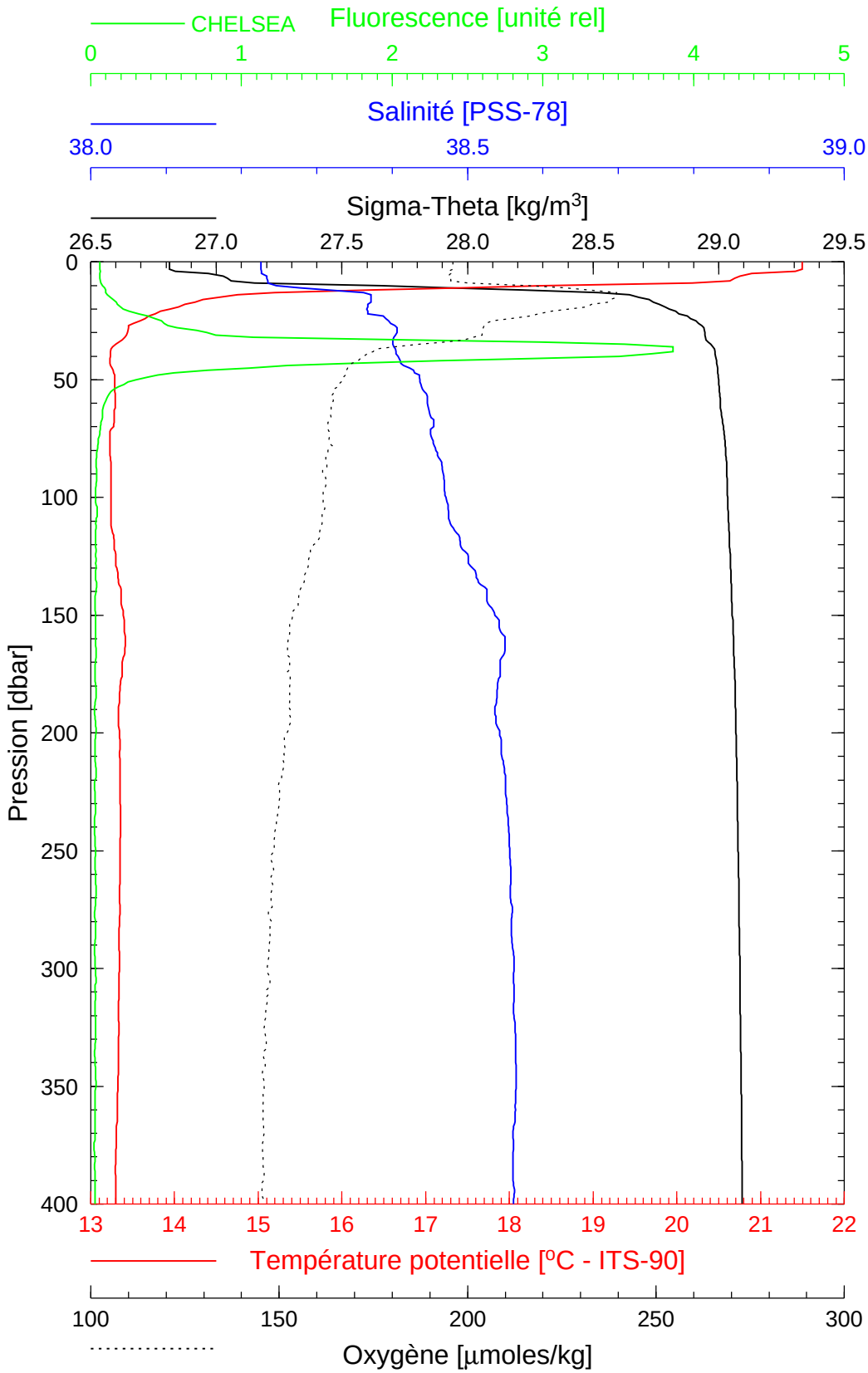
*BOUS001*




| | | | |
|---|---|---|---|
| *Date* | *22/07/2001* | *Latitude* | *43º21.908 N* |
| *Heure déb* | *13h 36min [TU]* | *Longitude* | *07º54.293 E* |

**Boussole 01** **22/07/2001** **BOUS010722_02**

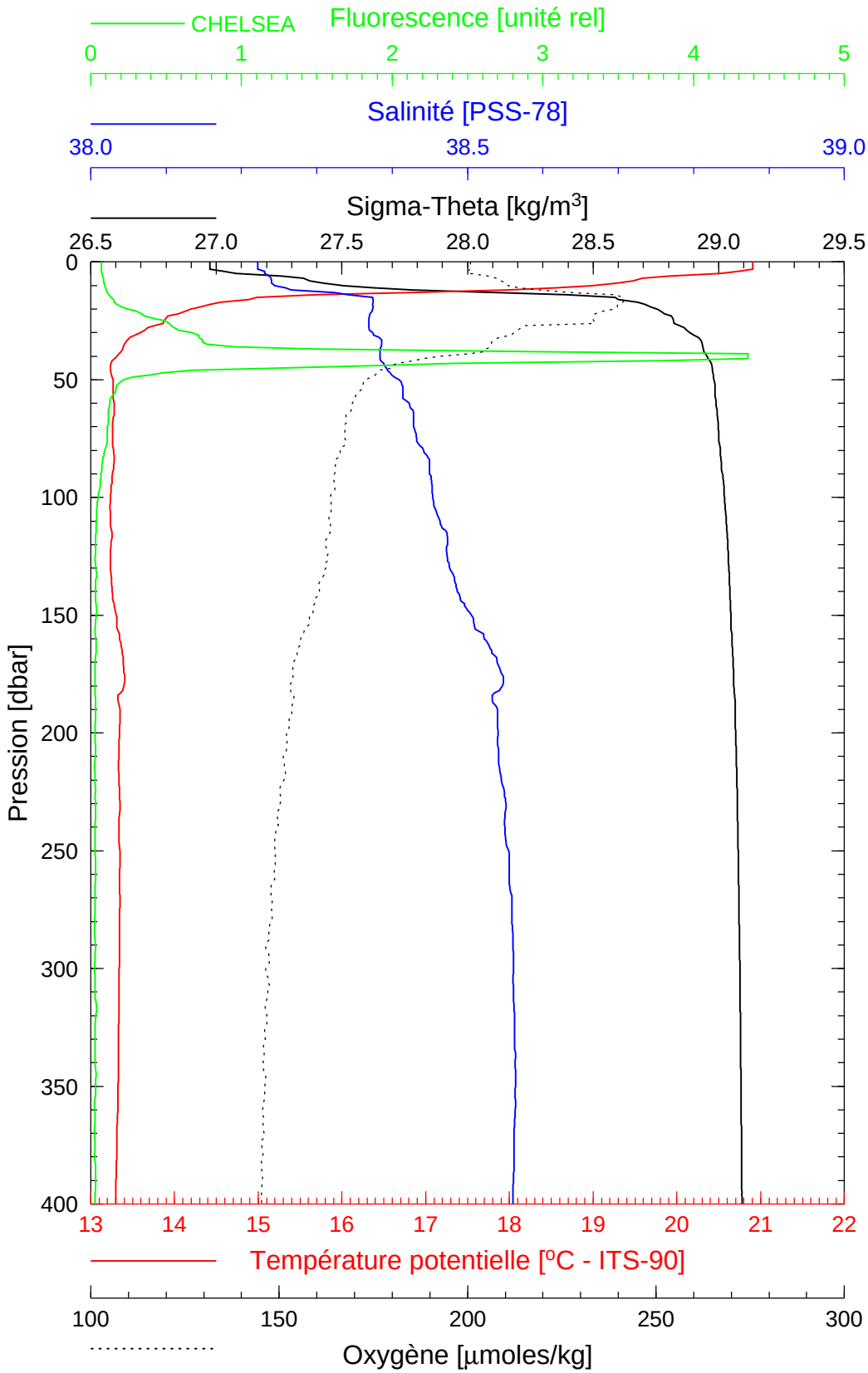
*BOUS002*




| | | | |
|---|---|---|---|
| *Date* | *22/07/2001* | *Latitude* | *43º20.634 N* |
| *Heure déb* | *15h 34min [TU]* | *Longitude* | *07º55.291 E* |

**Boussole 01** **23/07/2001** **BOUS010723_01**

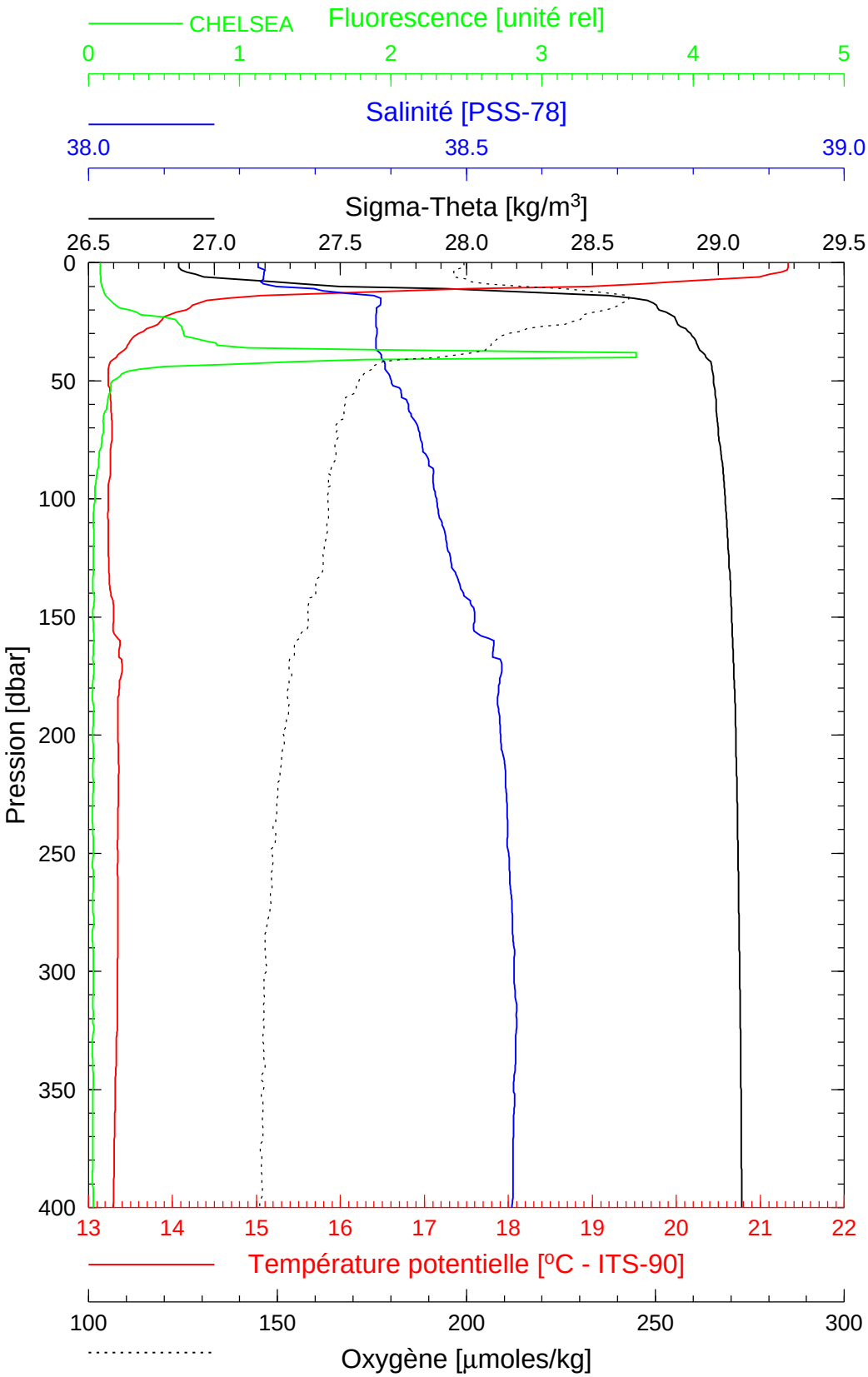
*BOUS003*




| | | | |
|---|---|---|---|
| *Date* | *23/07/2001* | *Latitude* | *43º23.606 N* |
| *Heure déb* | *12h 12min [TU]* | *Longitude* | *07º56.208 E* |

**Boussole 01** **23/07/2001** **BOUS010723_02**

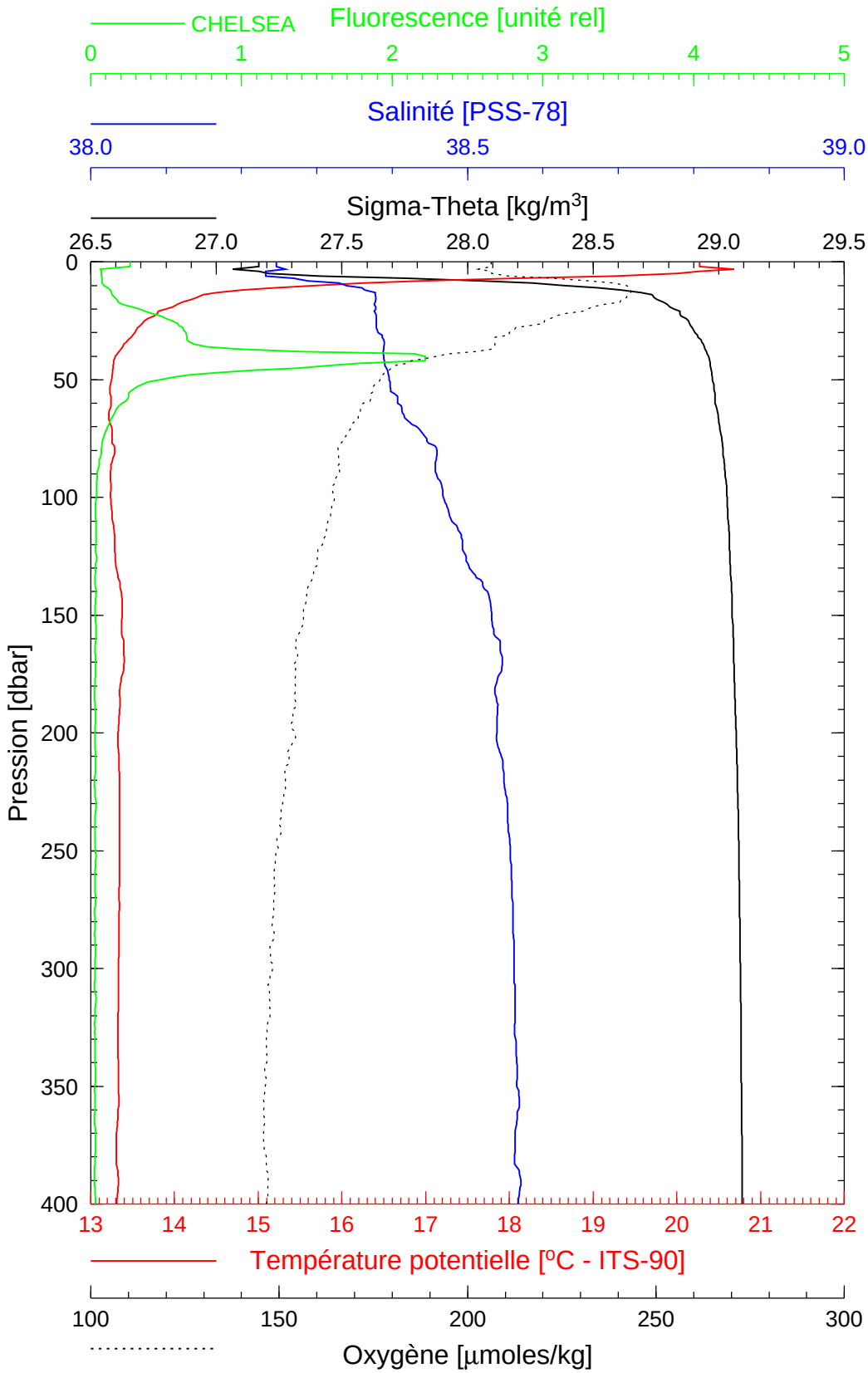
*BOUS004*




| | | | |
|---|---|---|---|
| *Date* | *23/07/2001* | *Latitude* | *43º22.901 N* |
| *Heure déb* | *15h 52min [TU]* | *Longitude* | *07º55.757 E* |

**Boussole 01** **24/07/2001** **BOUS010724_01**

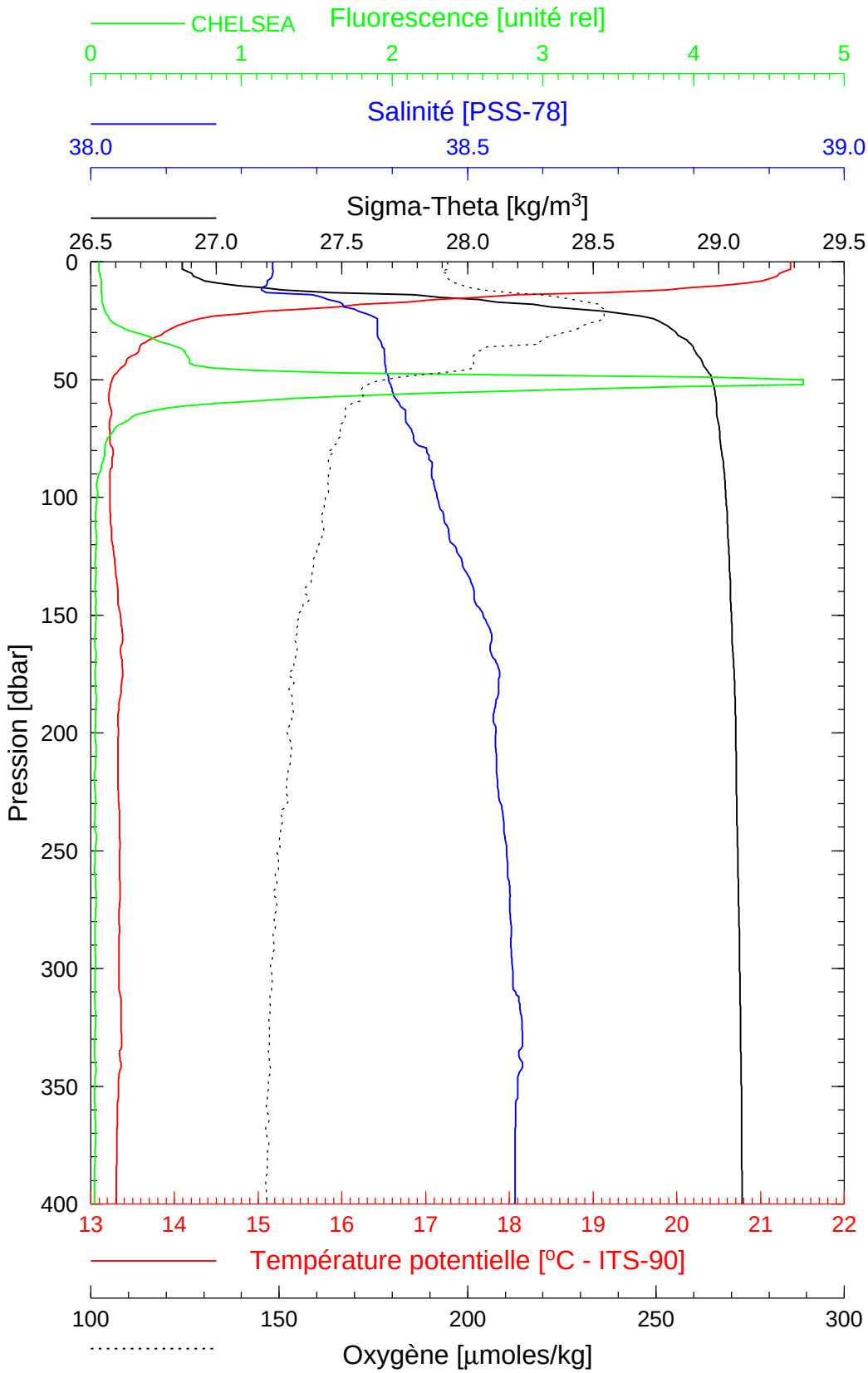
*BOUS005*




| | | | |
|---|---|---|---|
| *Date* | *24/07/2001* | *Latitude* | *43º22.027 N* |
| *Heure déb* | *07h 38min [TU]* | *Longitude* | *07º54.254 E* |

**Boussole 01** **24/07/2001** **BOUS010724_02**

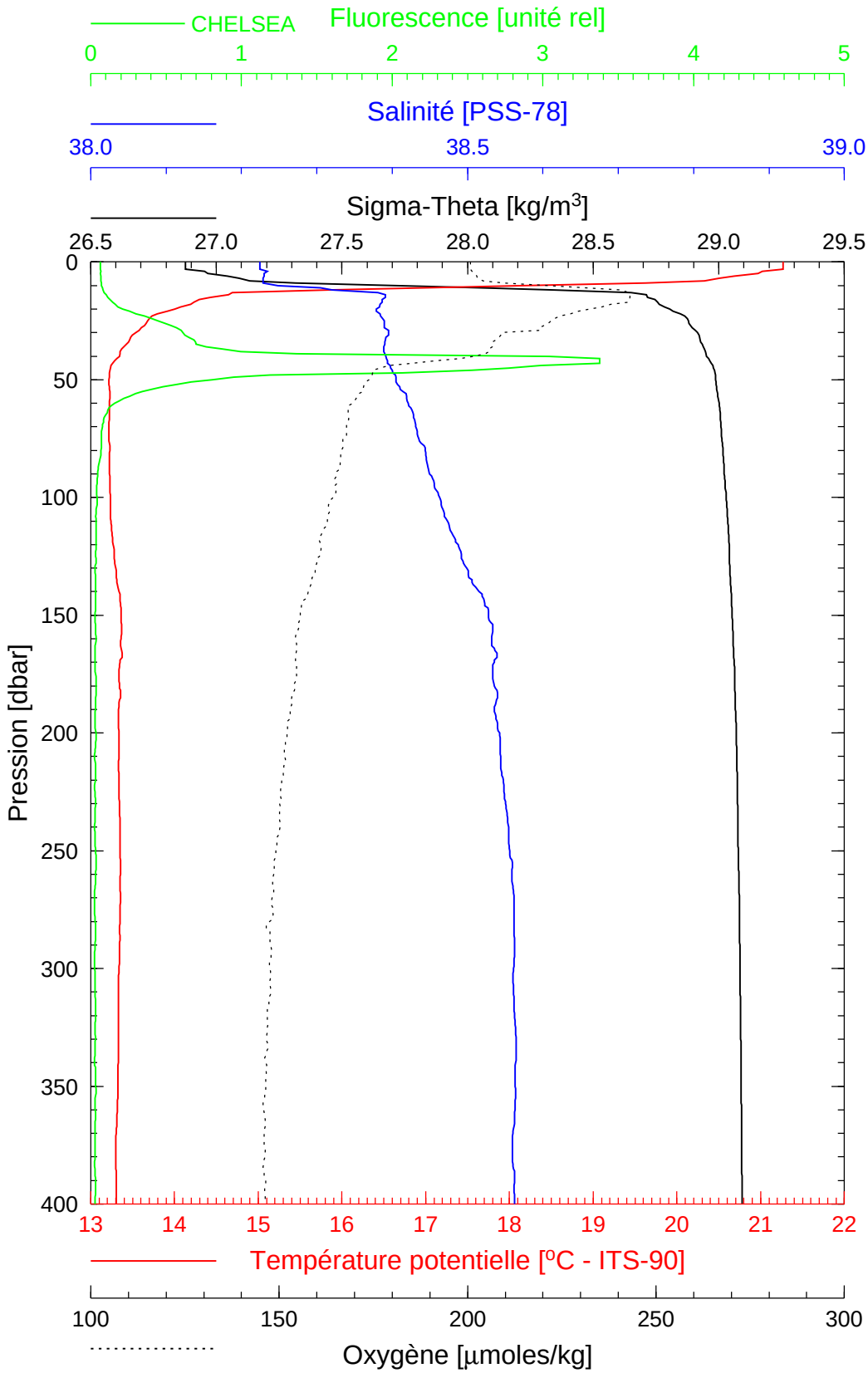
*BOUS006*




| | | | |
|---|---|---|---|
| *Date* | *24/07/2001* | *Latitude* | *43º22.392 N* |
| *Heure déb* | *09h 38min [TU]* | *Longitude* | *07º54.062 E* |

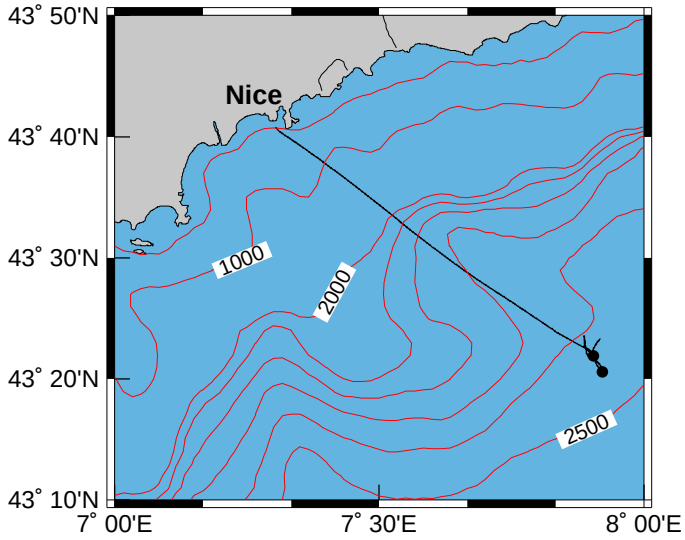
**Boussole 01** **24/07/2001** **BOUS010724_03**

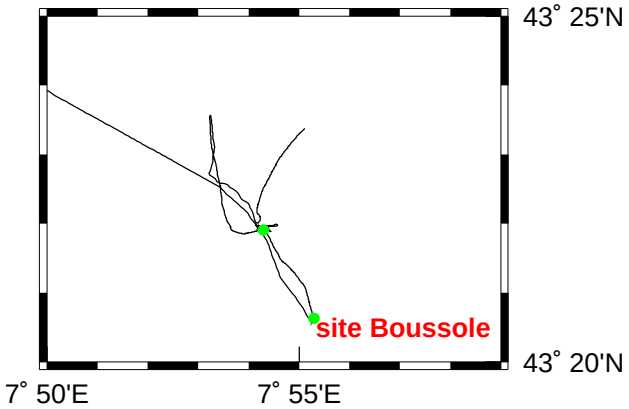
*BOUS007*

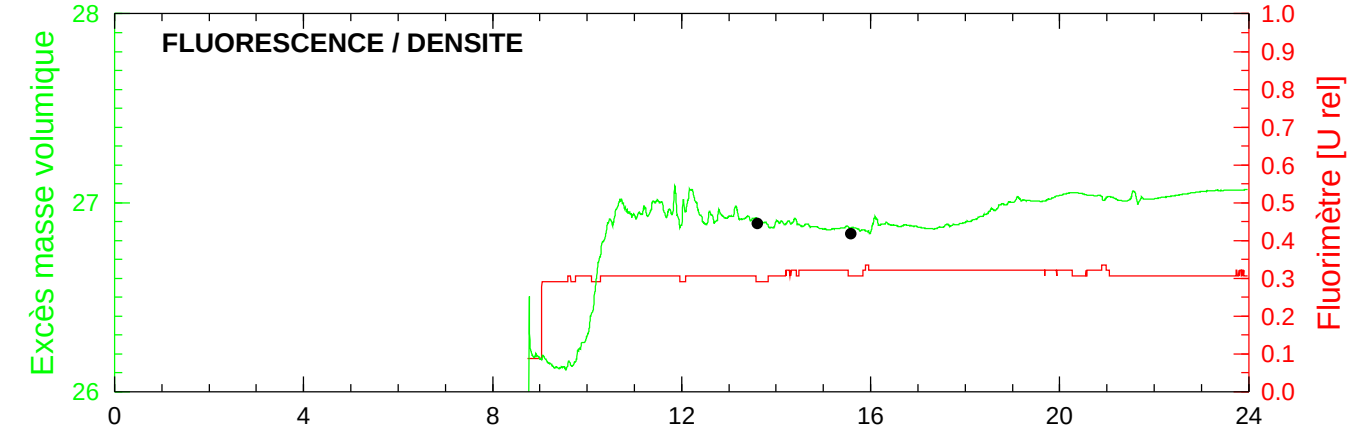


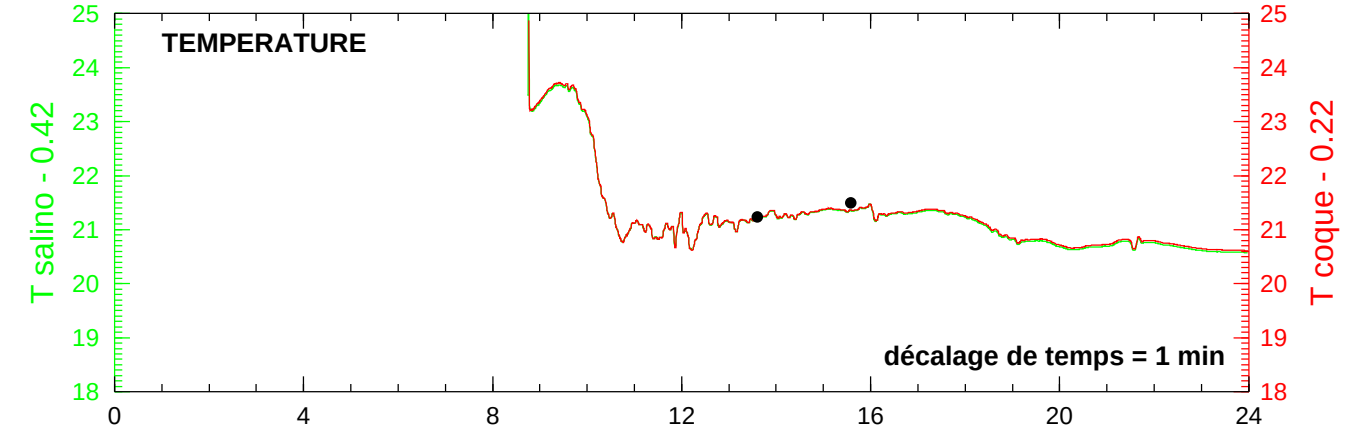

| | | | |
|---|---|---|---|
| *Date* | *24/07/2001* | *Latitude* | *43º22.991 N* |
| *Heure déb* | *13h 50min [TU]* | *Longitude* | *07º54.112 E* |

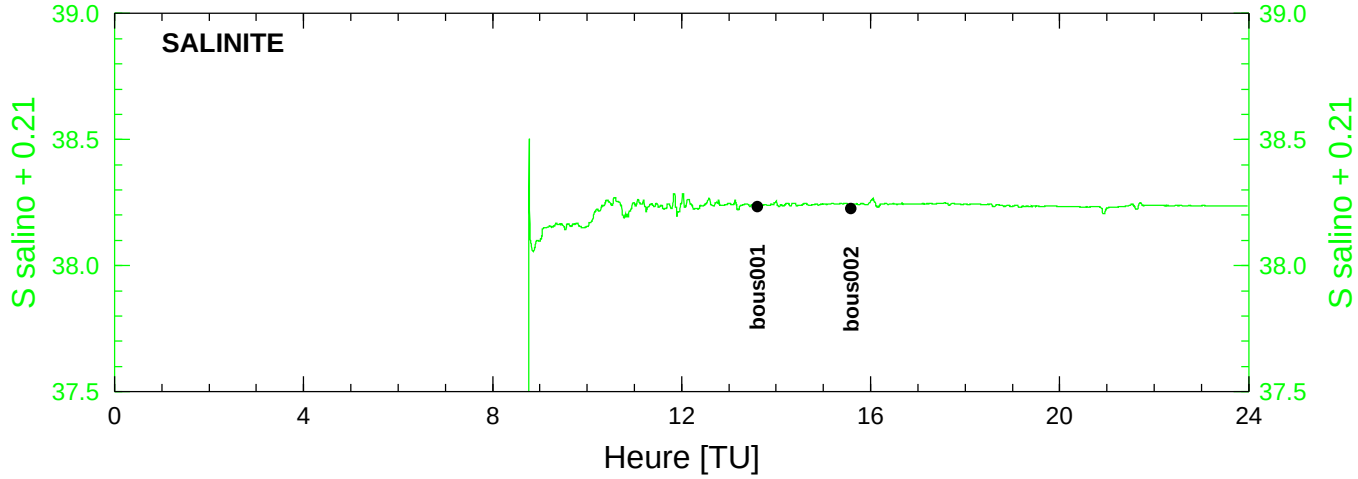
# BOUSSOLE 01 22 juillet 2001



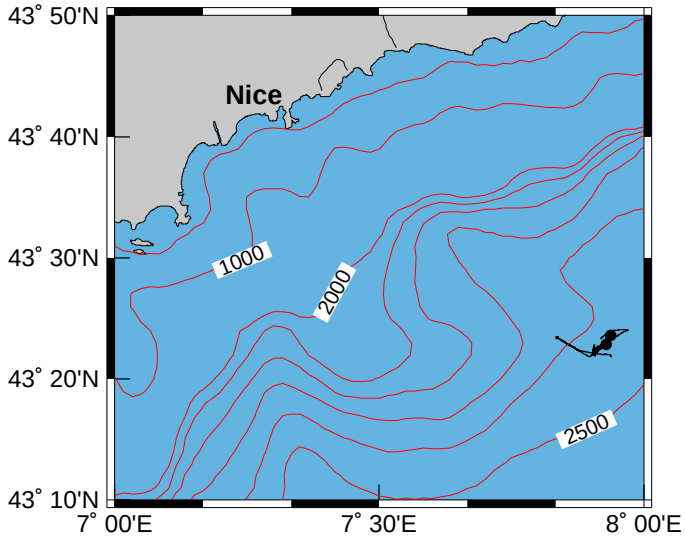



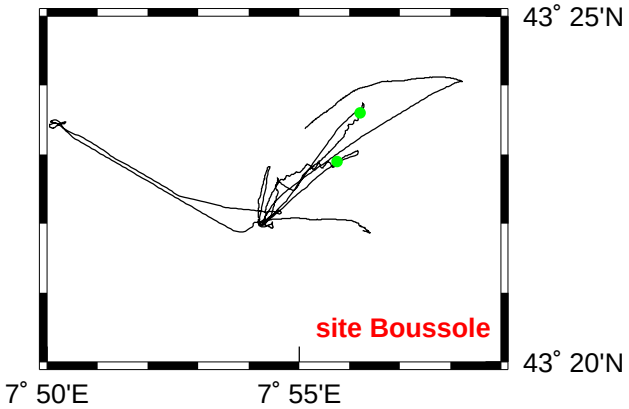



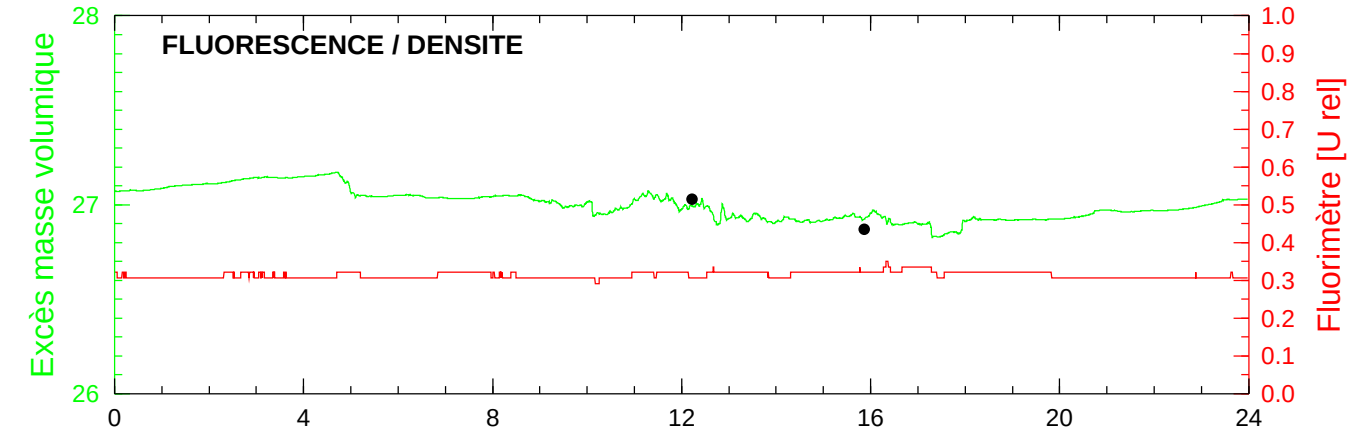



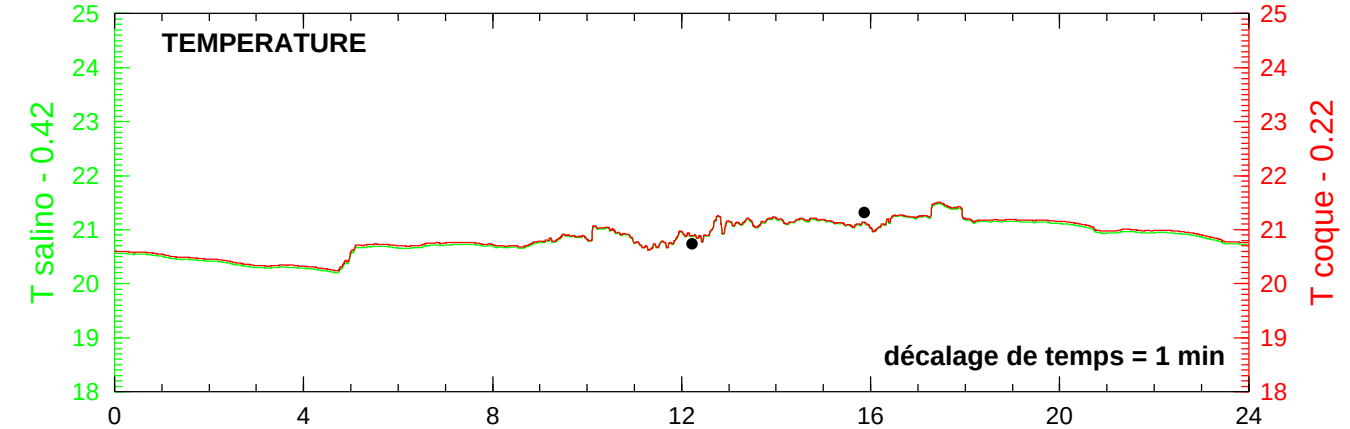



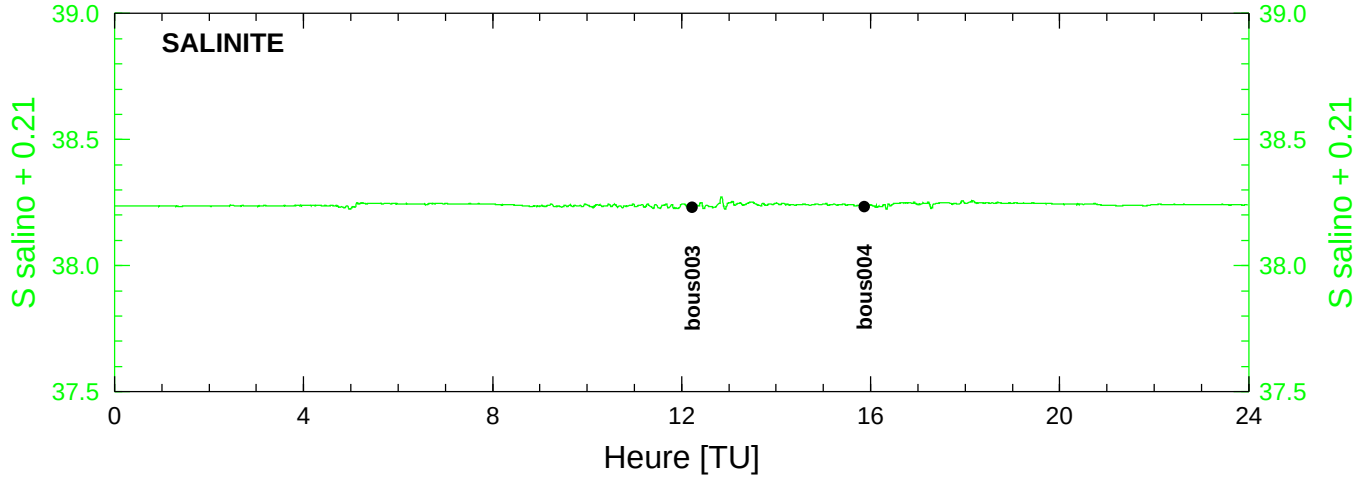
# BOUSSOLE 01 23 juillet 2001



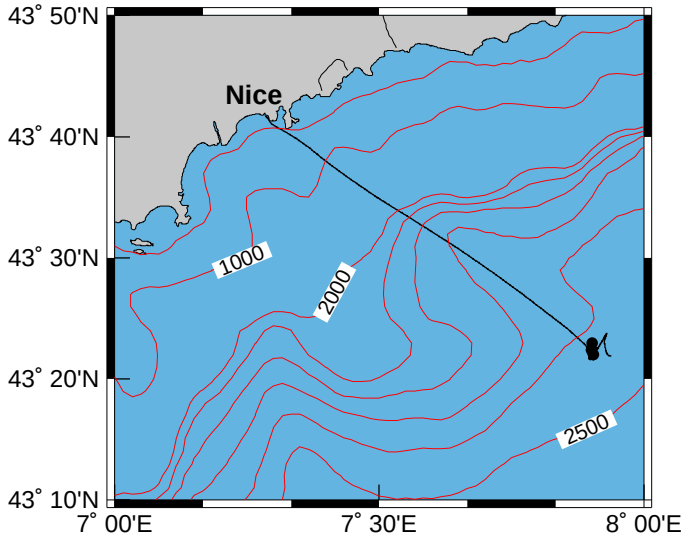



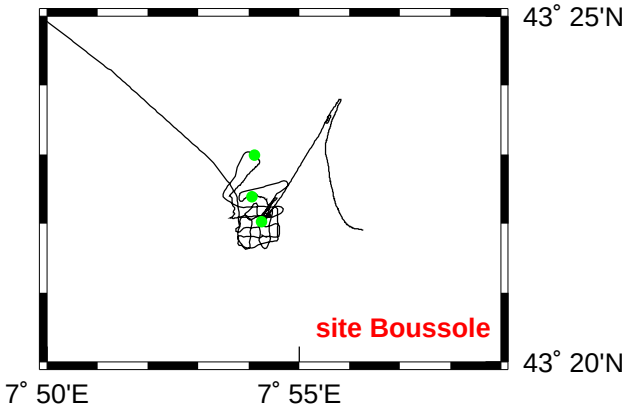



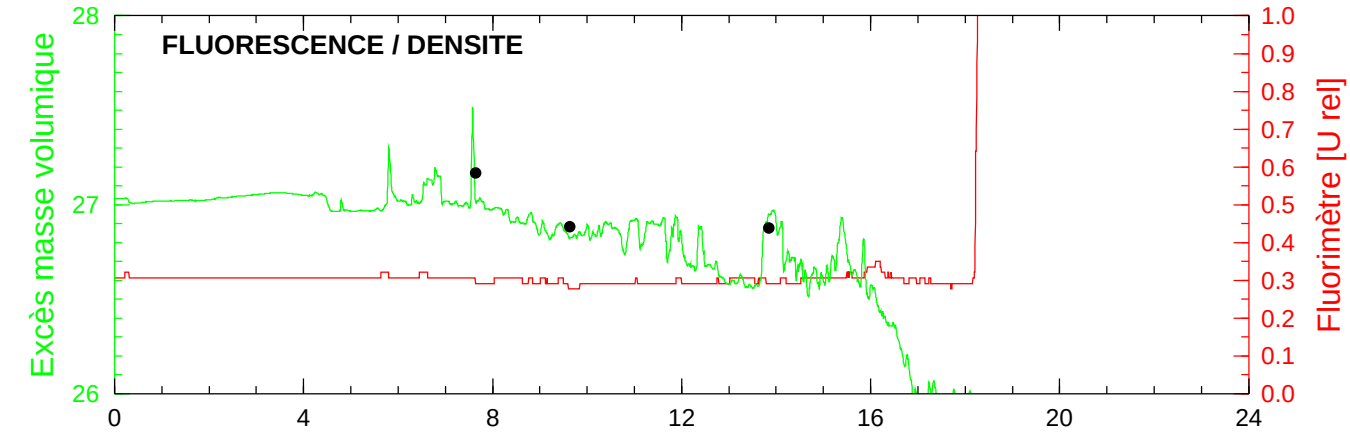



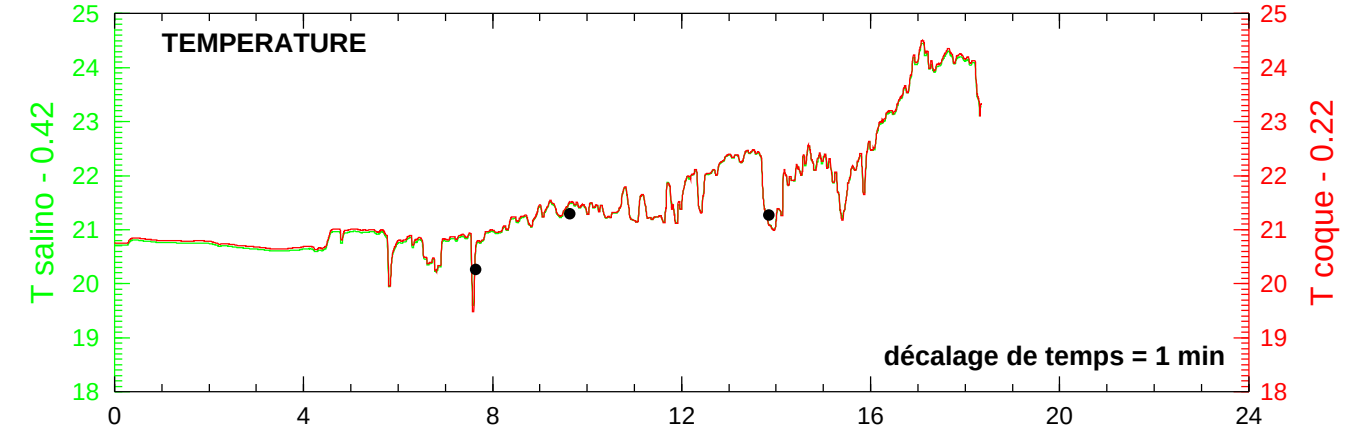



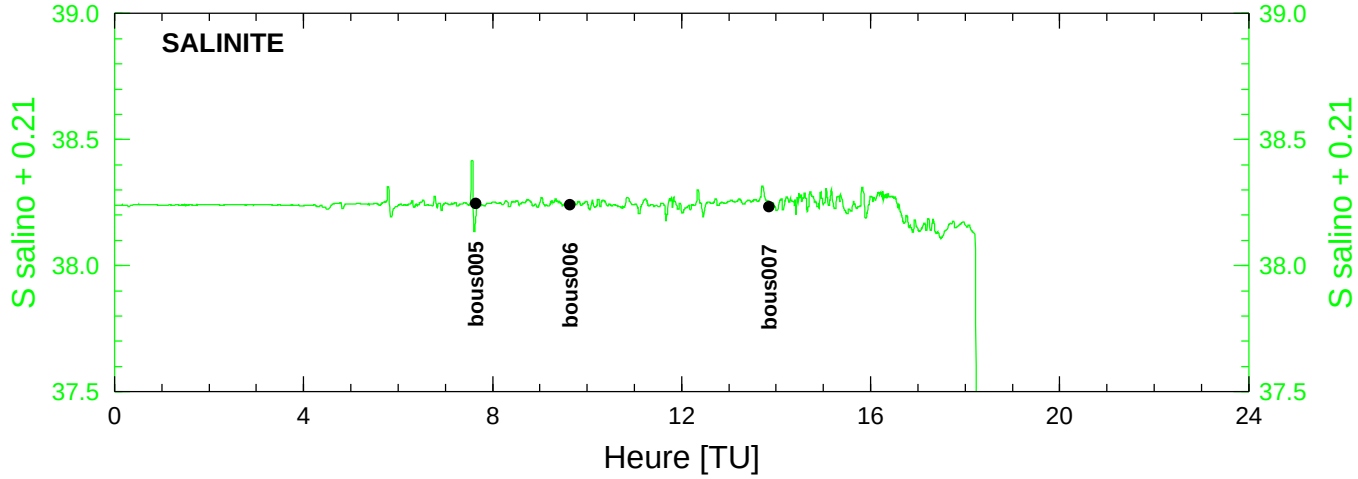
# BOUSSOLE 01 24 juillet 2001

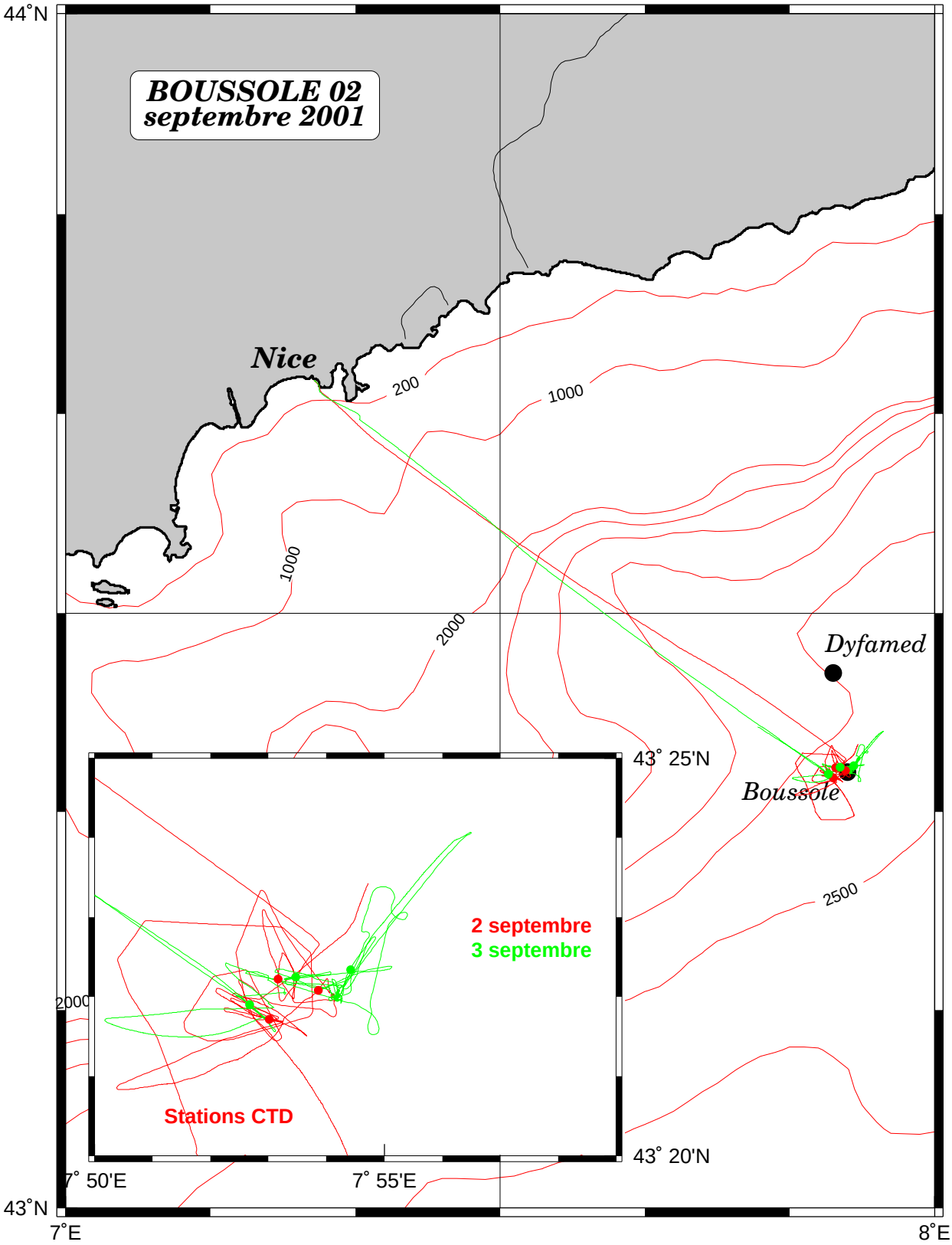


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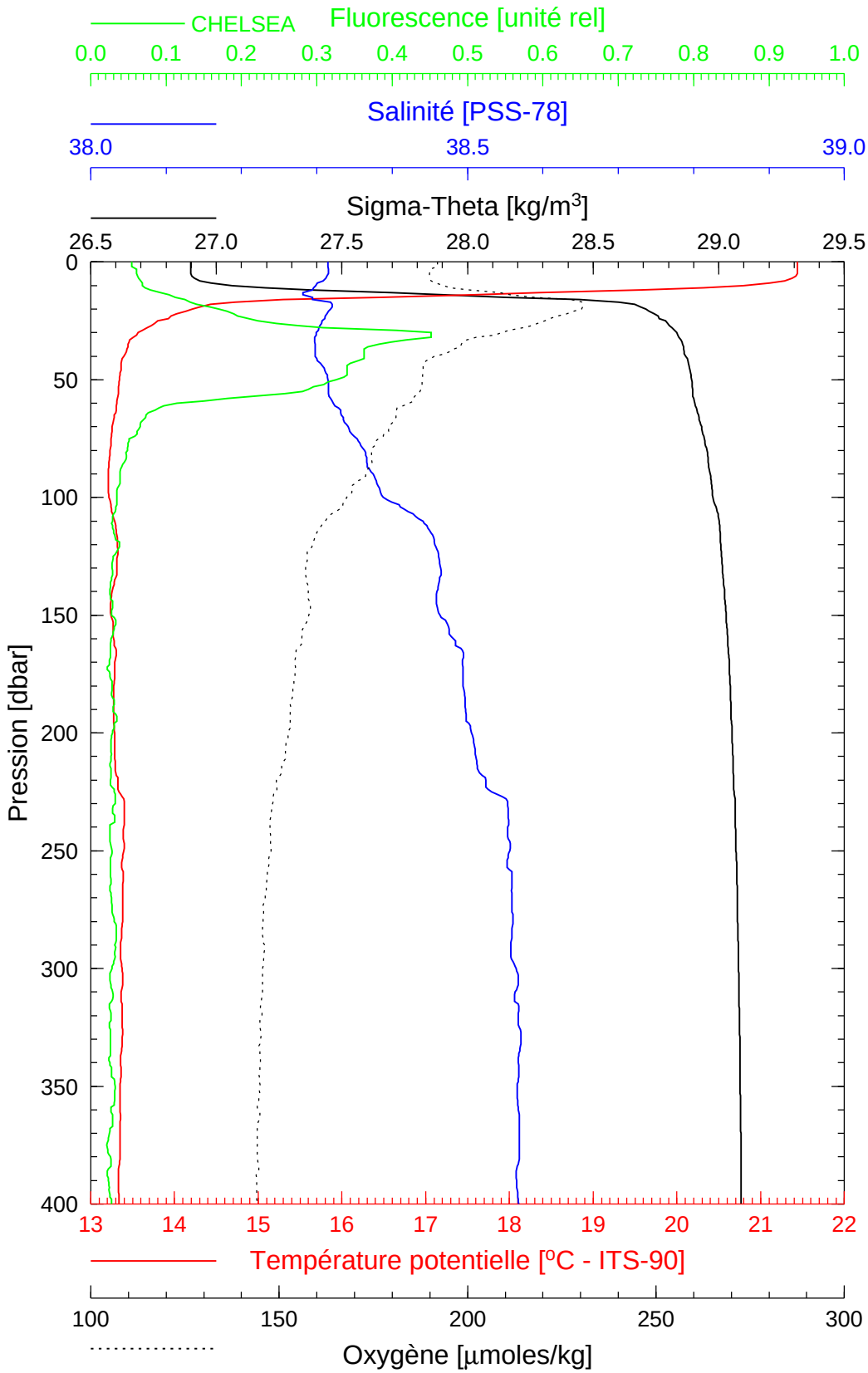
**Boussole 02** **02/09/2001** **BOUS010902_01**

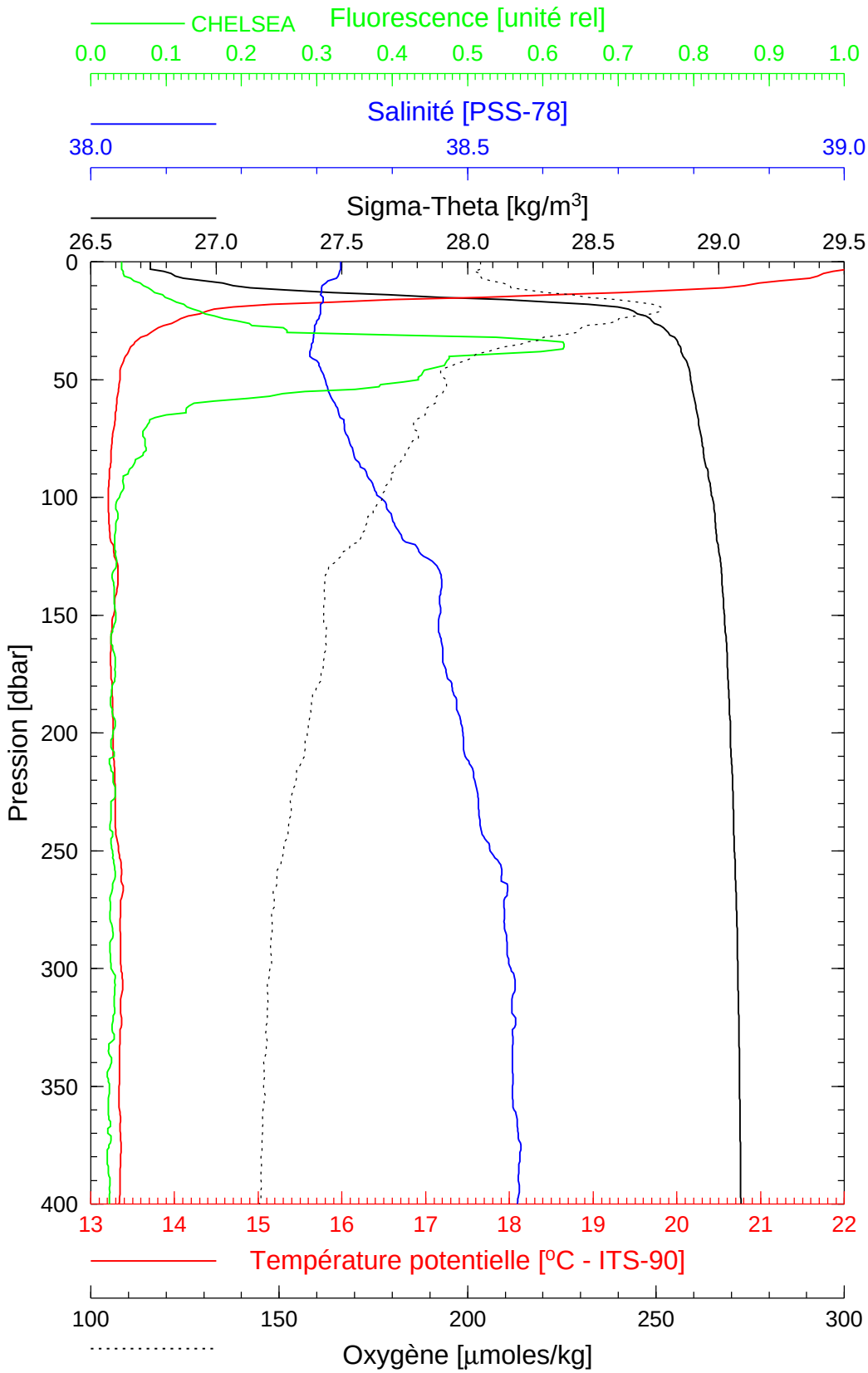
*BOUS001*




| | | | |
|---|---|---|---|
| *Date* | *02/09/2001* | *Latitude* | *43º22.085 N* |
| *Heure déb* | *07h 25min [TU]* | *Longitude* | *07º53.859 E* |

**Boussole 02** **02/09/2001** **BOUS010902_02**

*BOUS002*

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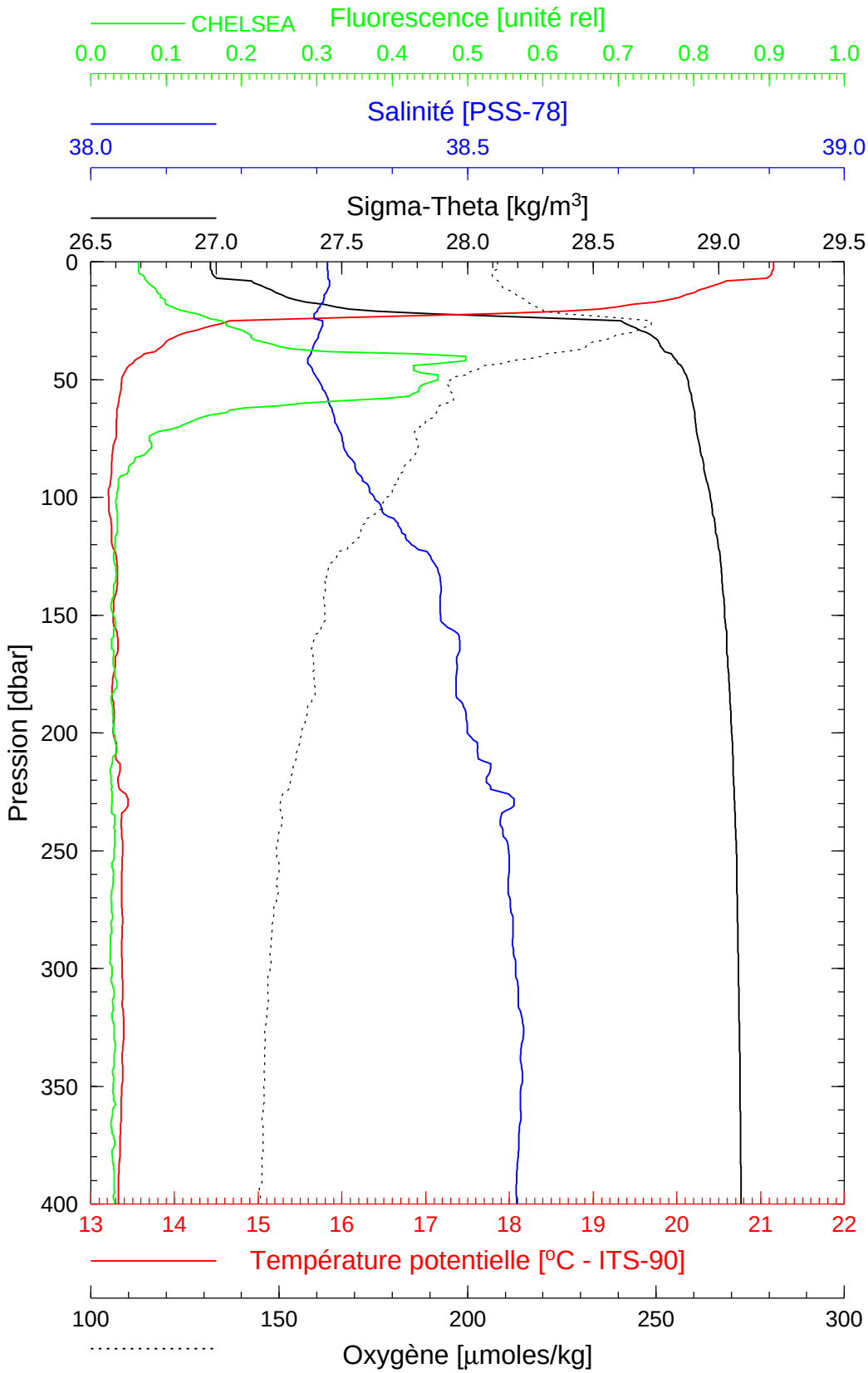
|---|---|---|---|
| *Date* | *02/09/2001* | *Latitude* | *43º21.719 N* |
| *Heure déb* | *11h 26min [TU]* | *Longitude* | *07º53.015 E* |

**Boussole 02** **02/09/2001** **BOUS010902_03**

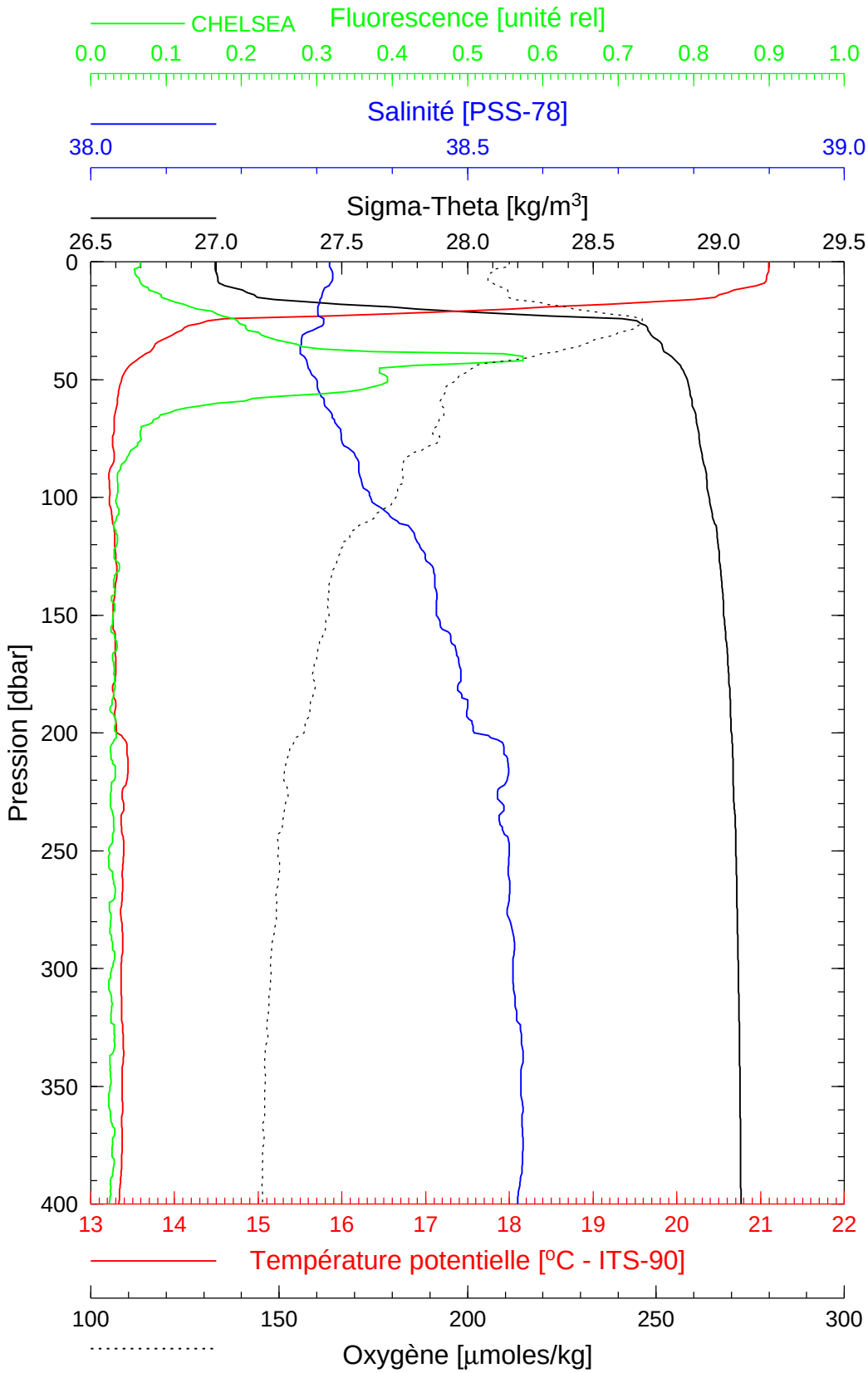
*BOUS003*




| | | | |
|---|---|---|---|
| *Date* | *02/09/2001* | *Latitude* | *43º22.225 N* |
| *Heure déb* | *15h 29min [TU]* | *Longitude* | *07º53.163 E* |

**Boussole 02** **03/09/2001** **BOUS010903_01**

*BOUS004*

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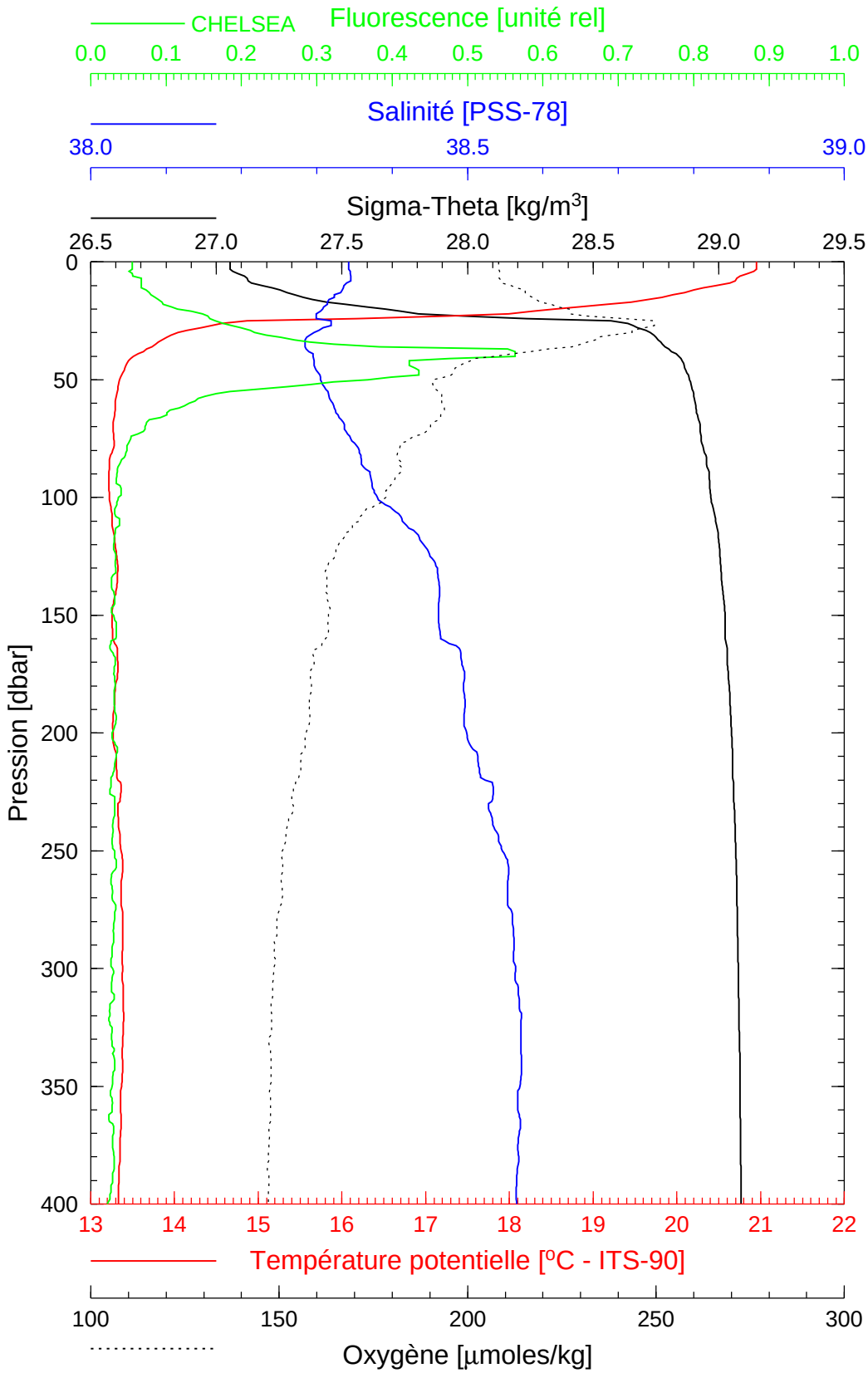
|---|---|---|---|
| *Date* | *03/09/2001* | *Latitude* | *43º22.340 N* |
| *Heure déb* | *08h 12min [TU]* | *Longitude* | *07º54.420 E* |

**Boussole 02** **03/09/2001** **BOUS010903_02**

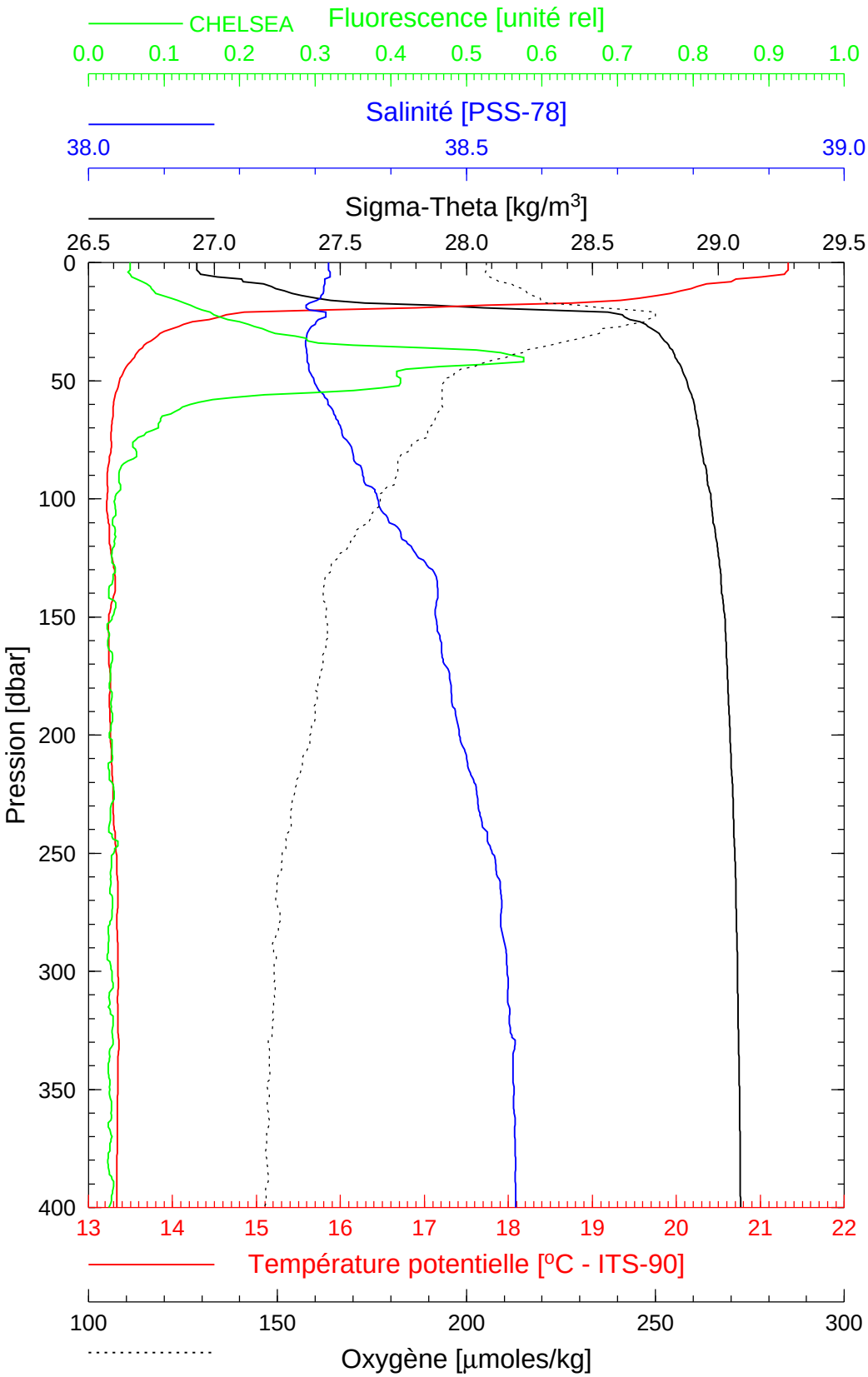
*BOUS005*




| | | | |
|---|---|---|---|
| *Date* | *03/09/2001* | *Latitude* | *43º22.252 N* |
| *Heure déb* | *11h 20min [TU]* | *Longitude* | *07º53.474 E* |

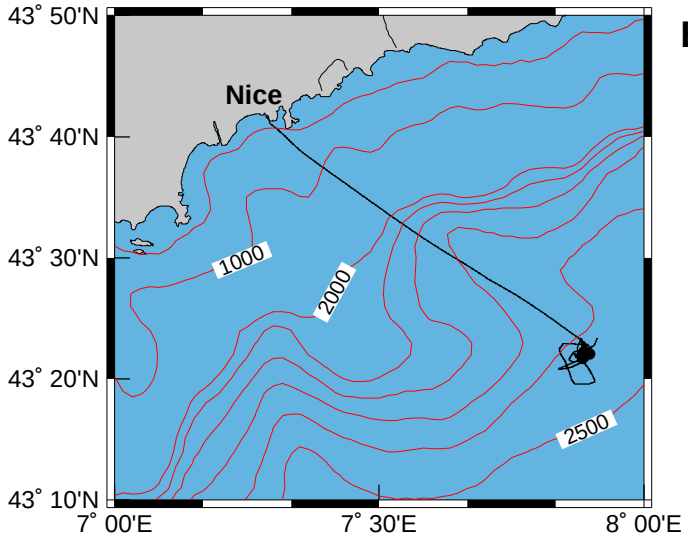
**Boussole 02** **03/09/2001** **BOUS010903_03**

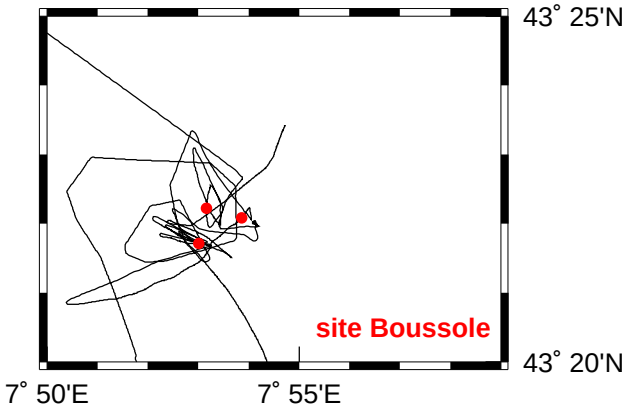
*BOUS006*

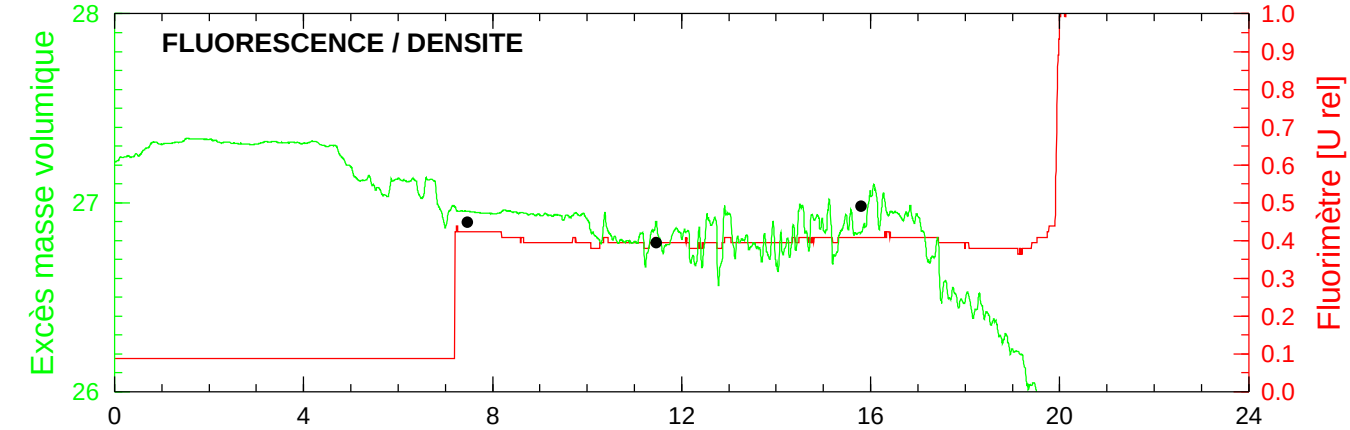


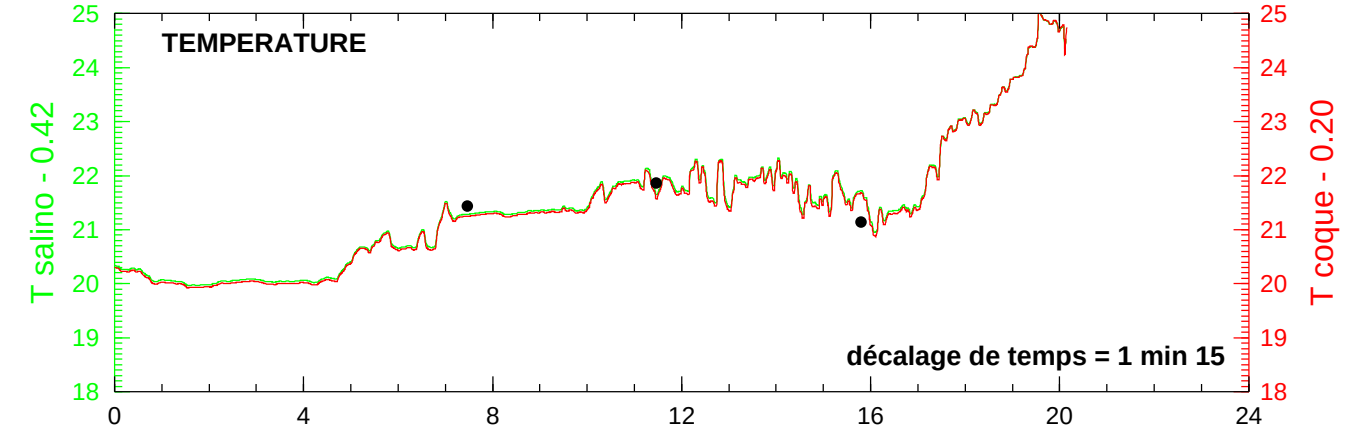

| | | | |
|---|---|---|---|
| *Date* | *03/09/2001* | *Latitude* | *43º21.905 N* |
| *Heure déb* | *13h 47min [TU]* | *Longitude* | *07º52.672 E* |

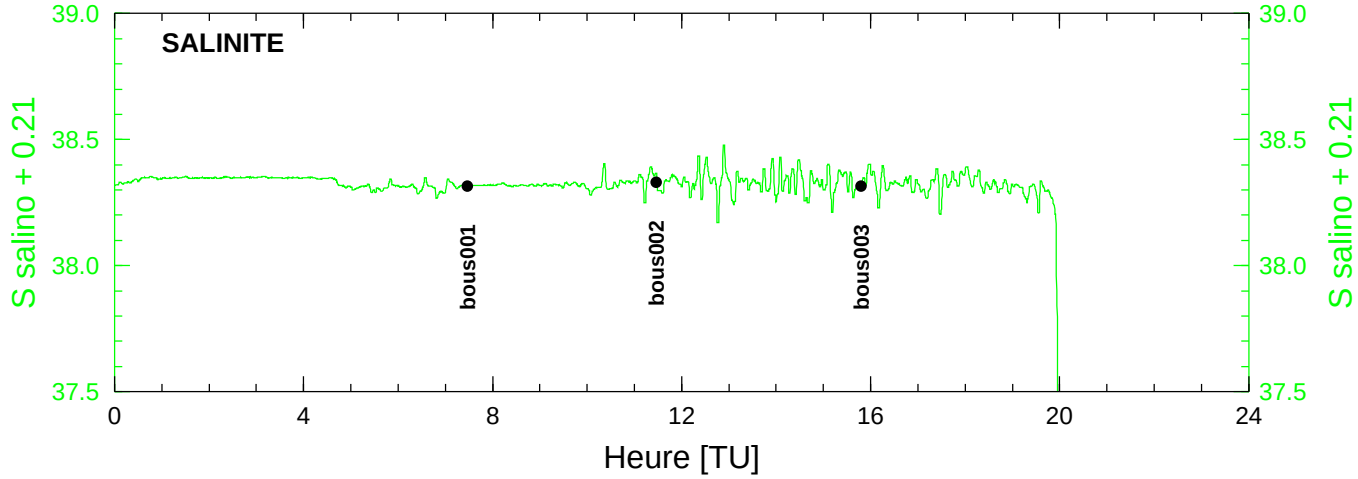
# BOUSSOLE 02  2 septembre 2001



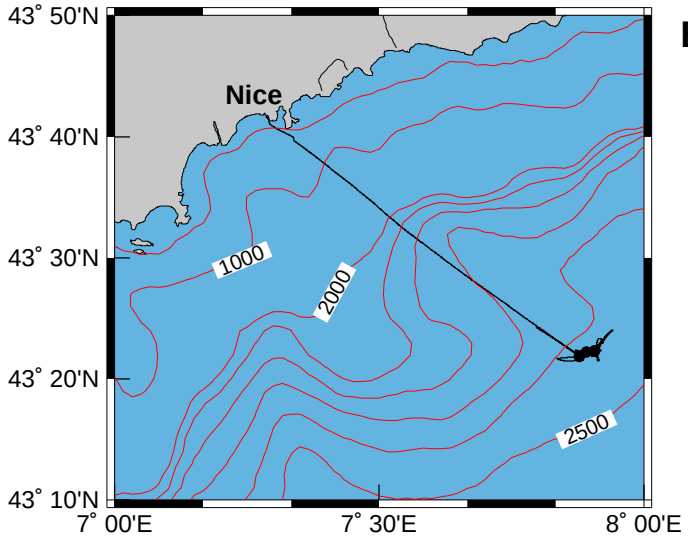



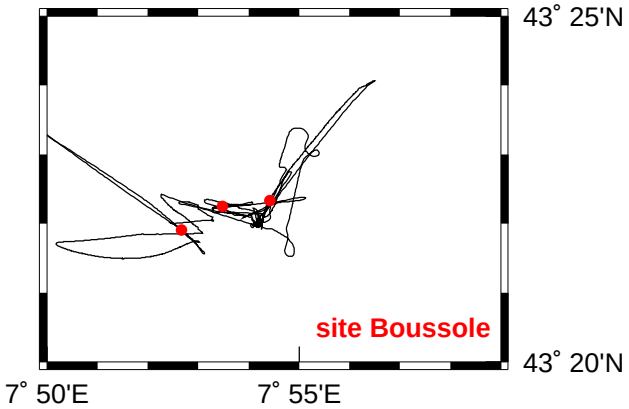



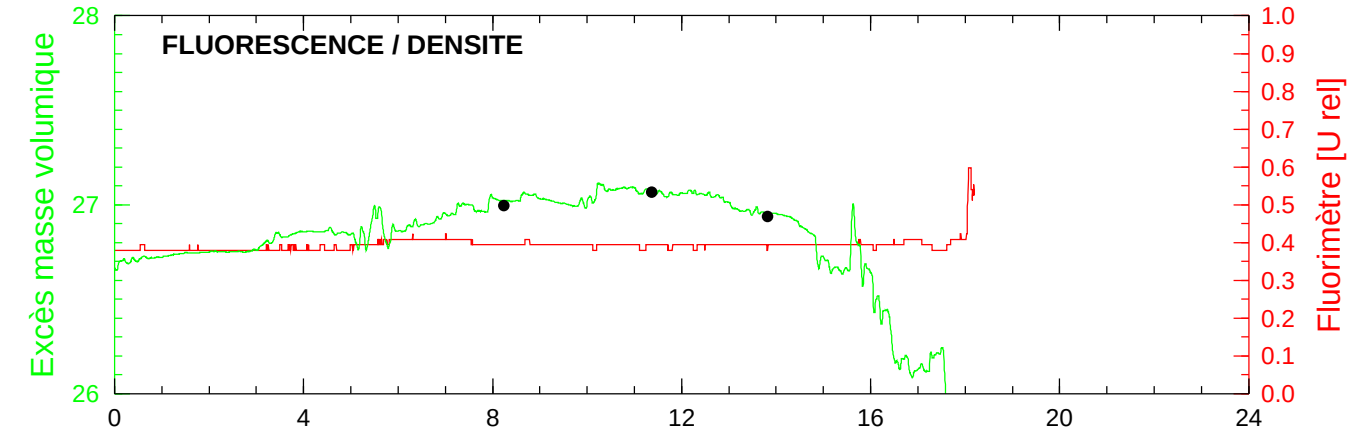



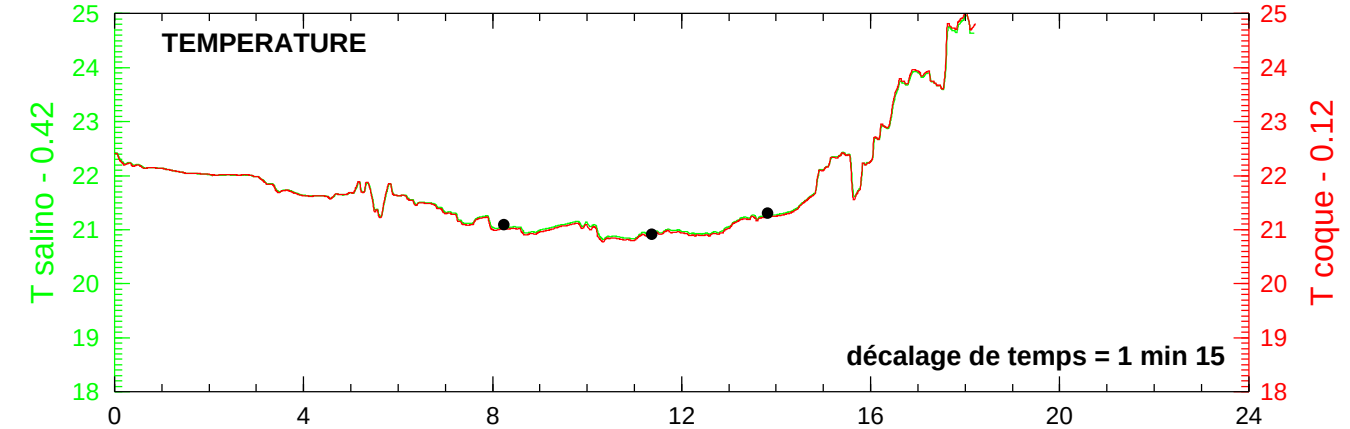



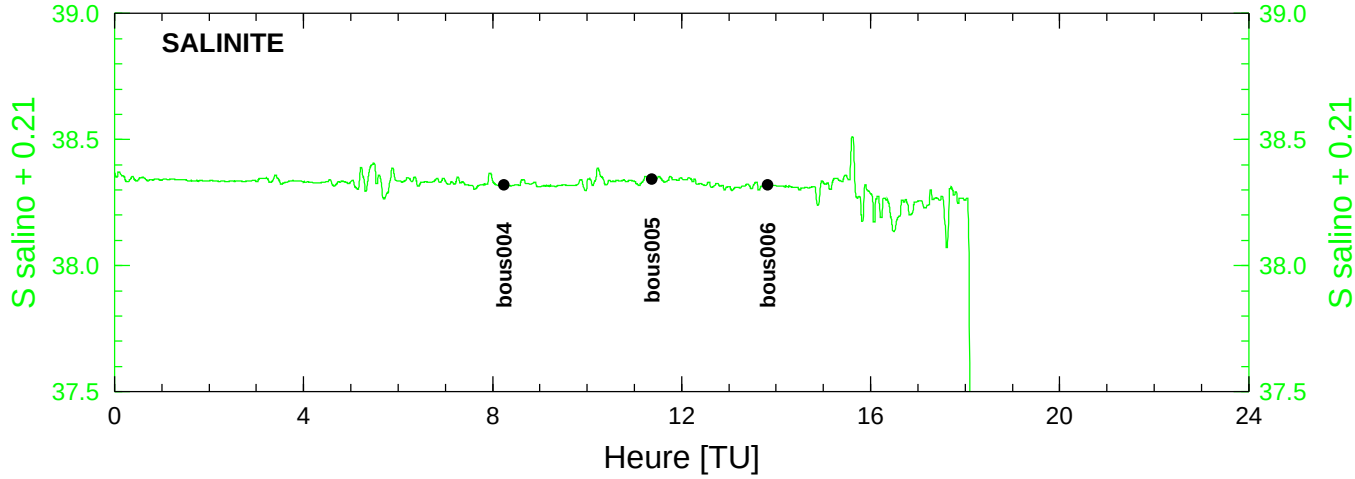
# BOUSSOLE 02 3 septembre 2001

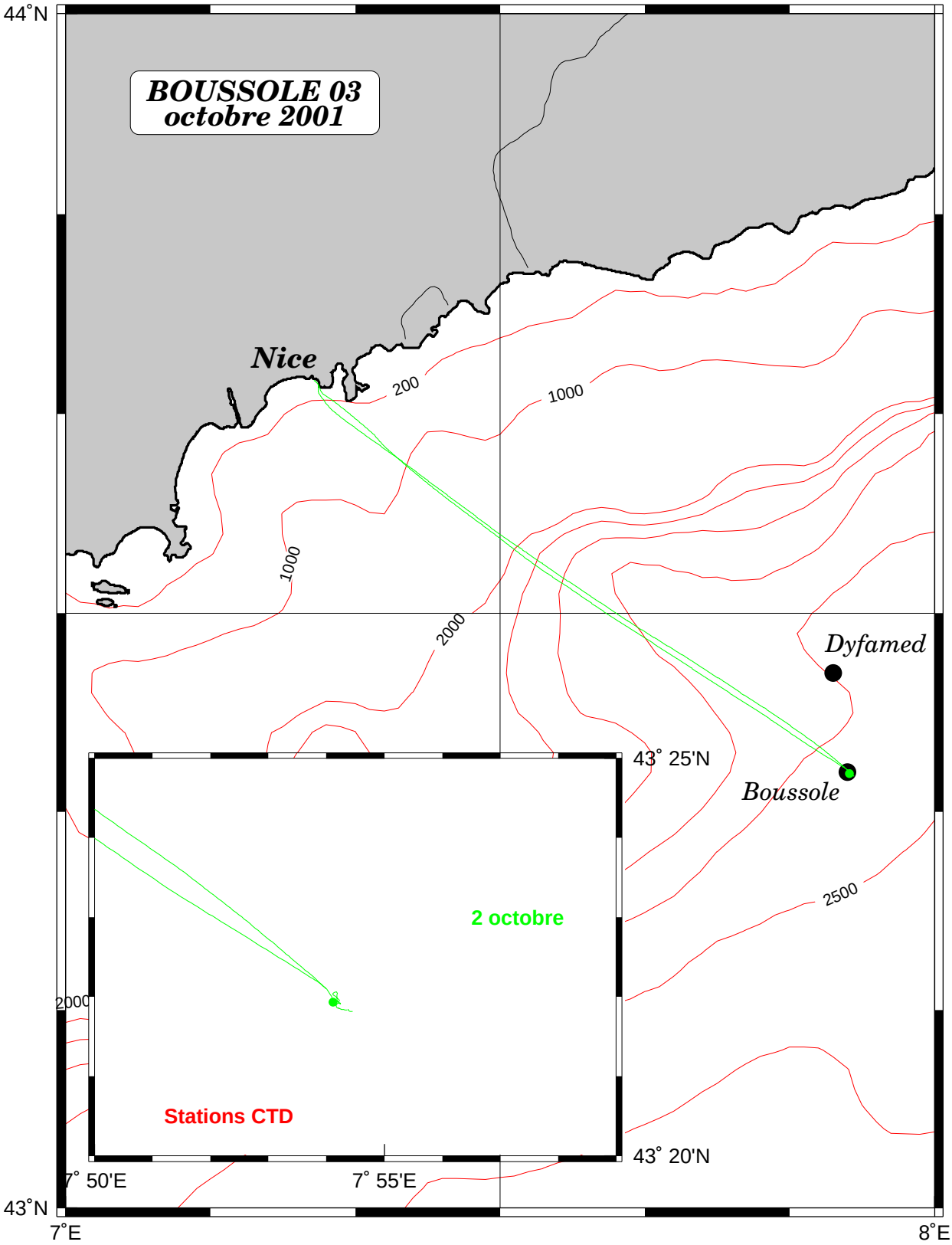


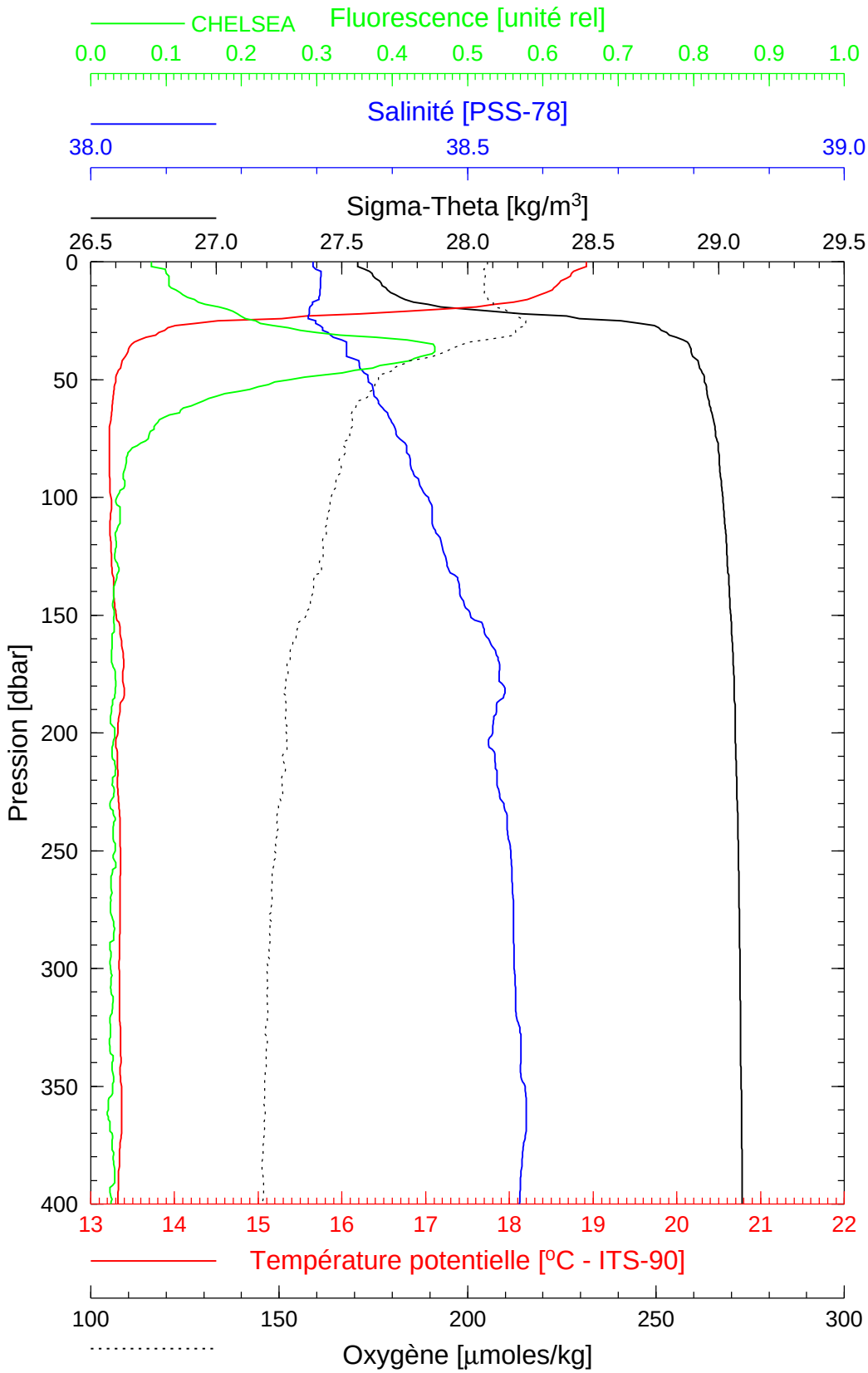






GMT 2003 Aug 17 22:26:49

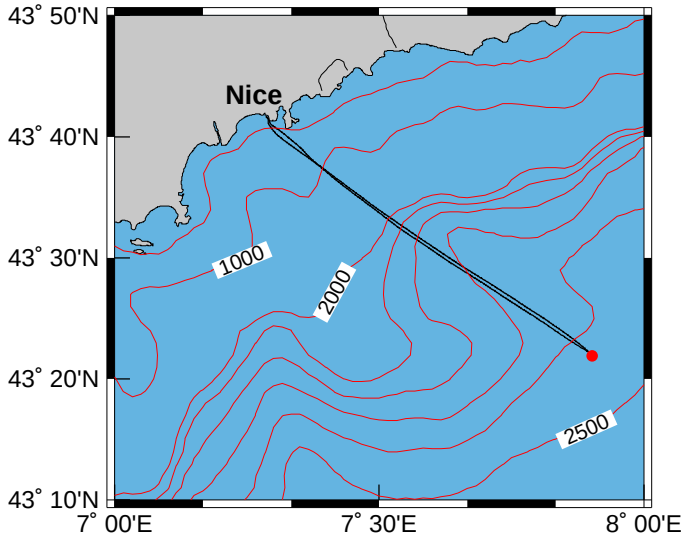
**Boussole 03** **02/10/2001** **BOUS011002_01**

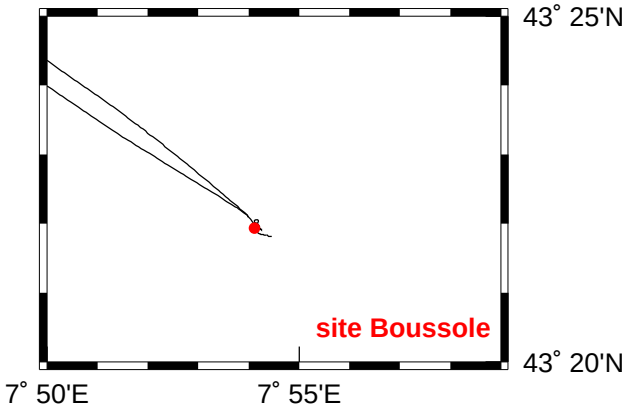
*BOUS001*

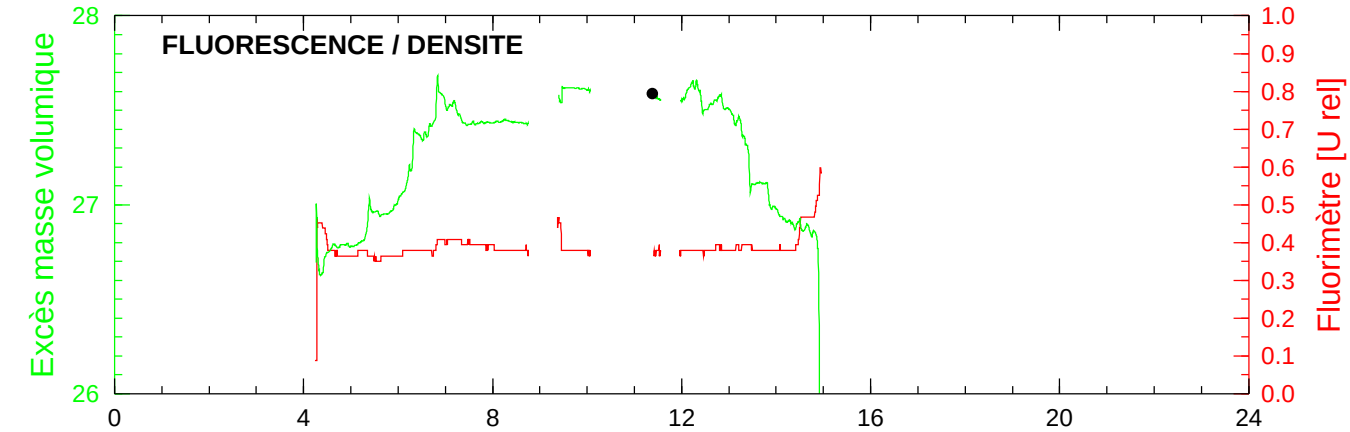


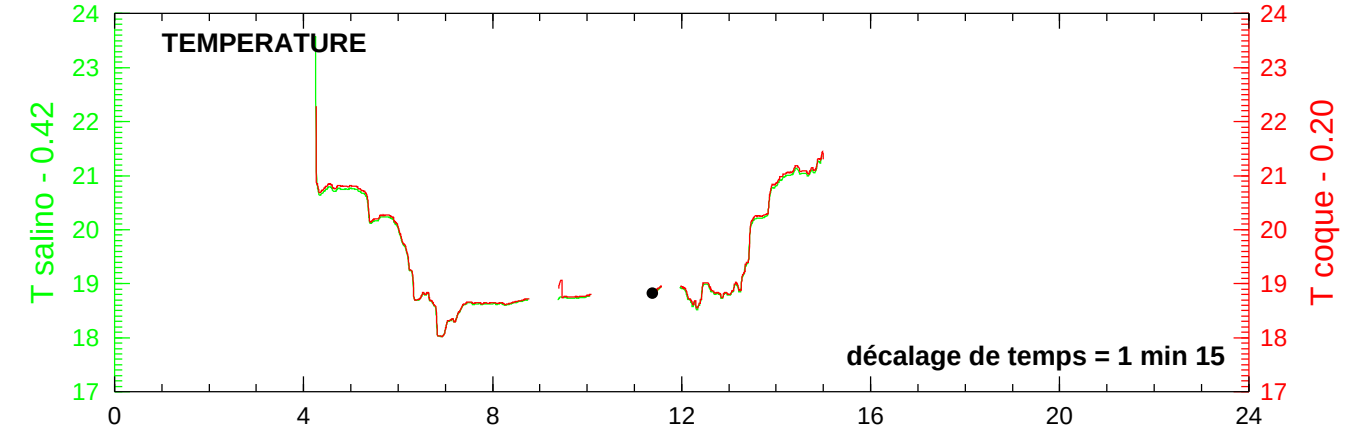

| | | | |
|---|---|---|---|
| *Date* | *02/10/2001* | *Latitude* | *43º21.933 N* |
| *Heure déb* | *11h 19min [TU]* | *Longitude* | *07º54.116 E* |

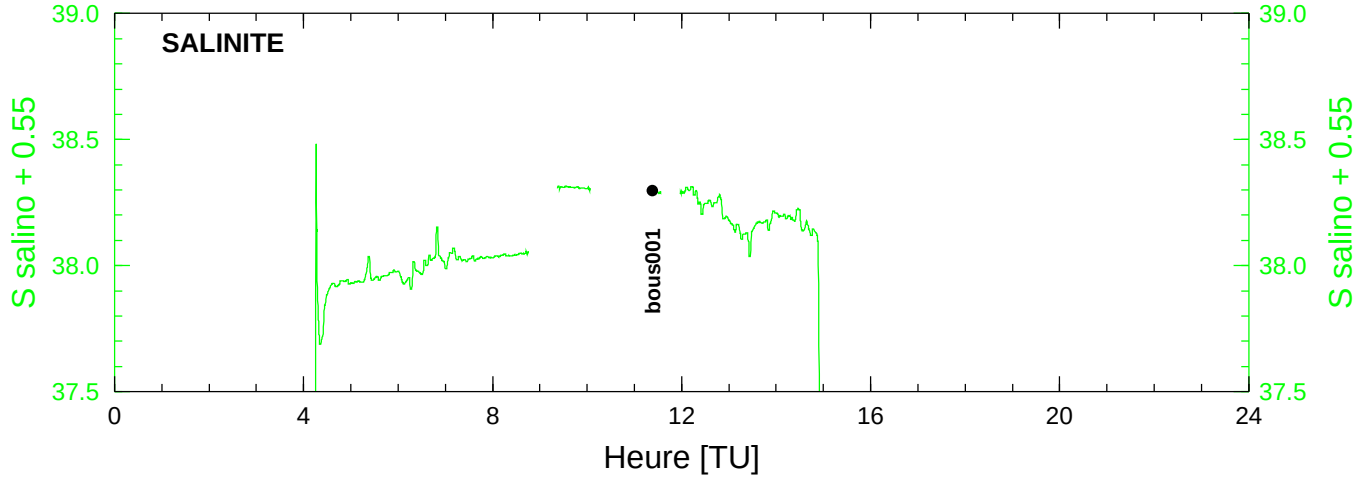
# BOUSSOLE 03 2 octobre 2001

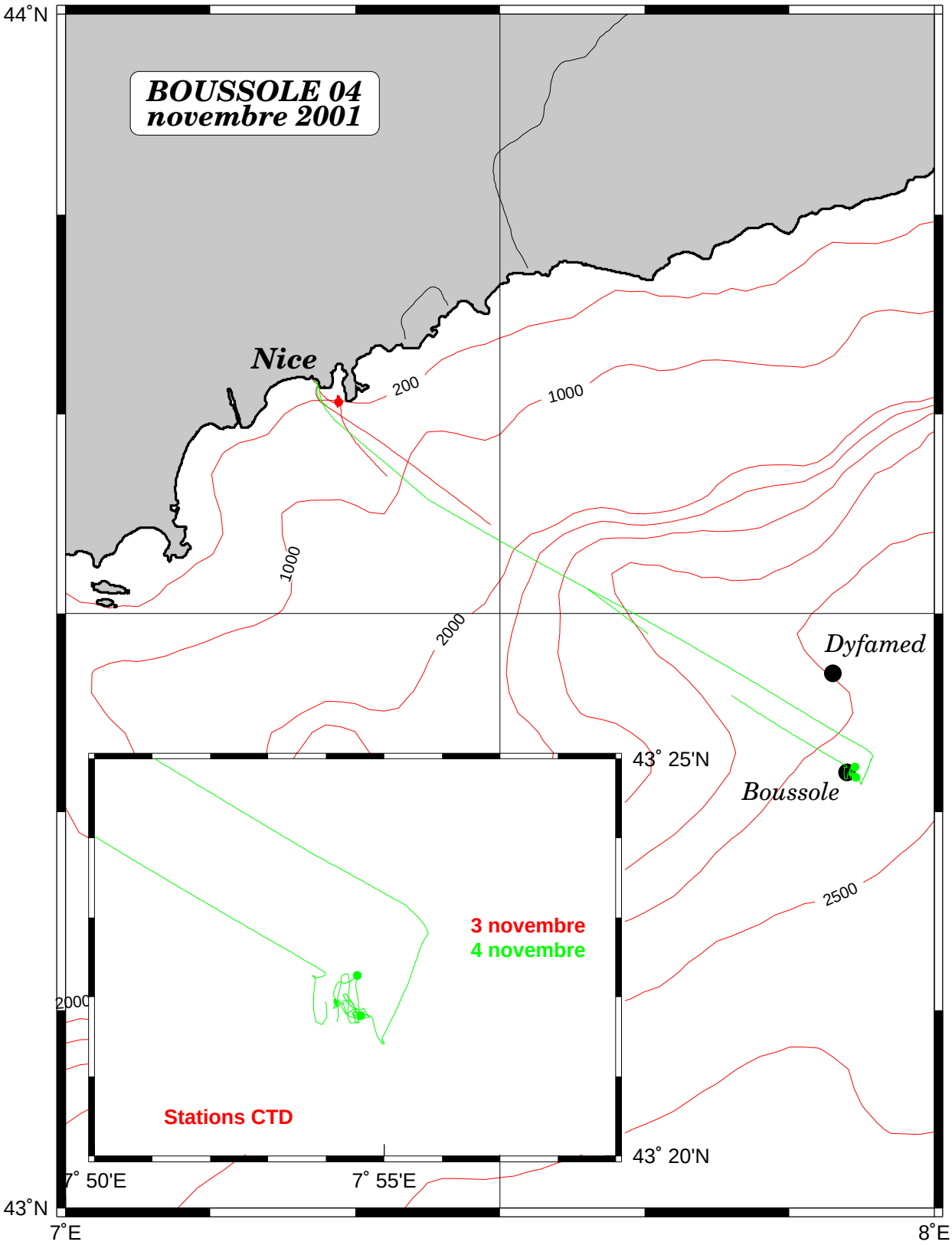


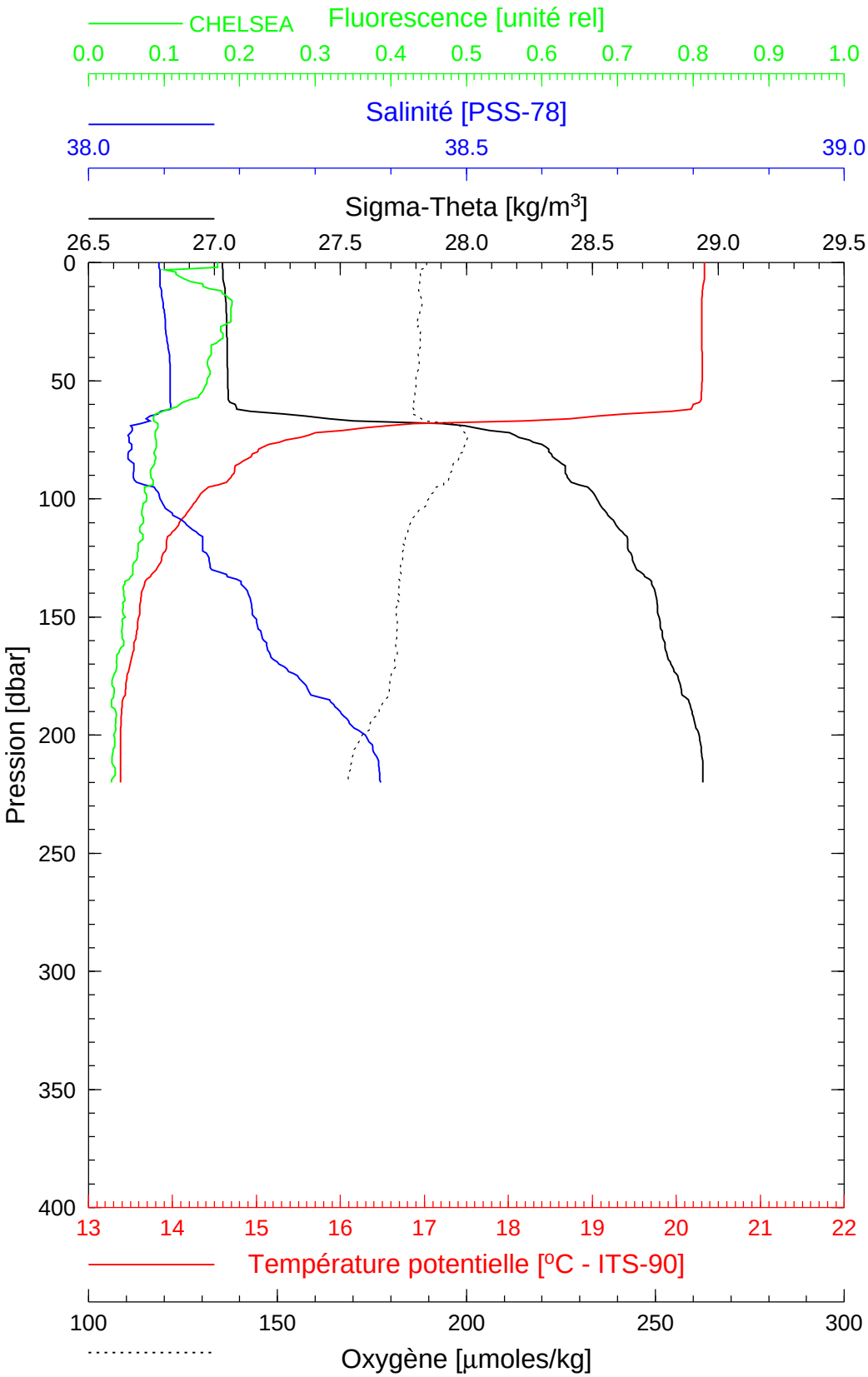






GMT 2003 Aug 17 22:21:16

**Boussole 04** **03/11/2001** **BOUS011103_01**

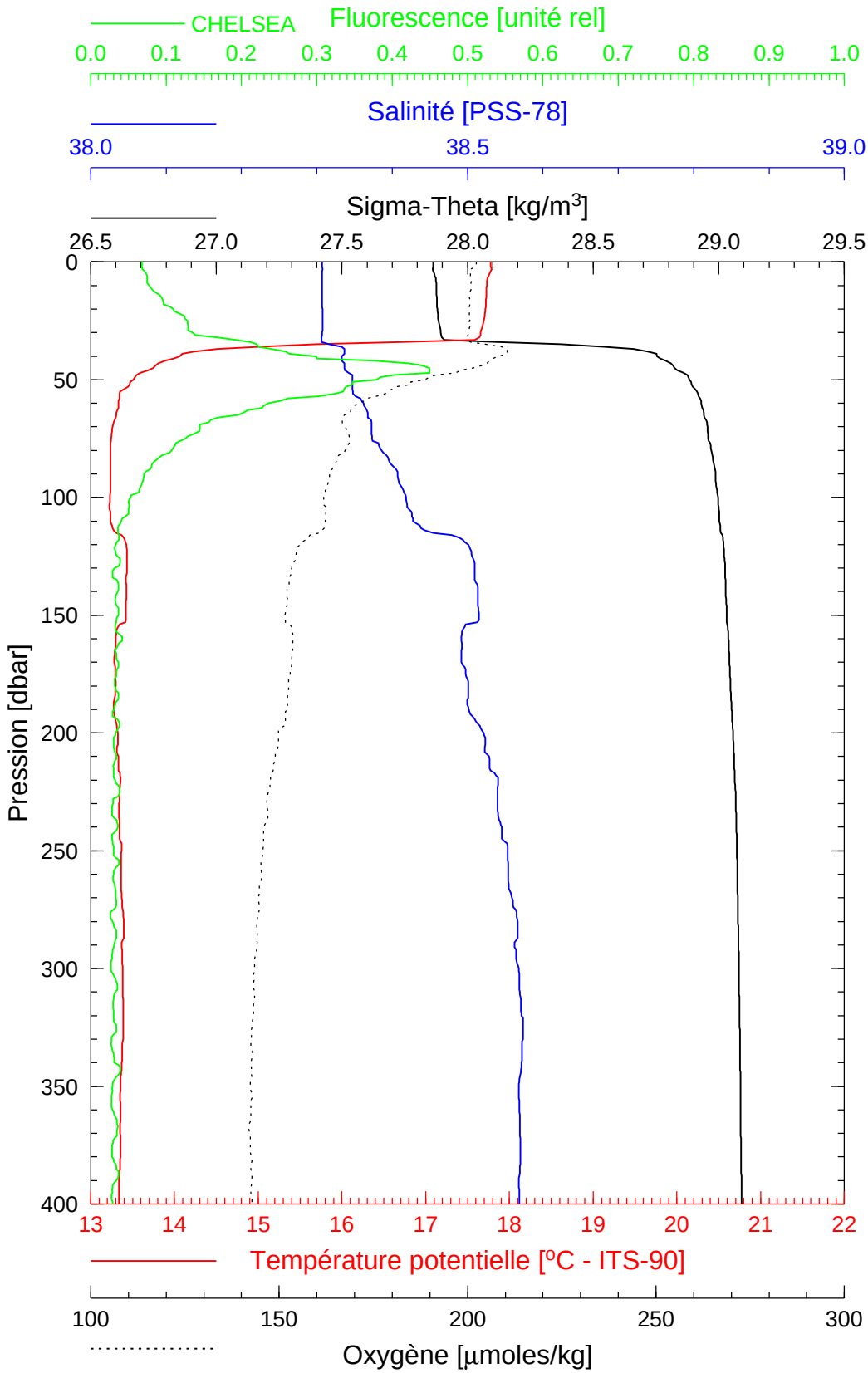
*BOUS001*




| | | | |
|---|---|---|---|
| *Date* | *03/11/2001* | *Latitude* | *43º40.625 N* |
| *Heure déb* | *13h 08min [TU]* | *Longitude* | *07º18.847 E* |

**Boussole 04** **04/11/2001** **BOUS011104_01**

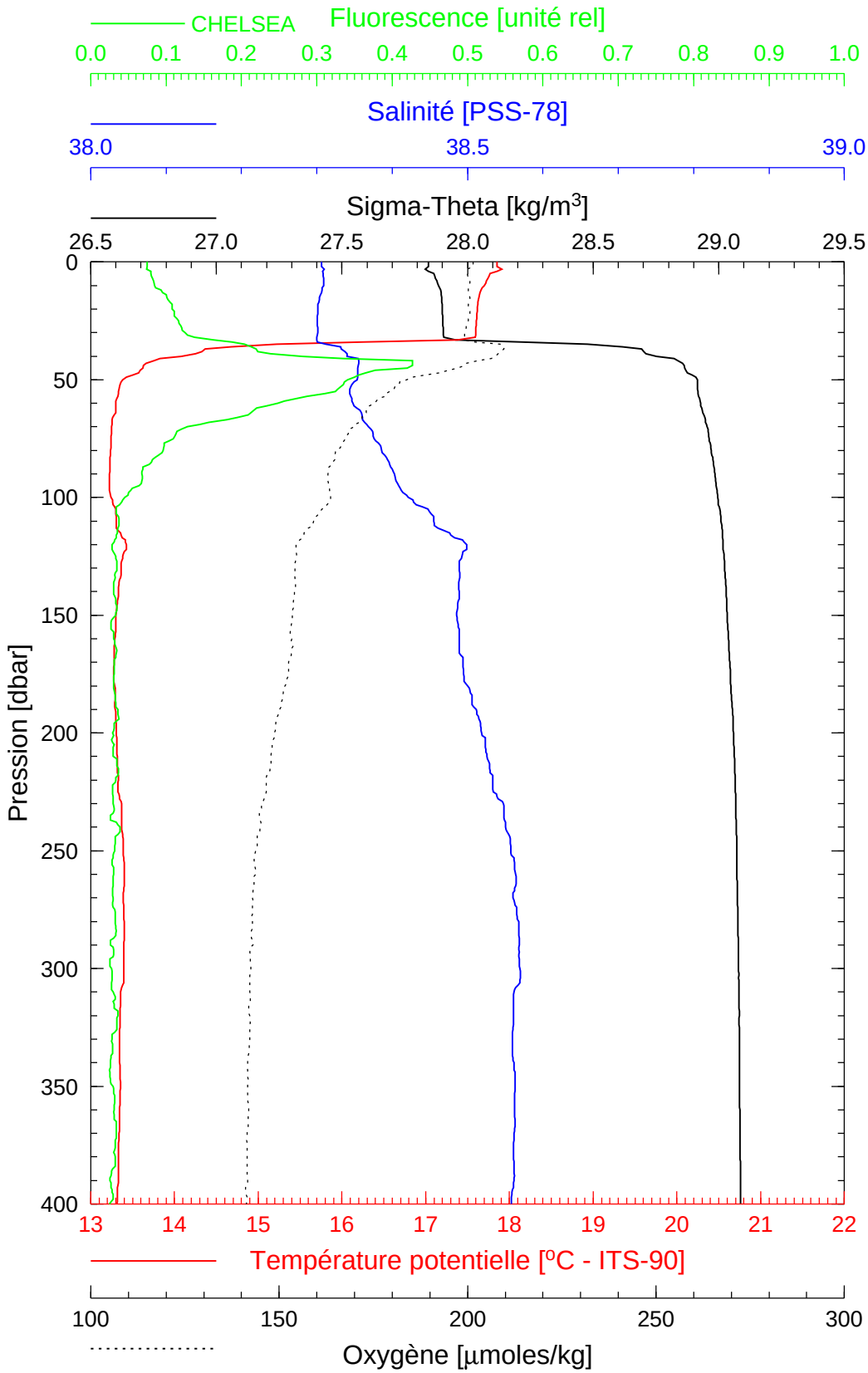
*BOUS002*




| | | | |
|---|---|---|---|
| *Date* | *04/11/2001* | *Latitude* | *43º22.271 N* |
| *Heure déb* | *10h 04min [TU]* | *Longitude* | *07º54.539 E* |

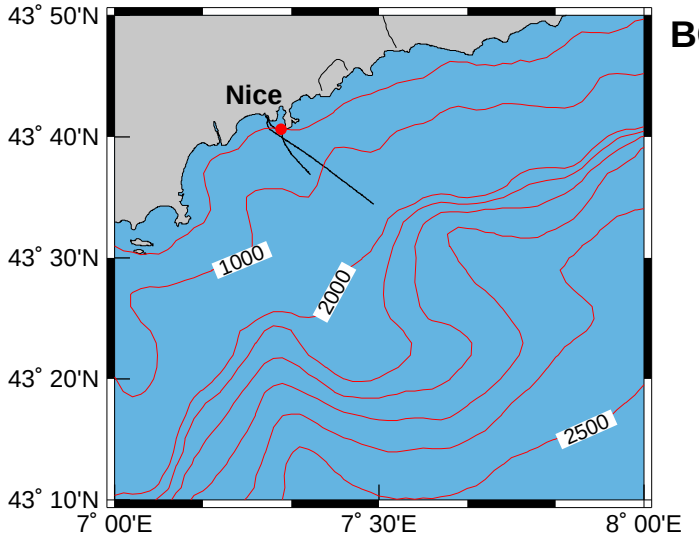
**Boussole 04** **04/11/2001** **BOUS011104_02**

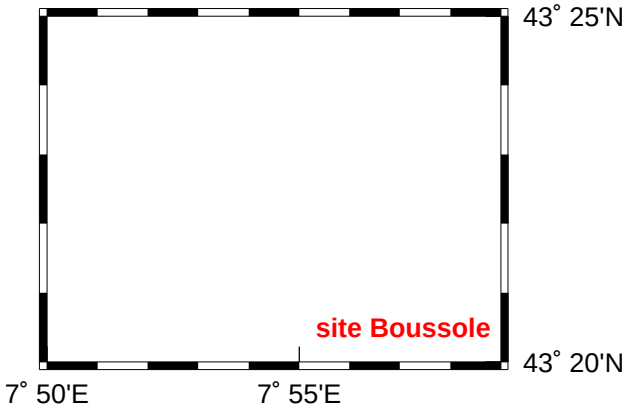
*BOUS003*

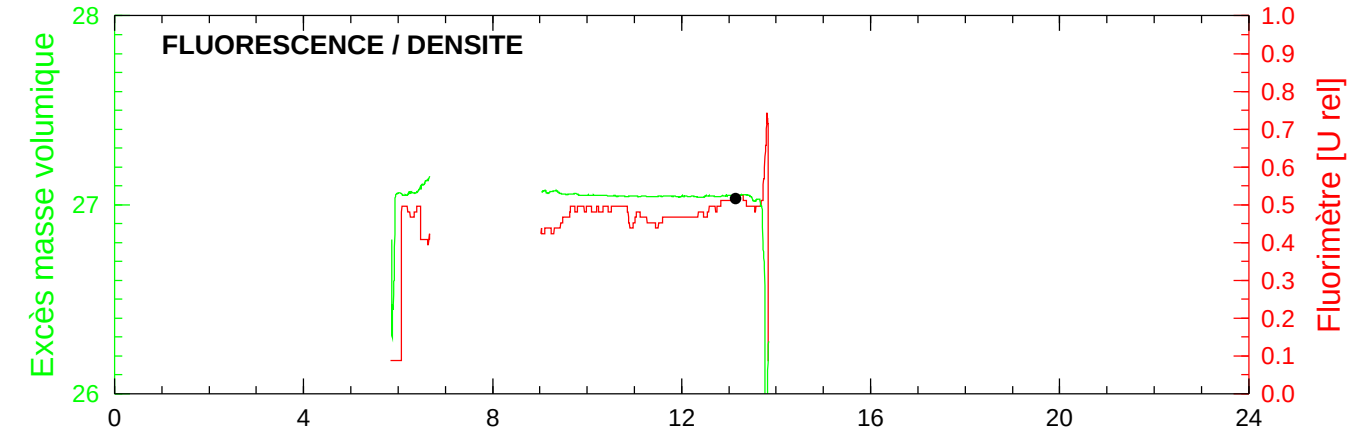


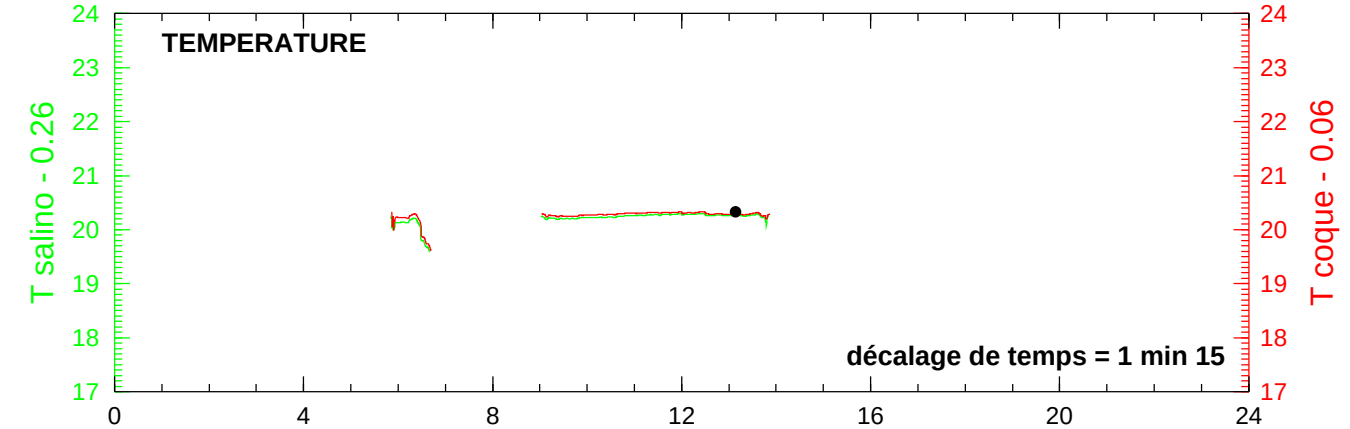

| | | | |
|---|---|---|---|
| *Date* | *04/11/2001* | *Latitude* | *43º21.767 N* |
| *Heure déb* | *13h 14min [TU]* | *Longitude* | *07º54.594 E* |

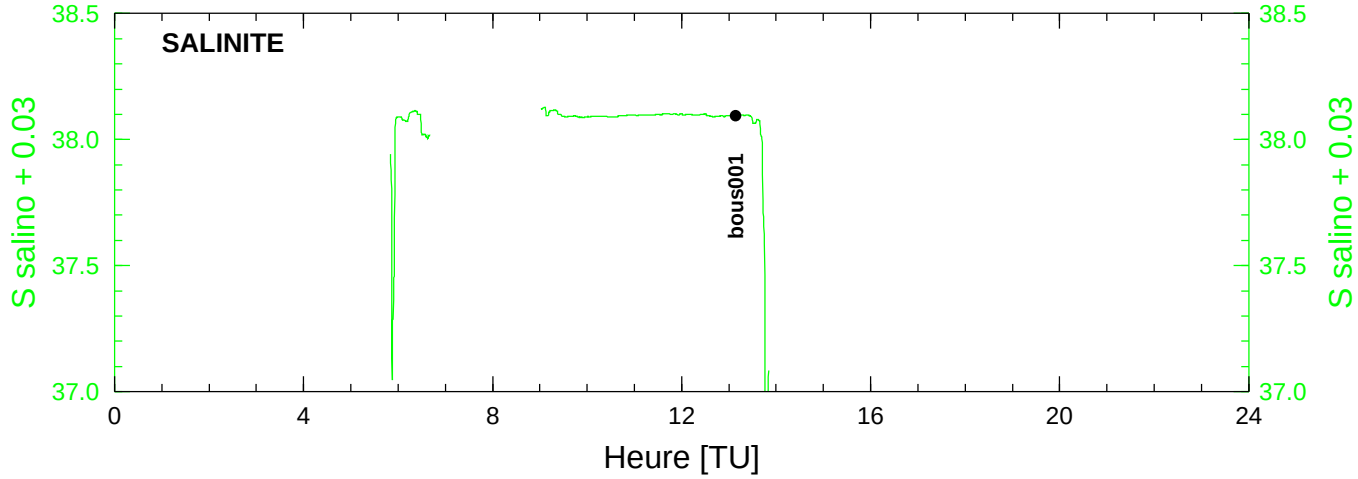
# BOUSSOLE 04 3 novembre 2001

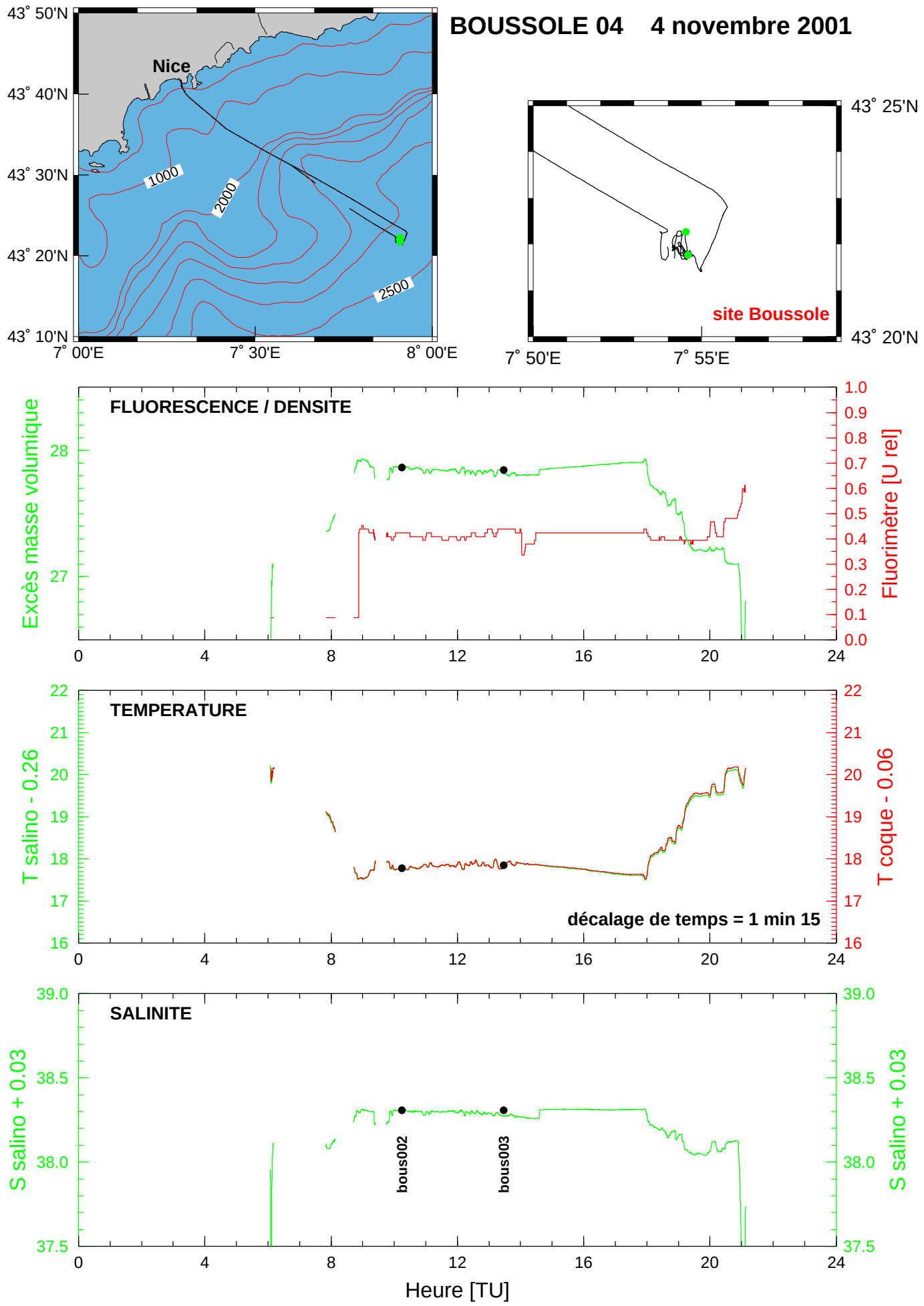


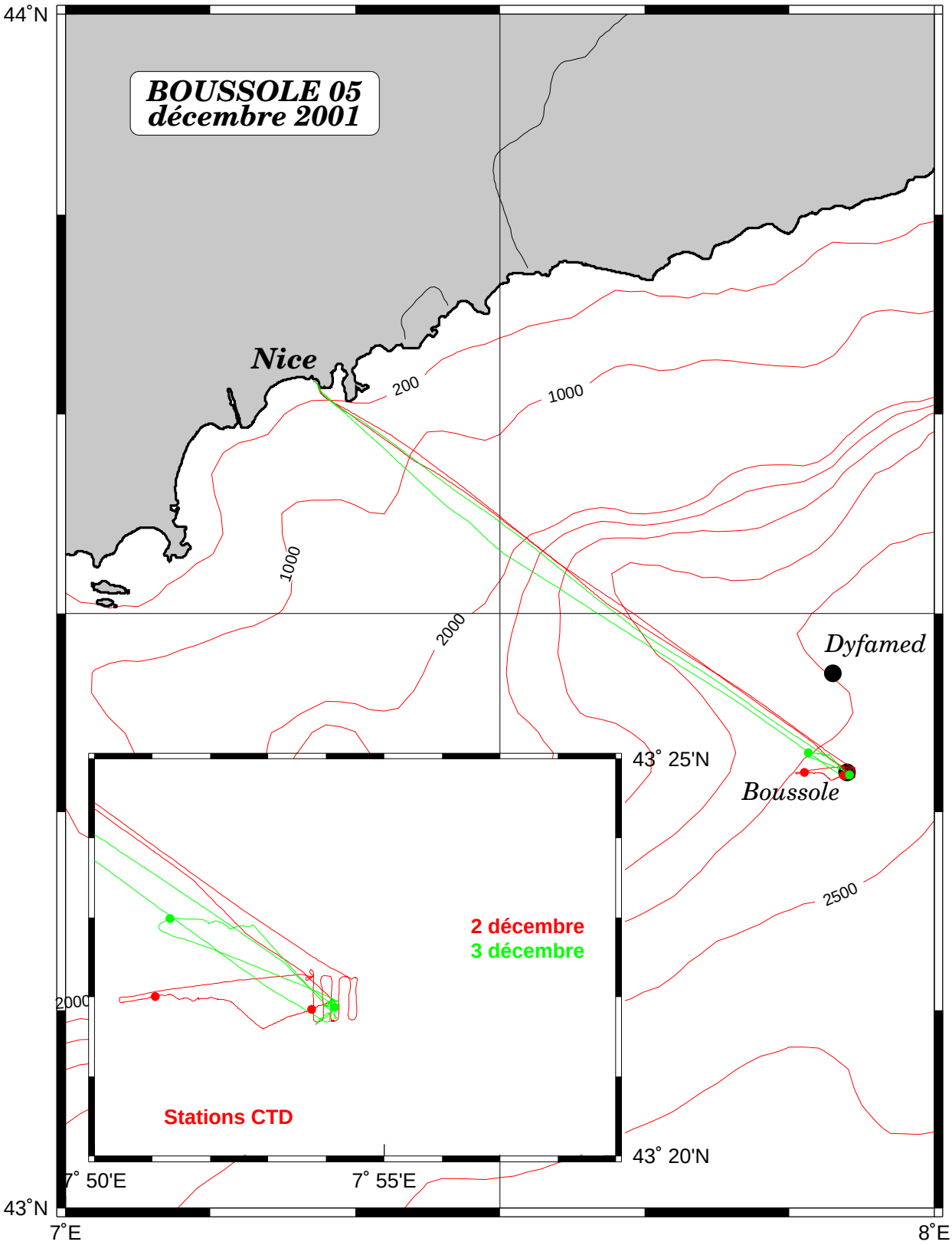



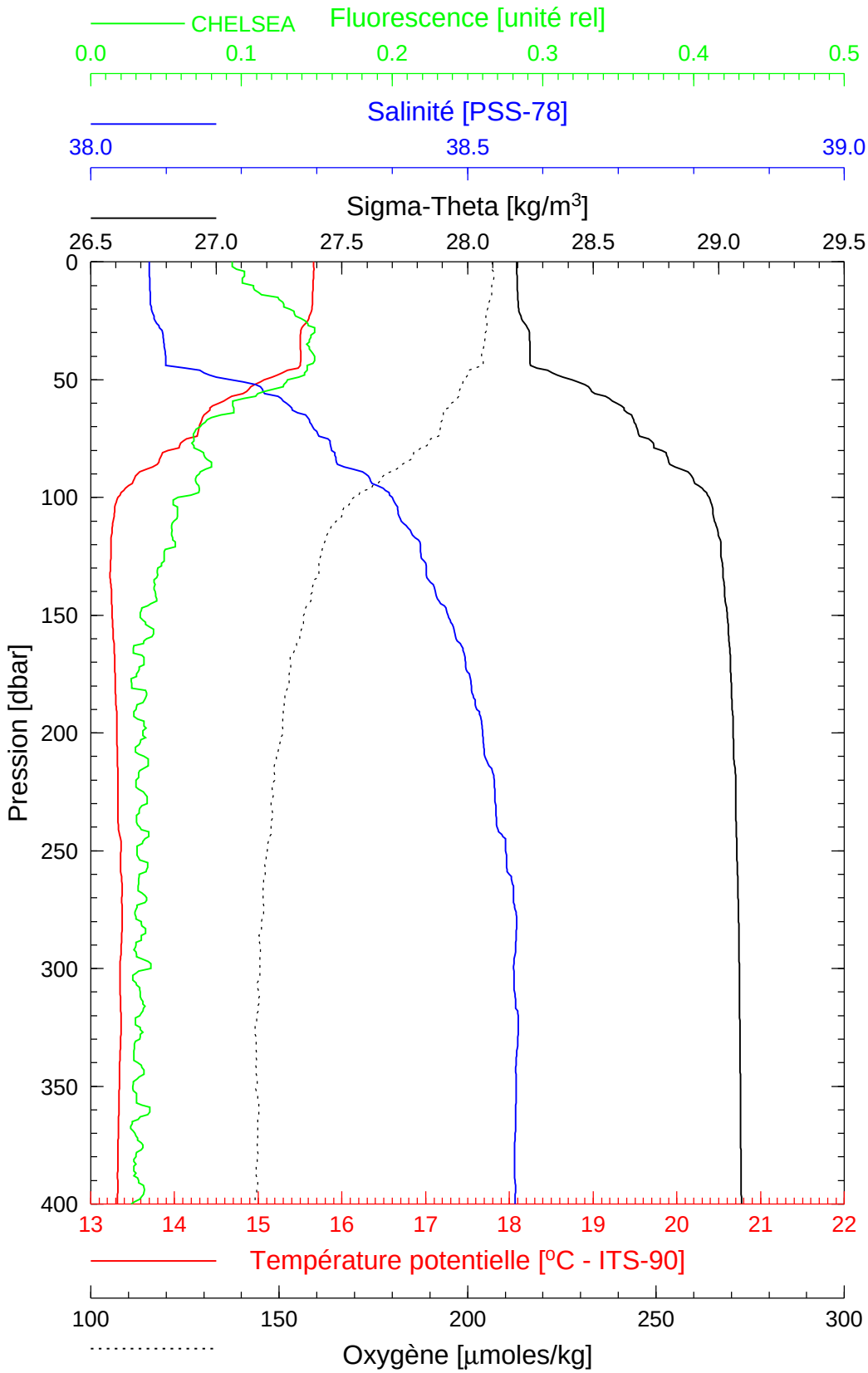

BOUSSOLE 04 4 novembre 2001
Nice
1000
2000
2500
43° 50'N
43° 40'N
43° 30'N
43° 20'N
43° 10'N
7° 00'E
7° 30'E
8° 00'E
site Boussole
43° 25'N
43° 20'N
7° 50'E
7° 55'E
FLUORESCENCE / DENSITE
Excès masse volumique
Fluorimètre [U rel]
TEMPERATURE
T salino - 0.26
T coque - 0.06
décalage de temps = 1 min 15
SALINITE
S salino + 0.03
bous002
bous003
Heure [TU]




GMT 2003 Aug 25 16:05:58

**Boussole 05** **02/12/2001** **BOUS011202_01**

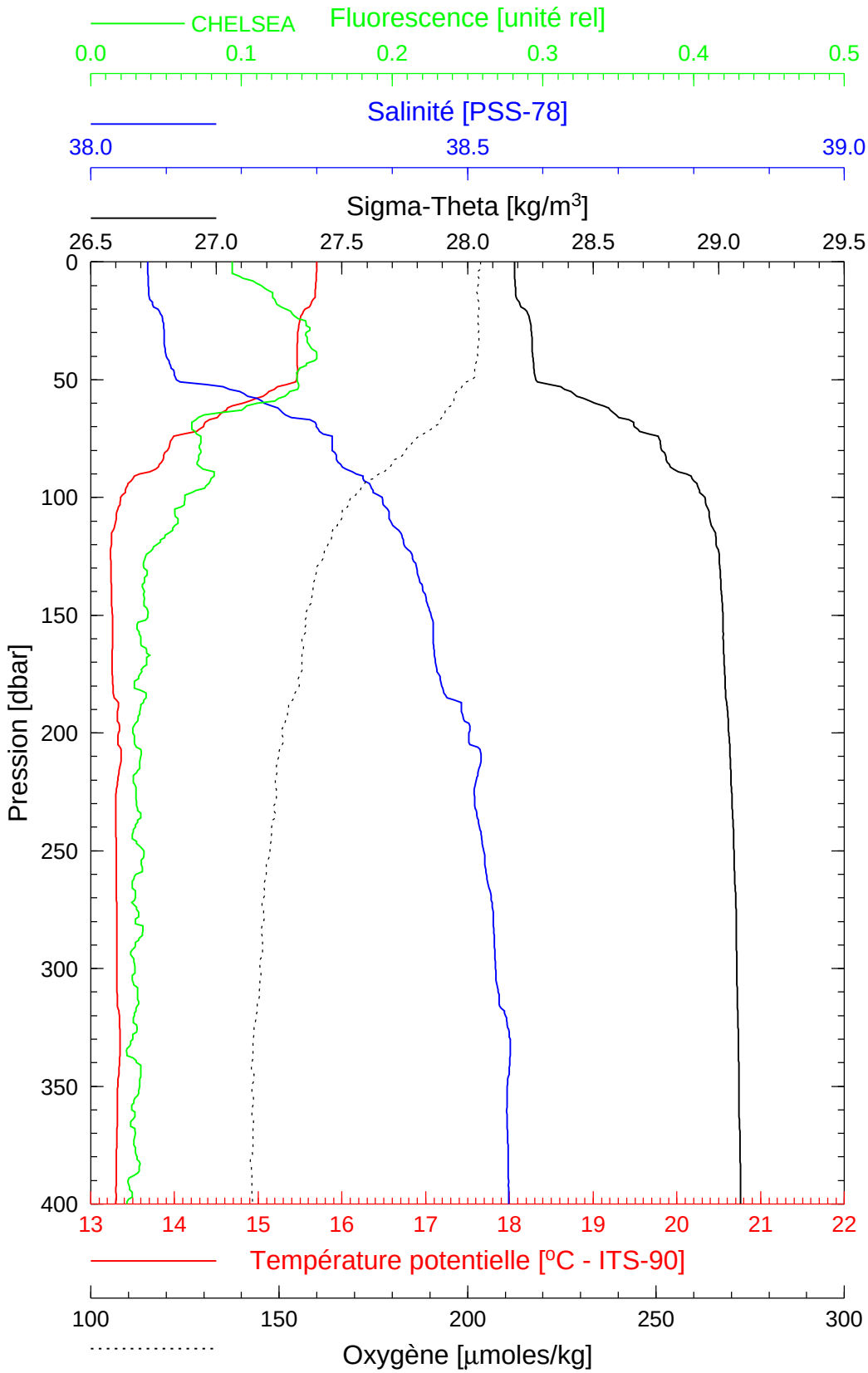
*BOUS001*




| | | | |
|---|---|---|---|
| *Date* | *02/12/2001* | *Latitude* | *43º21.849 N* |
| *Heure déb* | *11h 00min [TU]* | *Longitude* | *07º53.748 E* |

**Boussole 05** **02/12/2001** **BOUS011202_02**

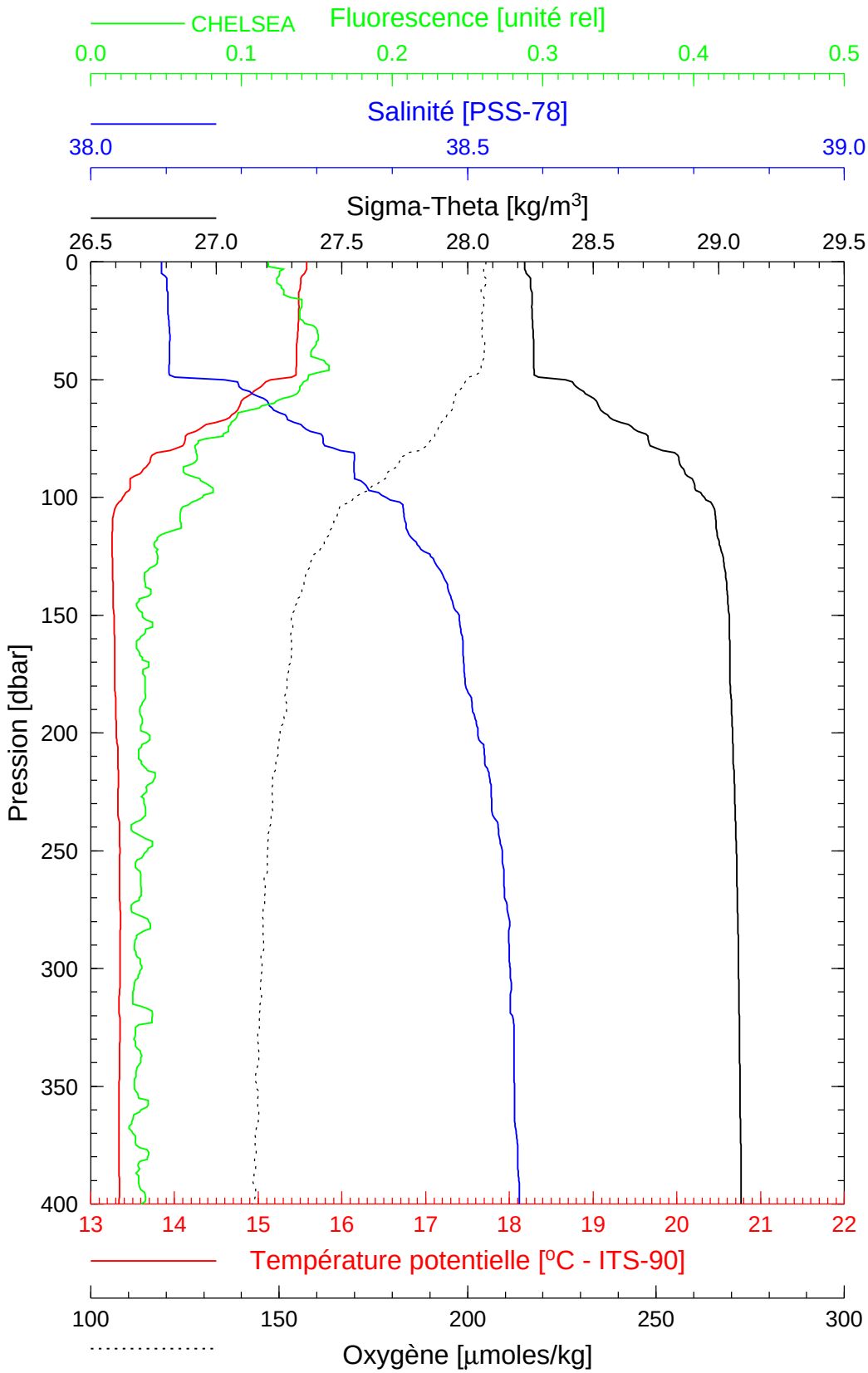
*BOUS002*




| | | | |
|---|---|---|---|
| *Date* | *02/12/2001* | *Latitude* | *43º22.011 N* |
| *Heure déb* | *12h 43min [TU]* | *Longitude* | *07º51.047 E* |

**Boussole 05** **03/12/2001** **BOUS011203_01**

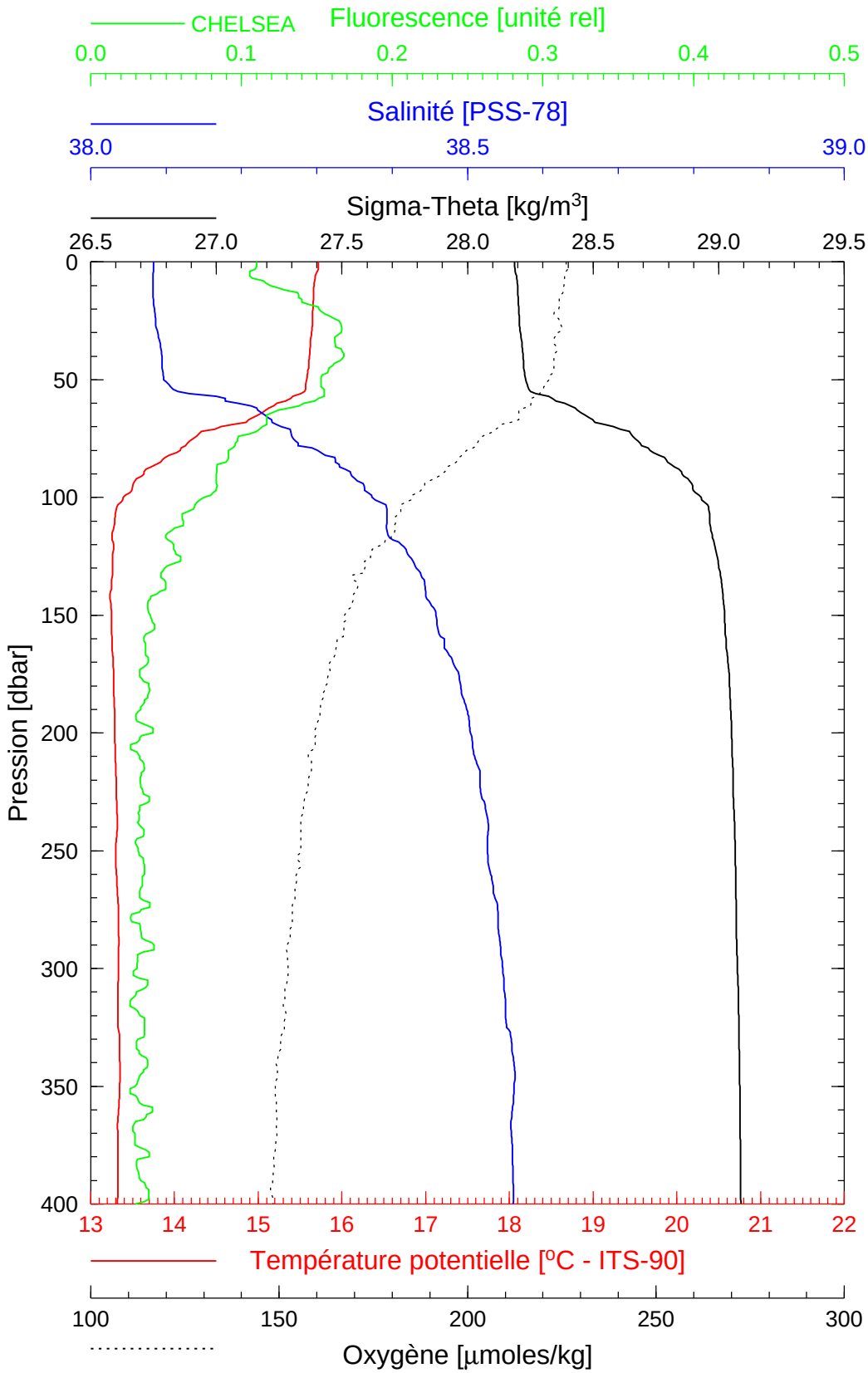
*BOUS003*




| | | | |
|---|---|---|---|
| *Date* | *03/12/2001* | *Latitude* | *43º21.875 N* |
| *Heure déb* | *10h 28min [TU]* | *Longitude* | *07º54.152 E* |

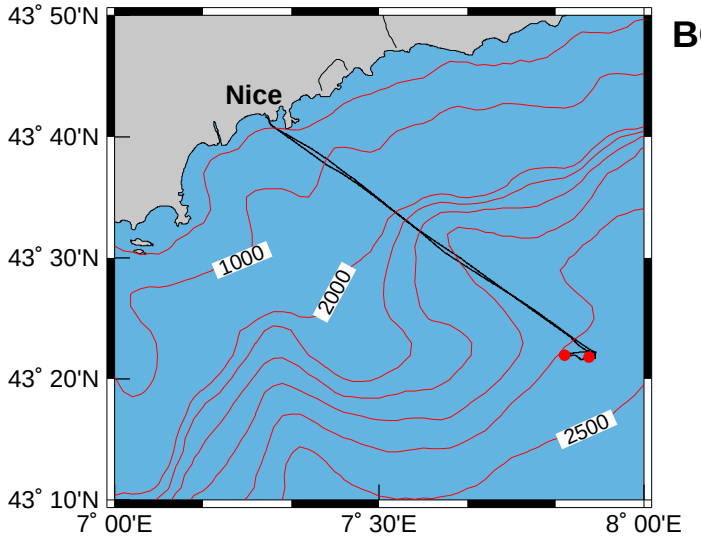
**Boussole 05** **03/12/2001** **BOUS011203_02**

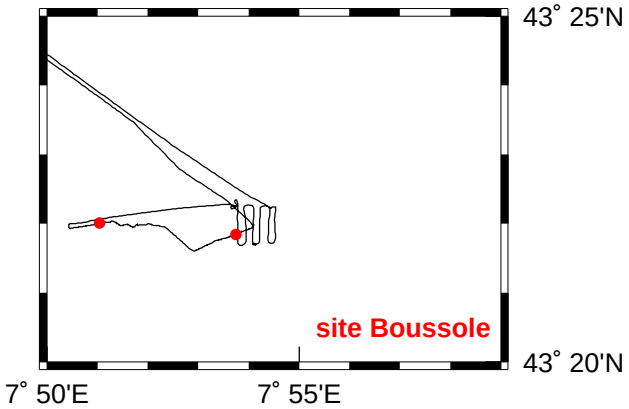
*BOUS004*

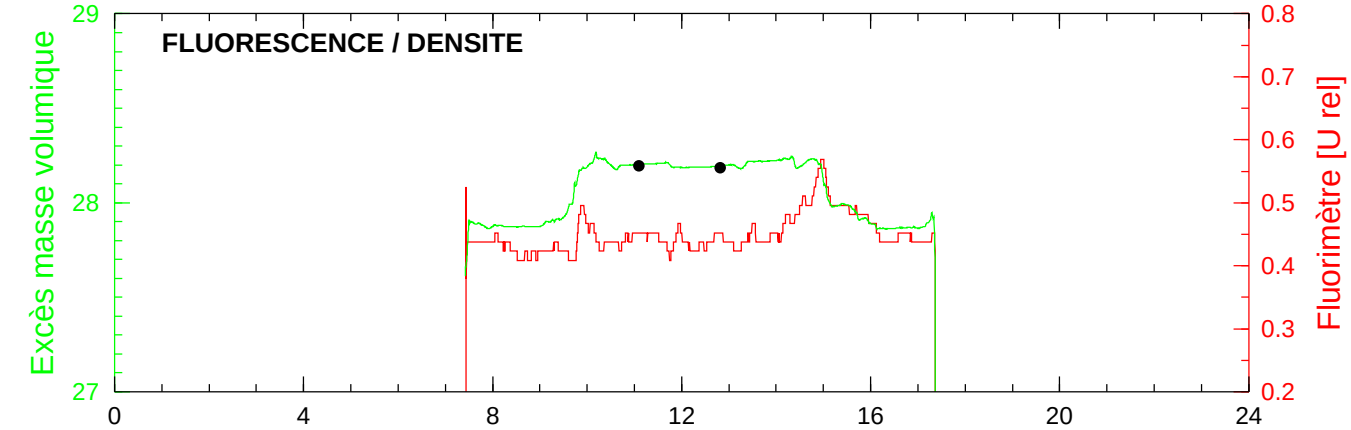


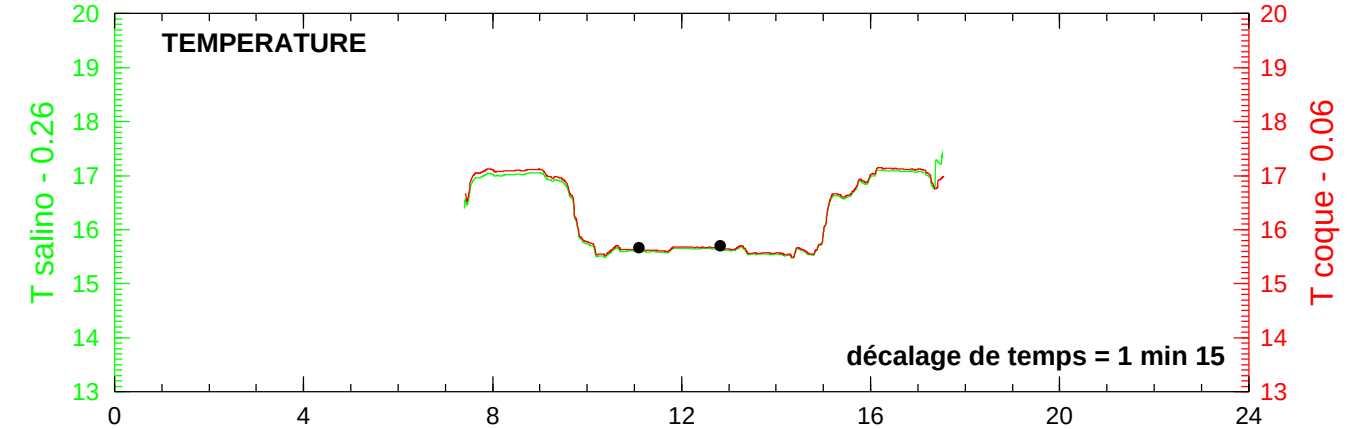

| | | | |
|---|---|---|---|
| *Date* | *03/12/2001* | *Latitude* | *43º22.987 N* |
| *Heure déb* | *12h 15min [TU]* | *Longitude* | *07º51.305 E* |

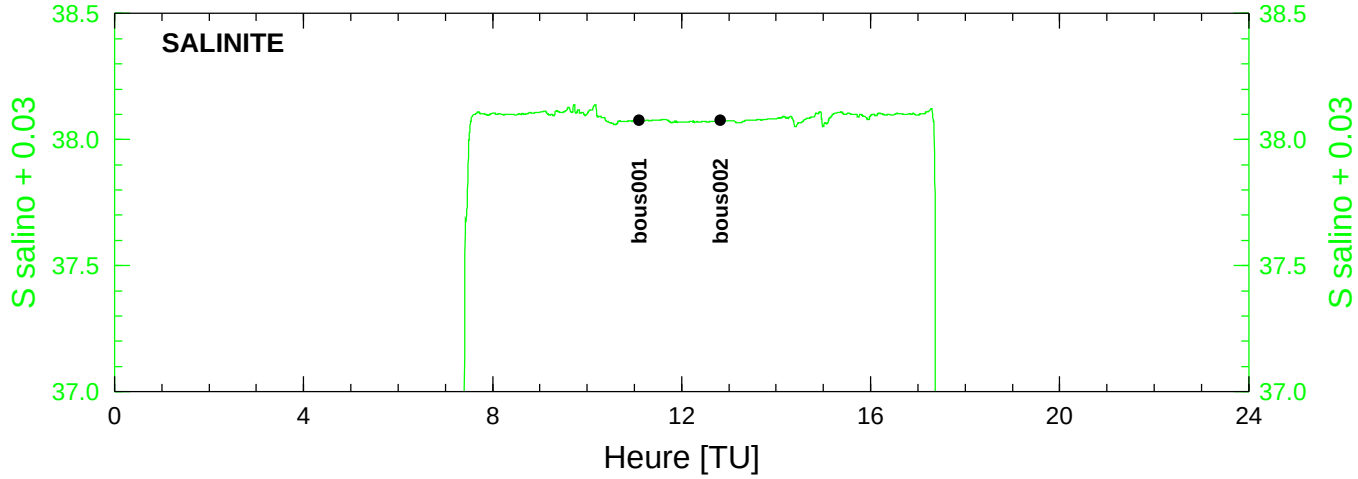
# BOUSSOLE 05 2 décembre 2001



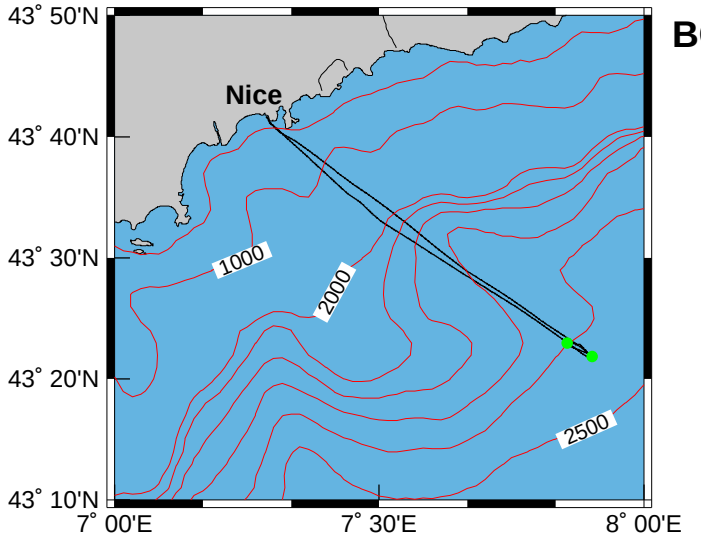



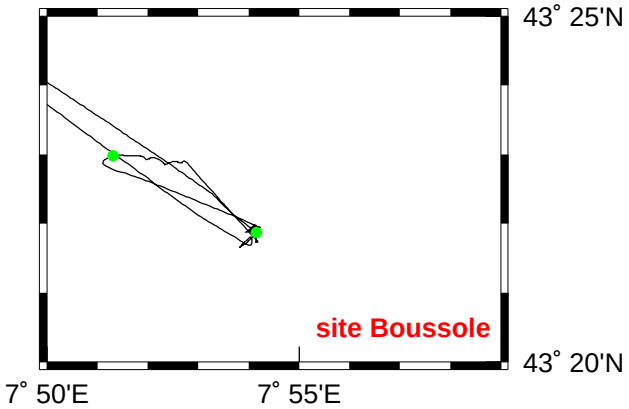



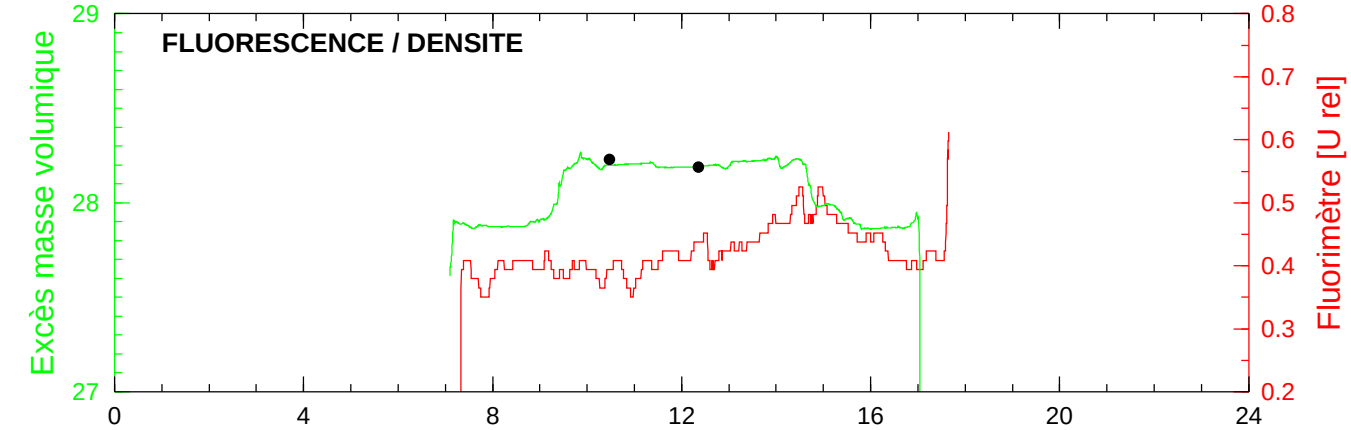



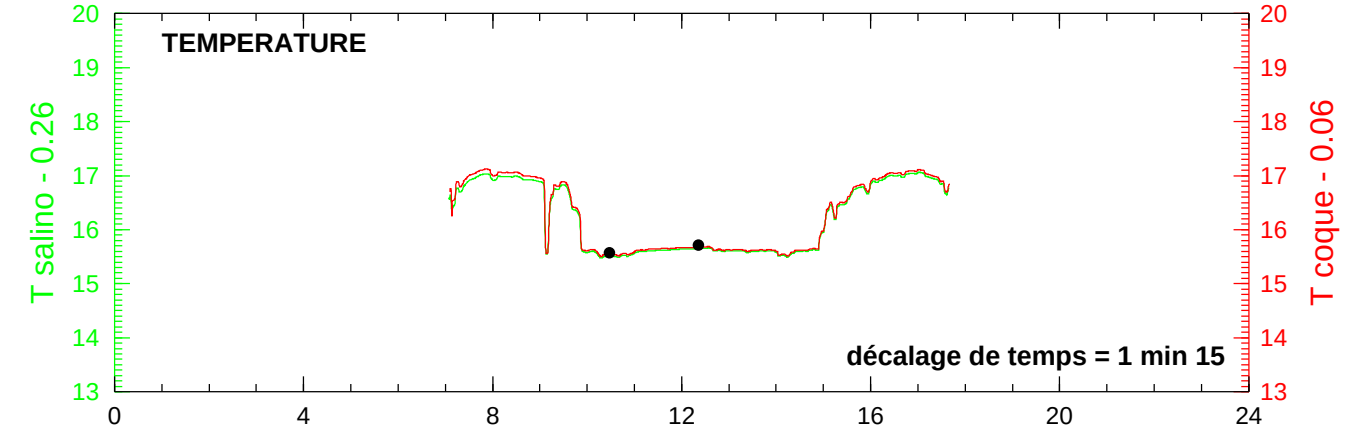



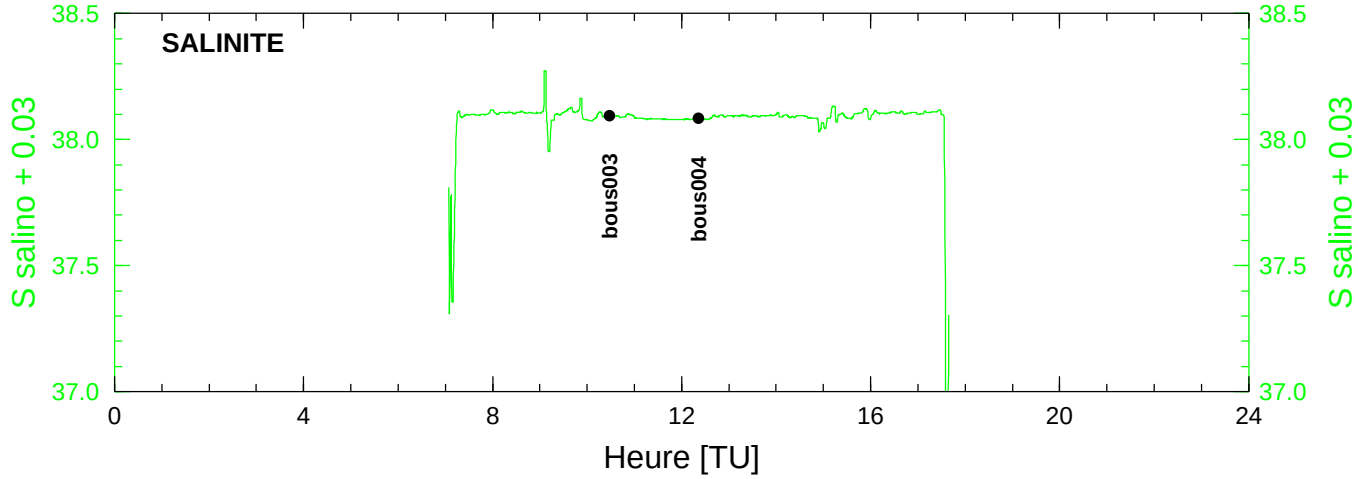
# BOUSSOLE 05 3 décembre 2001

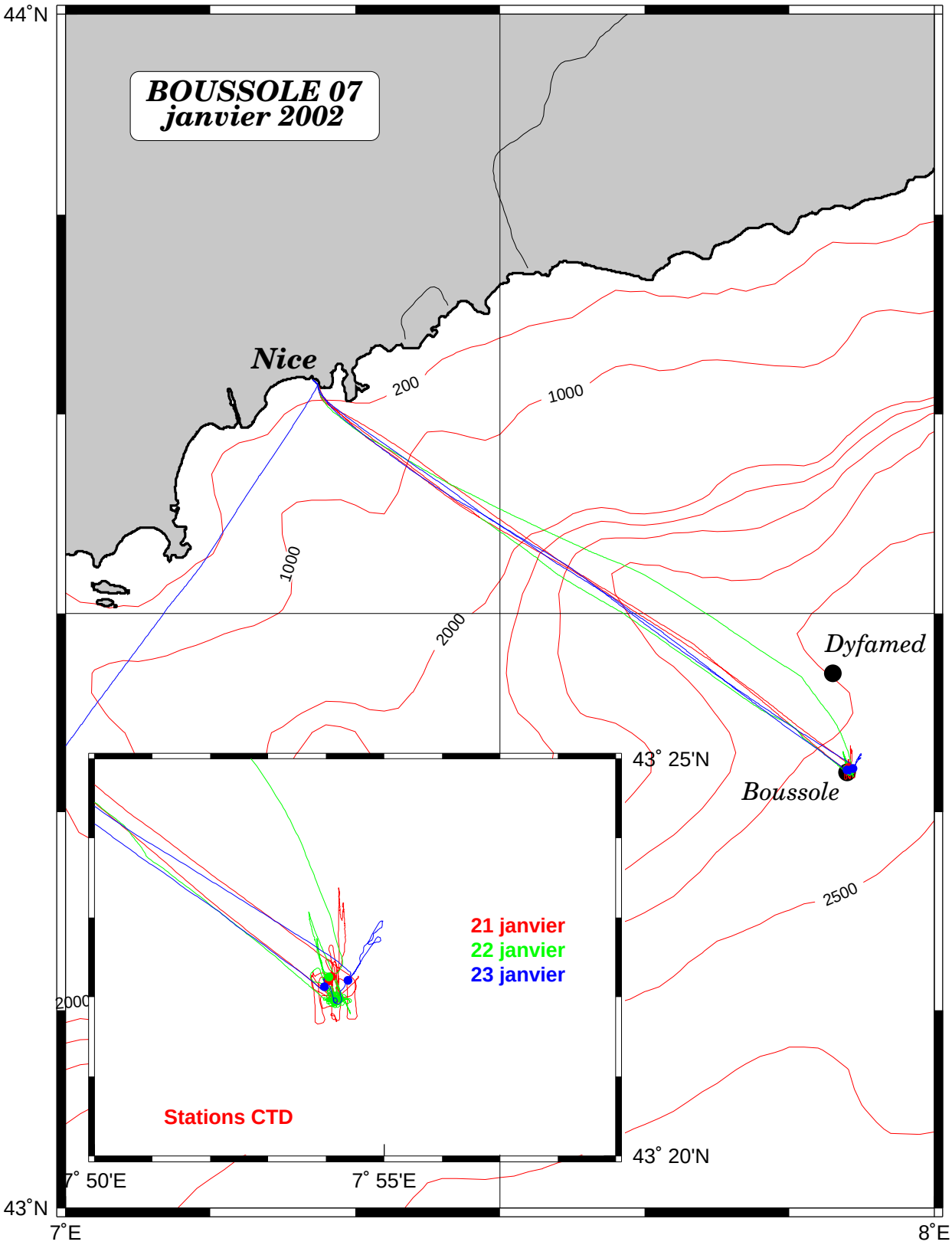


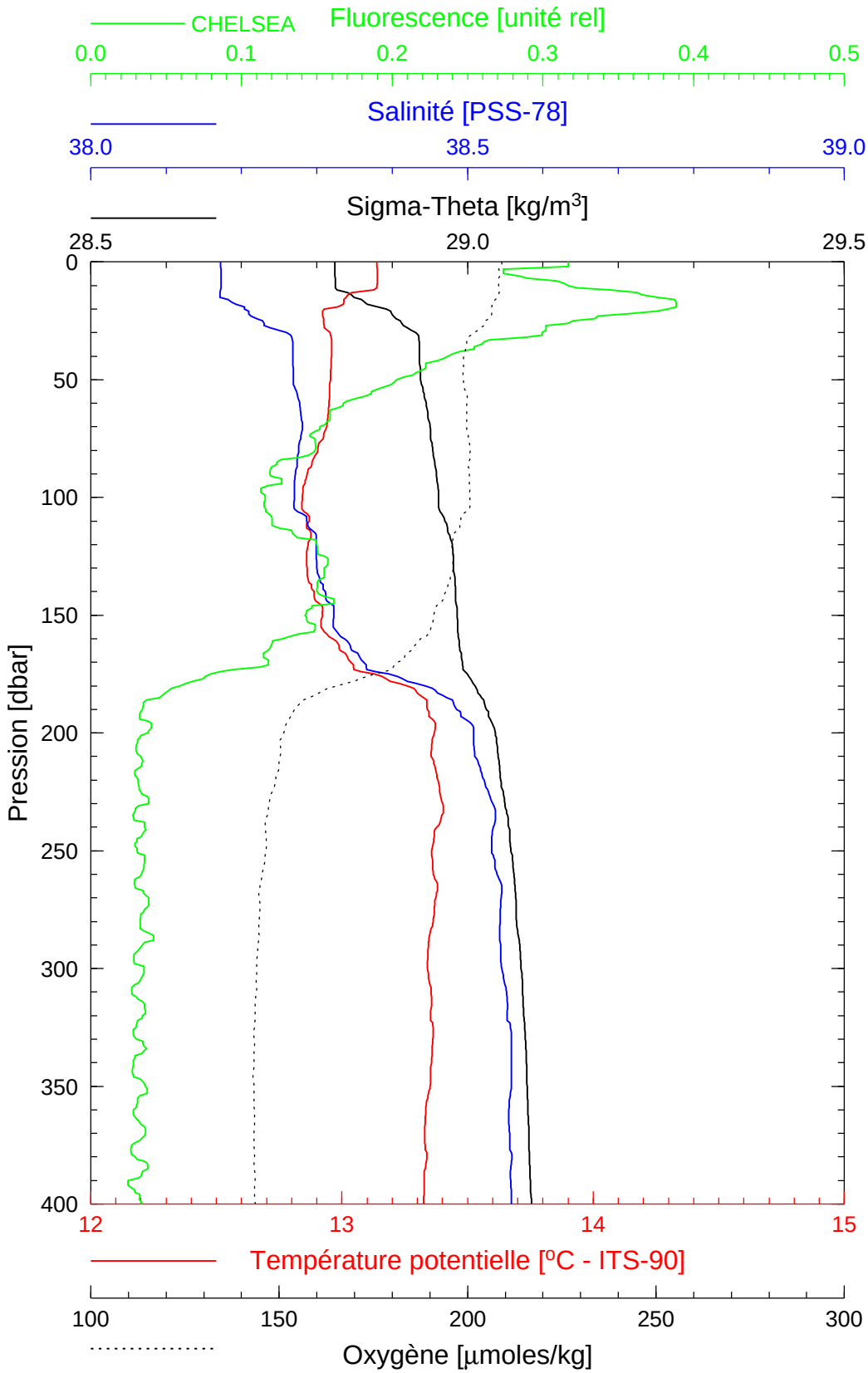






GMT 2003 Aug 28 15:51:21

**Boussole 07** **21/01/2002** **BOUS020121_01**

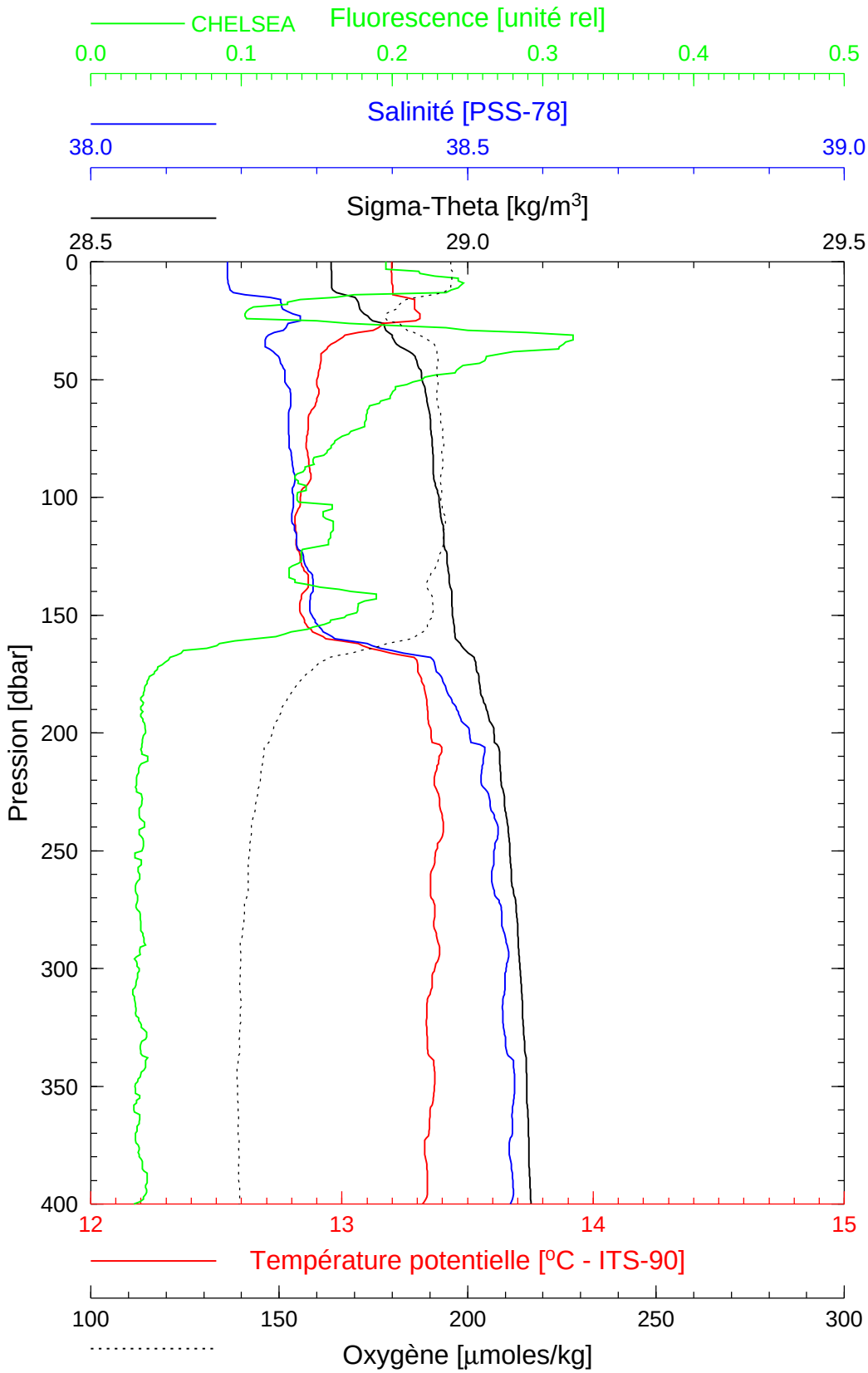
*BOUS001*




| | | | |
|---|---|---|---|
| *Date* | *21/01/2002* | *Latitude* | *43º22.205 N* |
| *Heure déb* | *10h 17min [TU]* | *Longitude* | *07º54.044 E* |

**Boussole 07** **21/01/2002** **BOUS020121_02**

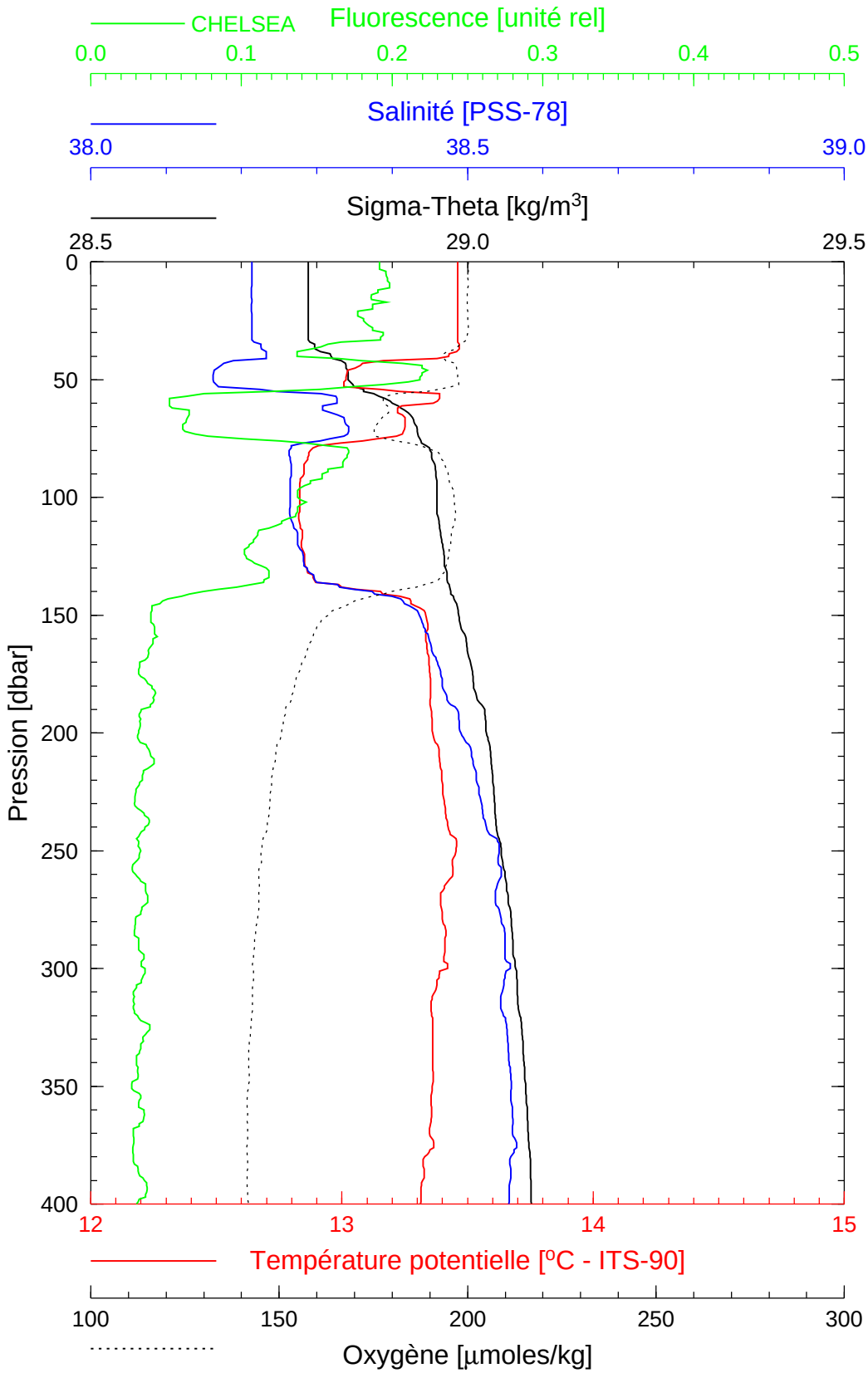
*BOUS002*




| | | | |
|---|---|---|---|
| *Date* | *21/01/2002* | *Latitude* | *43º22.962 N* |
| *Heure déb* | *13h 20min [TU]* | *Longitude* | *07º54.401 E* |

**Boussole 07** **22/01/2002** **BOUS020122_01**

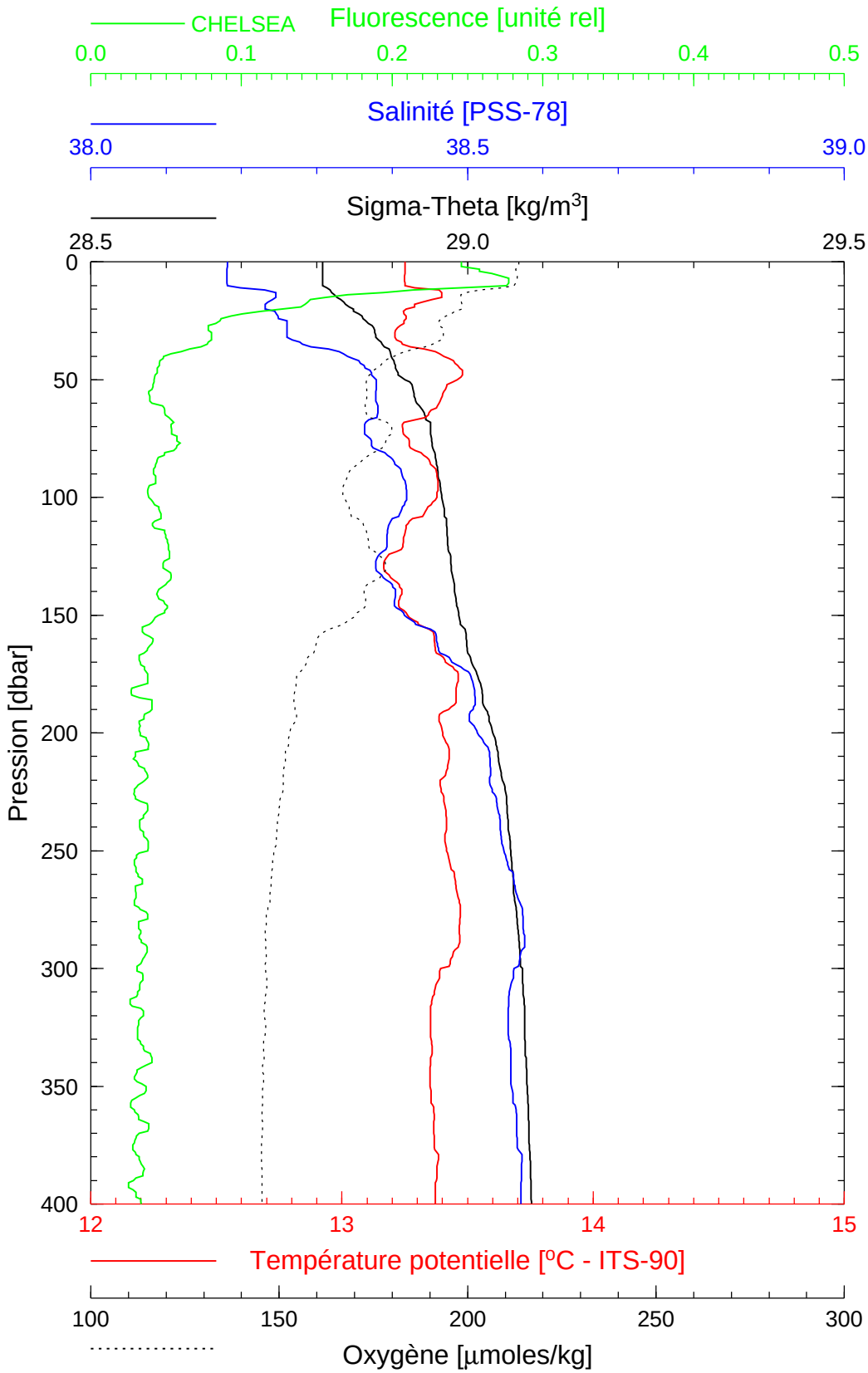
*BOUS003*




| | | | |
|---|---|---|---|
| *Date* | *22/01/2002* | *Latitude* | *43º22.255 N* |
| *Heure déb* | *10h 25min [TU]* | *Longitude* | *07º54.044 E* |

**Boussole 07** **23/01/2002** **BOUS020123_01**

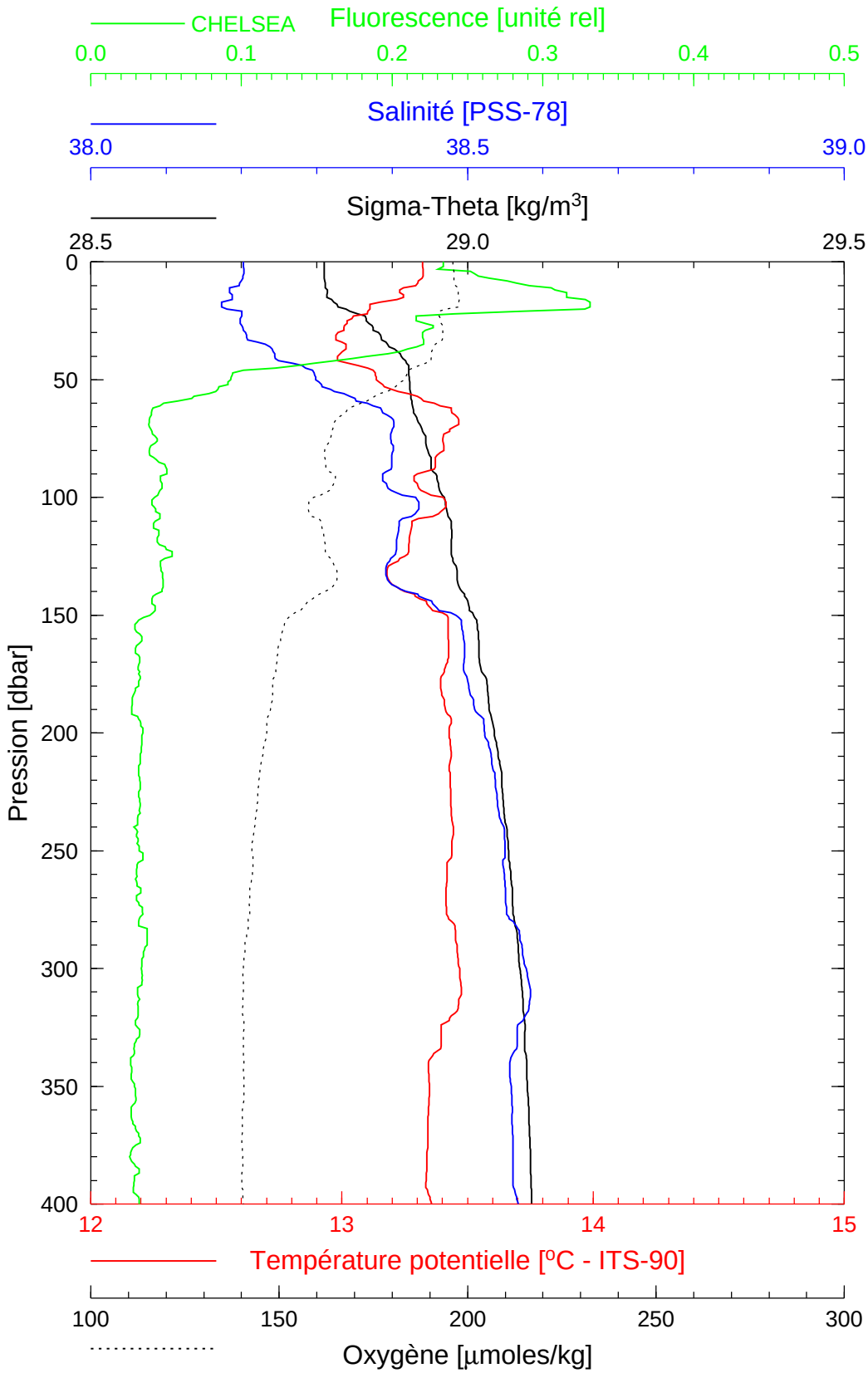
*BOUS004*




| | | | |
|---|---|---|---|
| *Date* | *23/01/2002* | *Latitude* | *43º22.133 N* |
| *Heure déb* | *10h 01min [TU]* | *Longitude* | *07º53.967 E* |

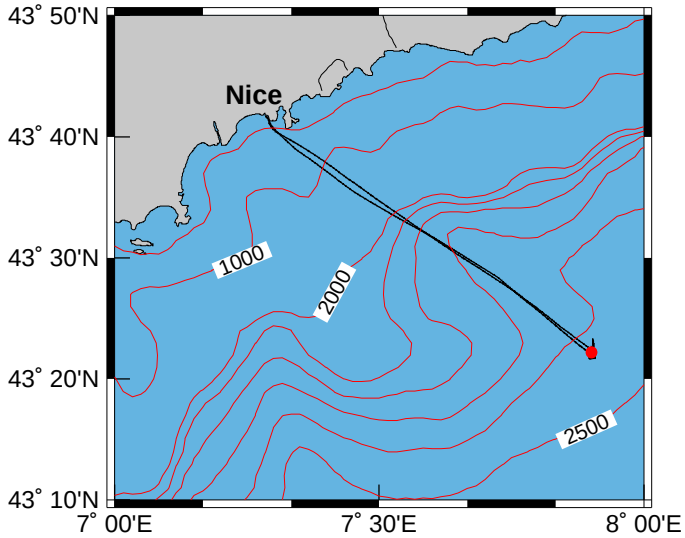
**Boussole 07** **23/01/2002** **BOUS020123_02**

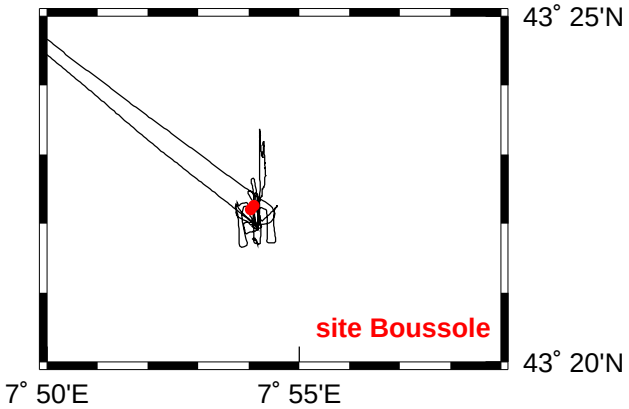
*BOUS005*

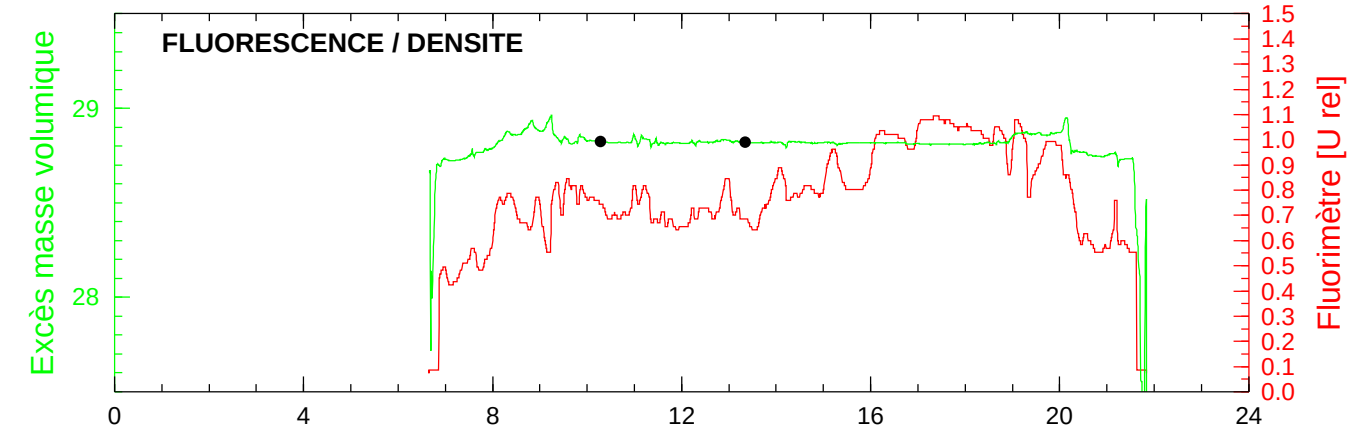


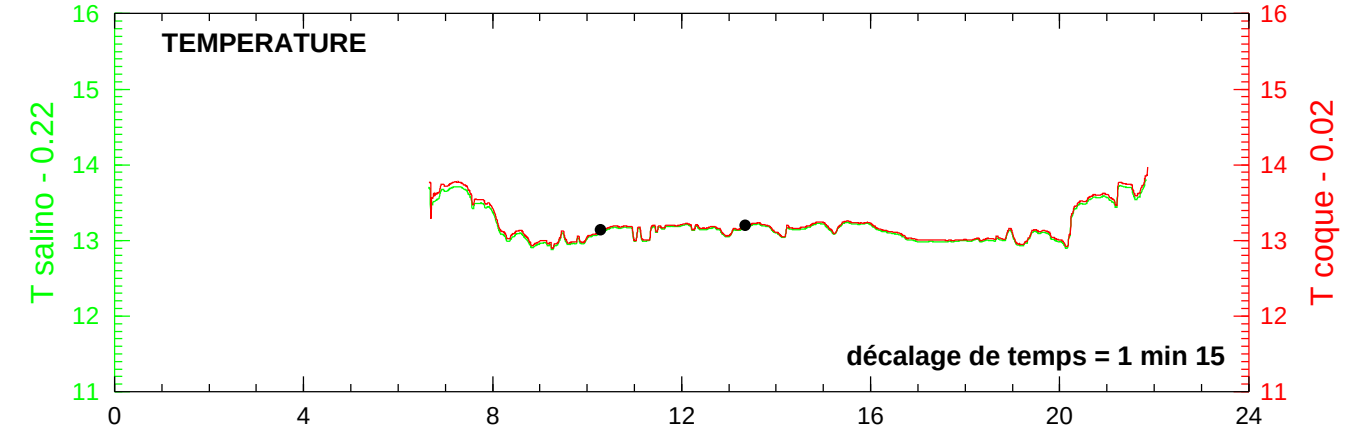

| | | | |
|---|---|---|---|
| *Date* | *23/01/2002* | *Latitude* | *43º22.210 N* |
| *Heure déb* | *12h 19min [TU]* | *Longitude* | *07º54.378 E* |

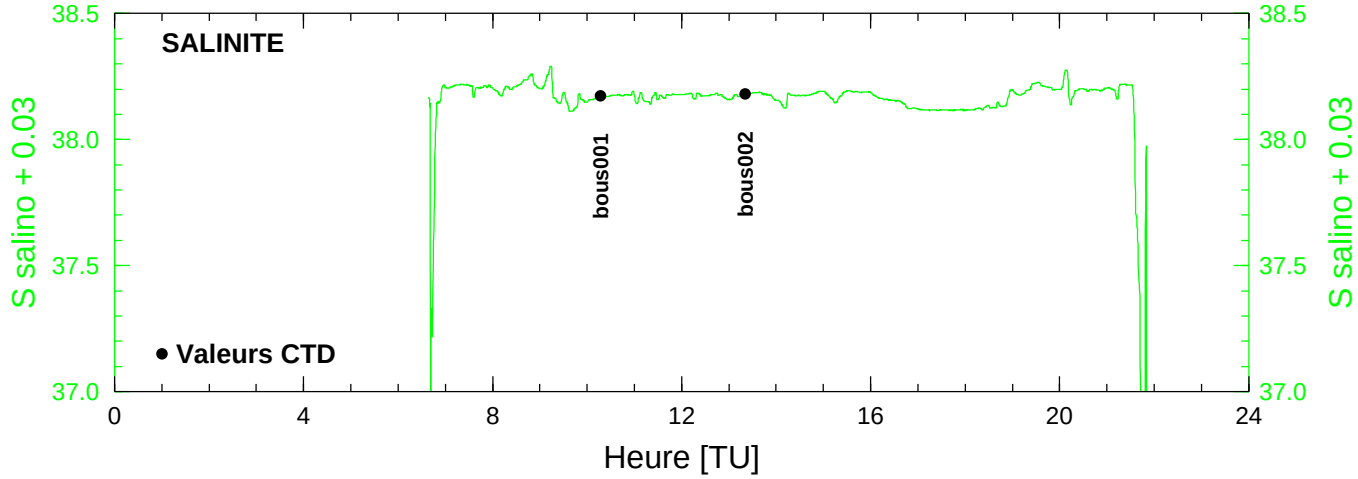
# BOUSSOLE 07 21 janvier 2002



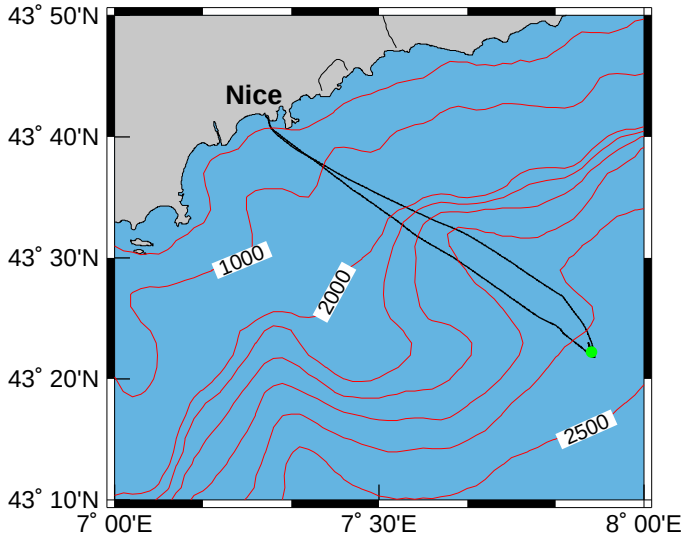



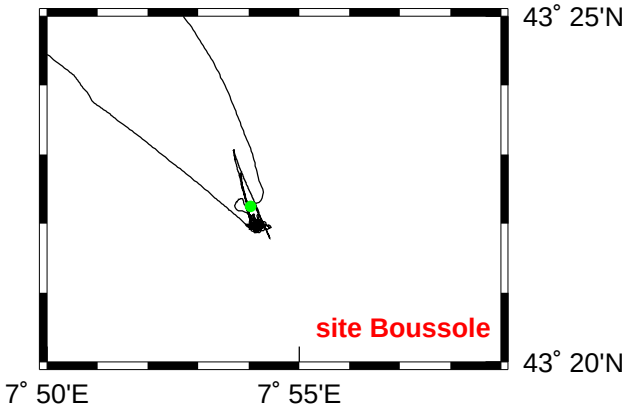



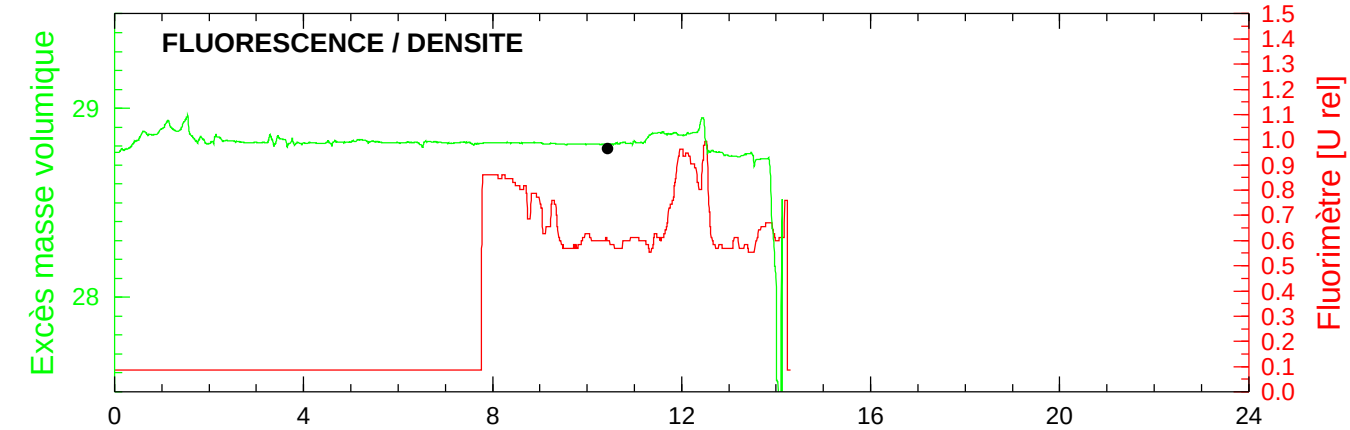



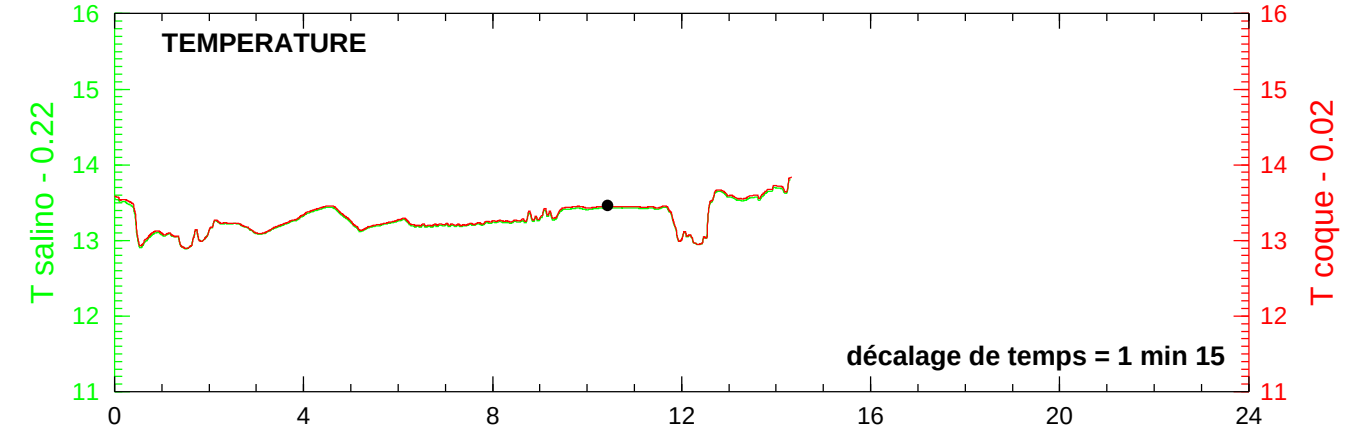



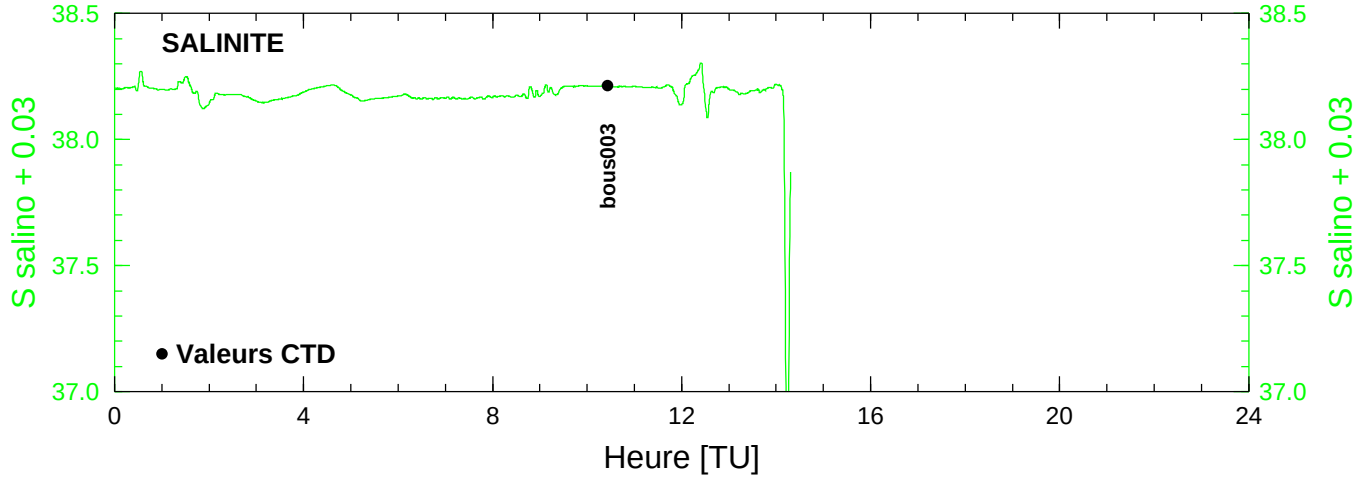
# BOUSSOLE 07 22 janvier 2002



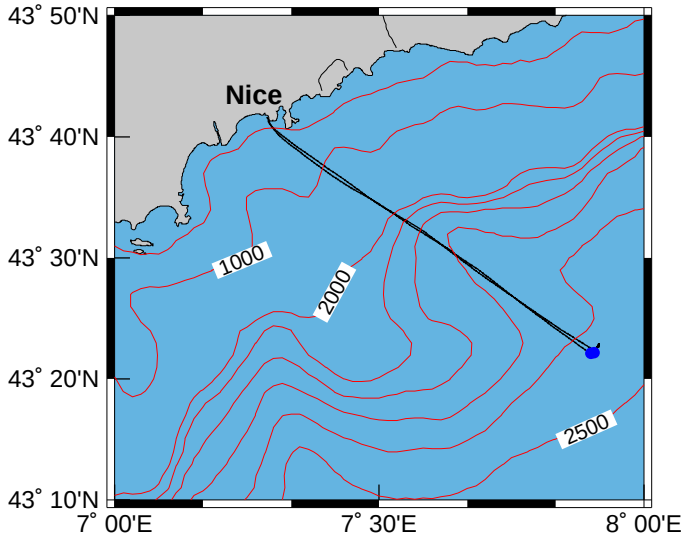



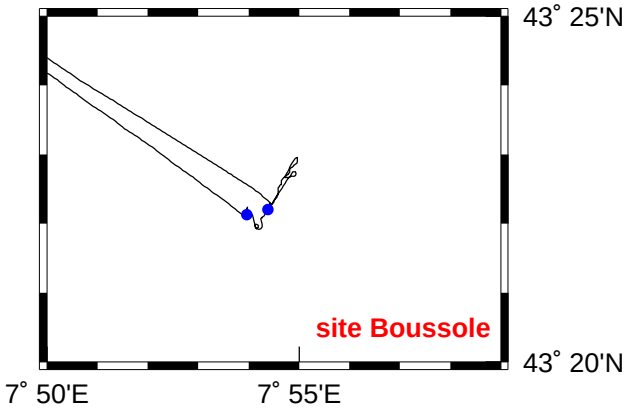



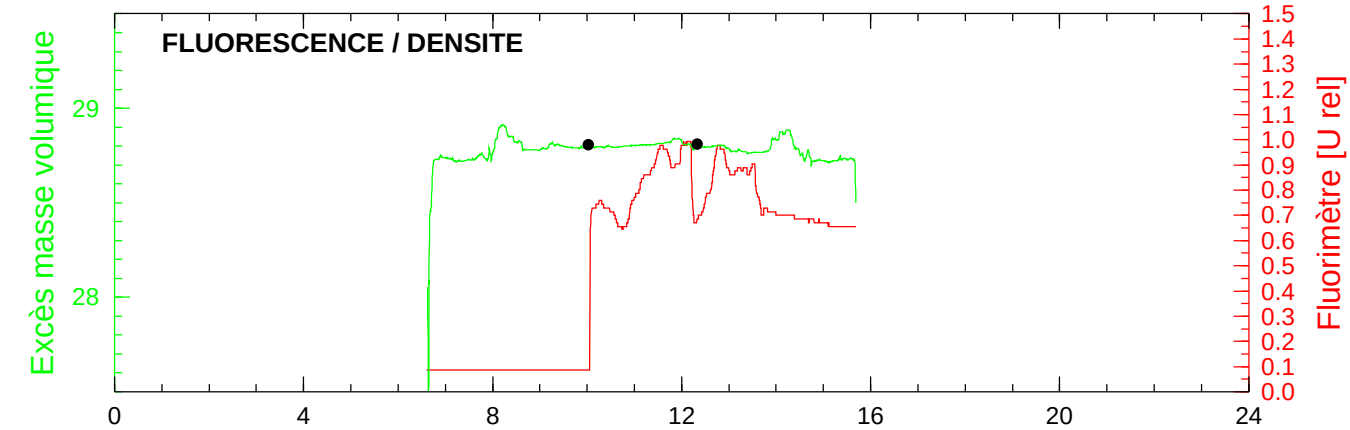



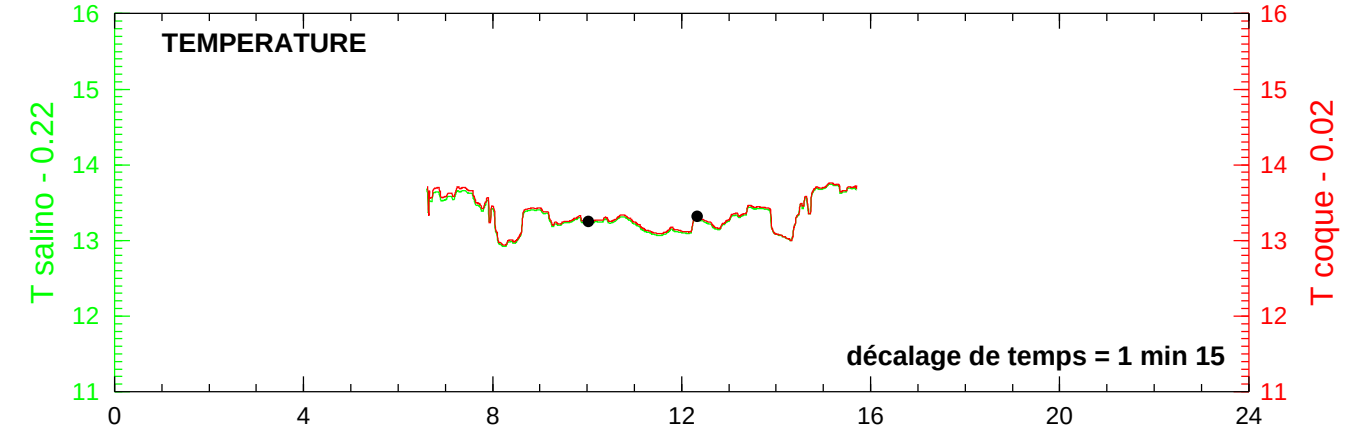



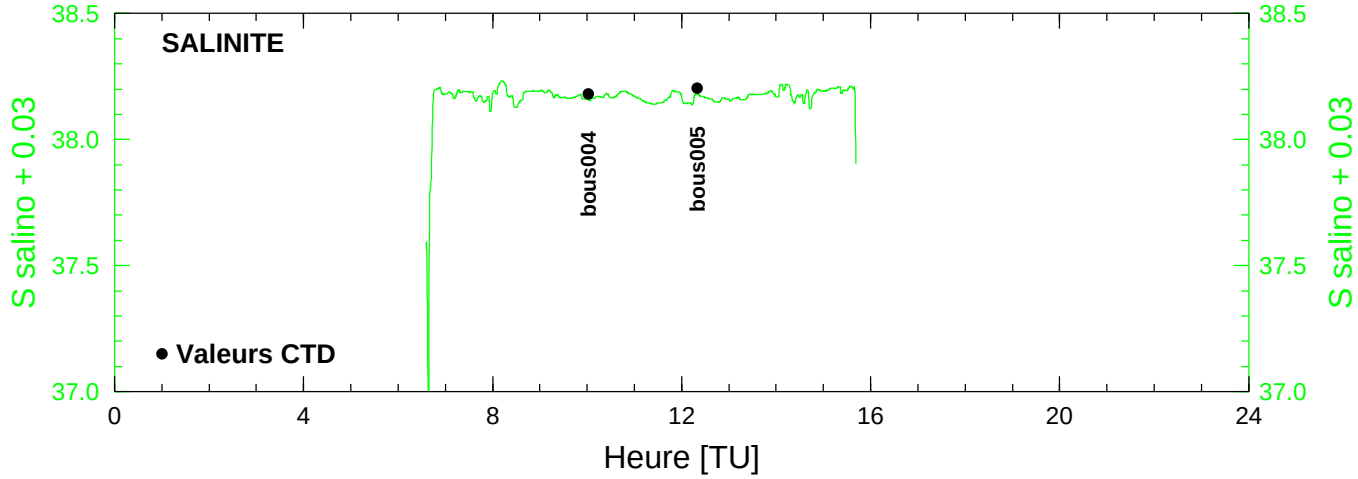
# BOUSSOLE 07 23 janvier 2002

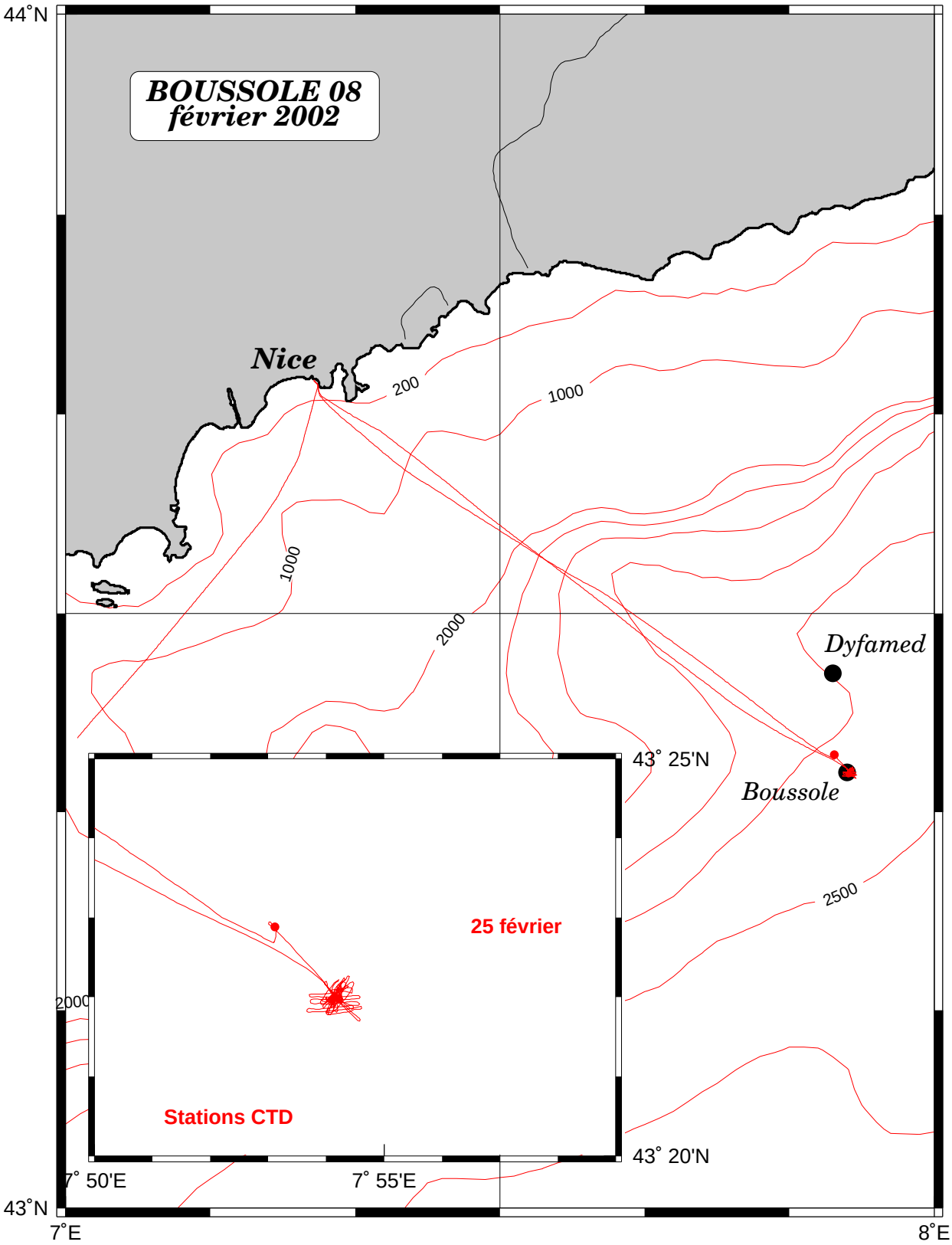


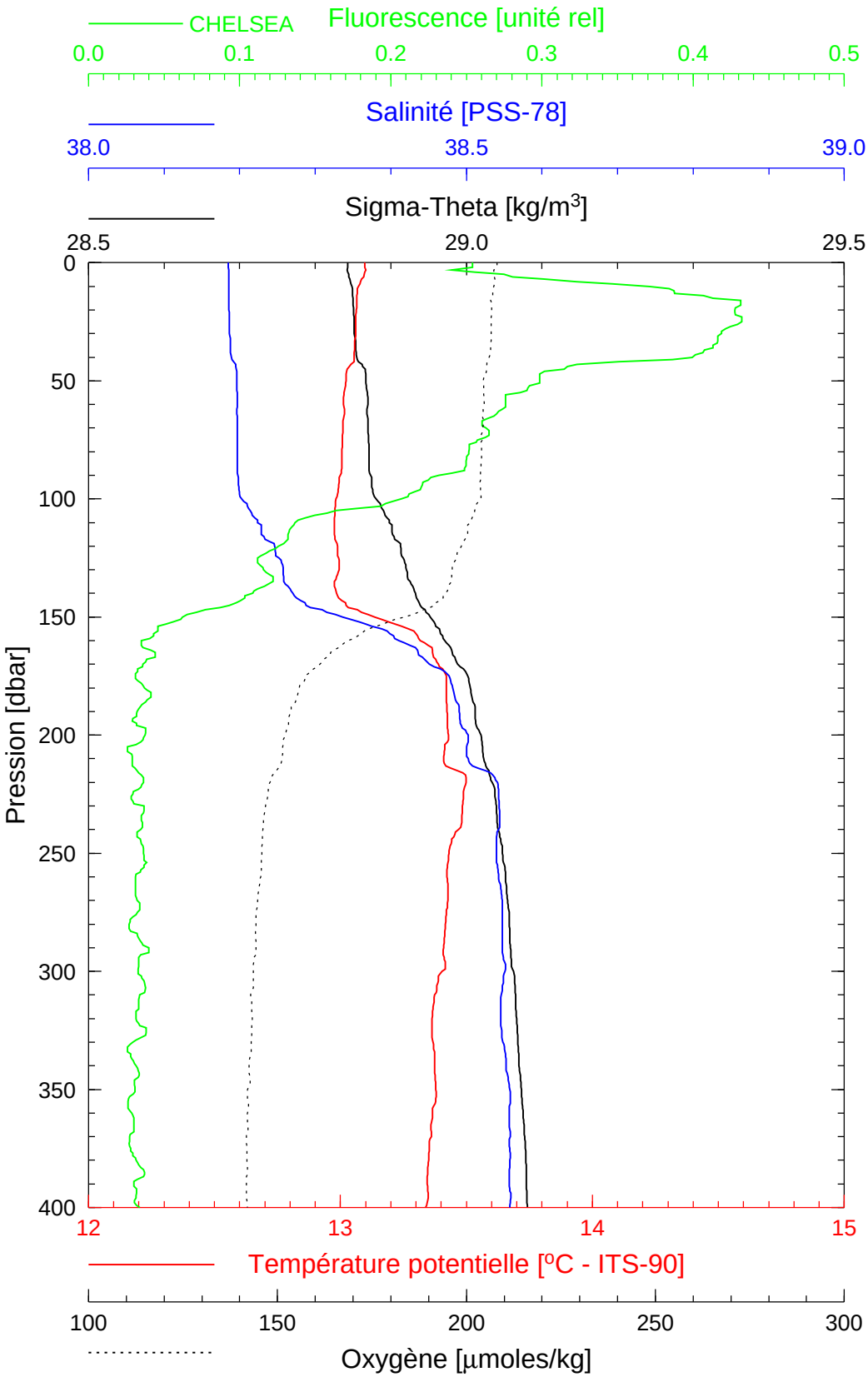






GMT 2003 Aug 29 11:20:36

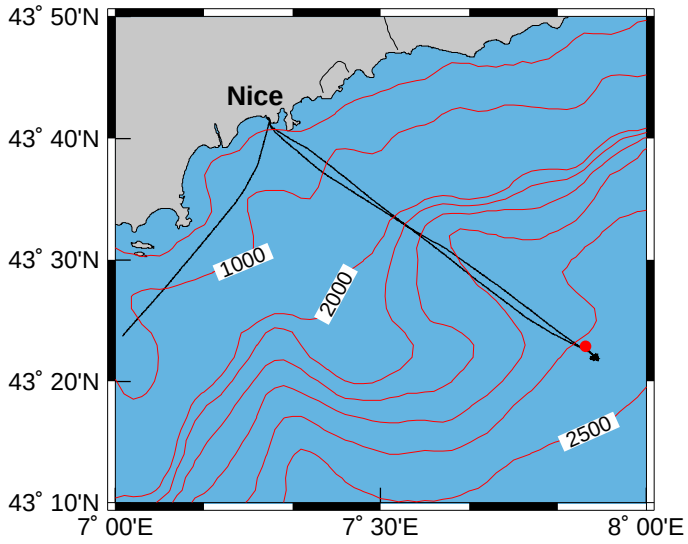
**Boussole 08** **25/02/2002** **BOUS020225_01**

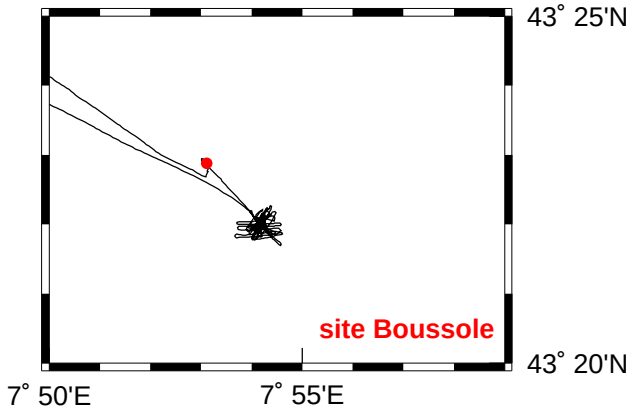
*BOUS001*

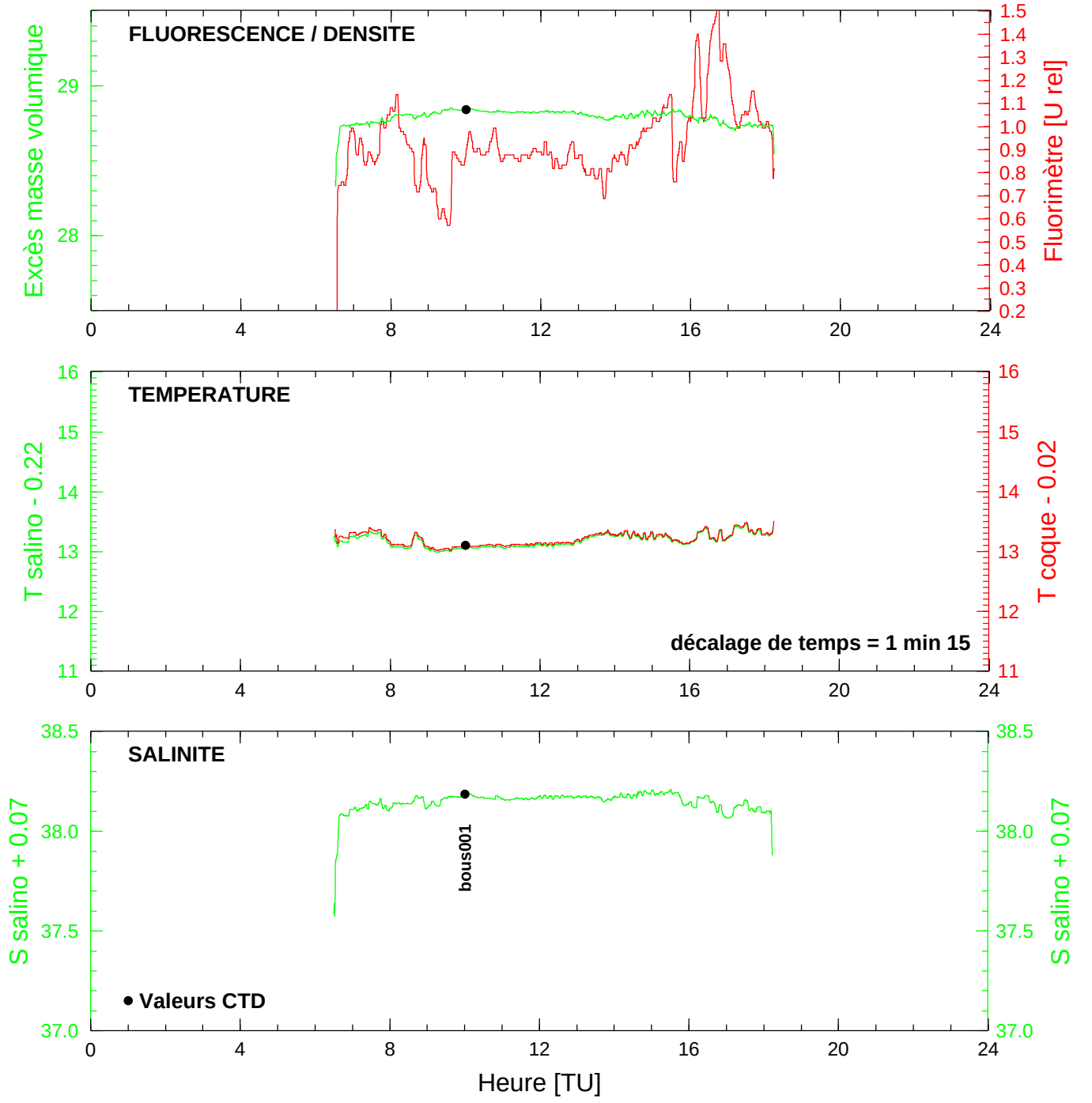


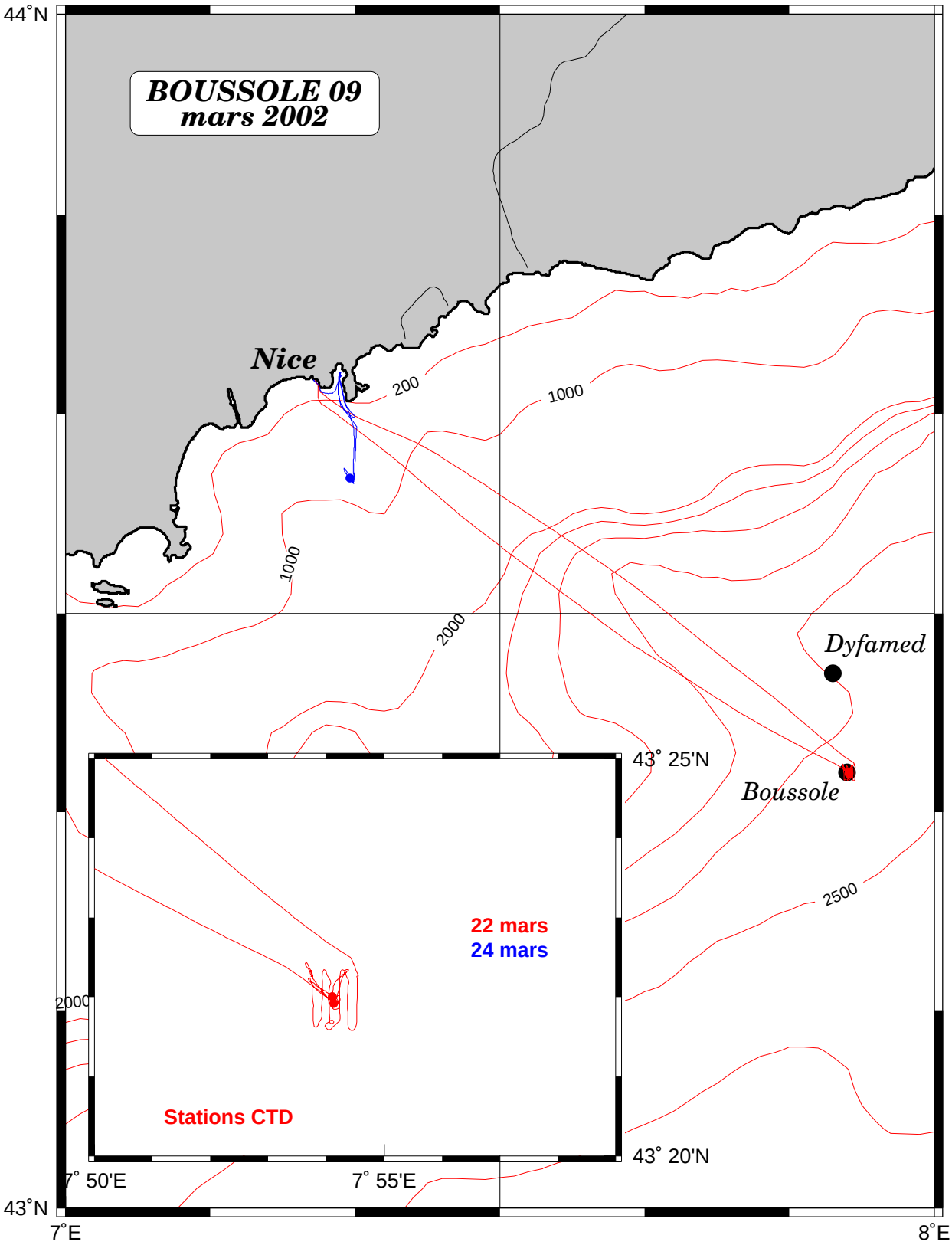

| | | | |
|---|---|---|---|
| *Date* | *25/02/2002* | *Latitude* | *43º22.885 N* |
| *Heure déb* | *10h 01min [TU]* | *Longitude* | *07º53.112 E* |

# BOUSSOLE 08 25 février 2002



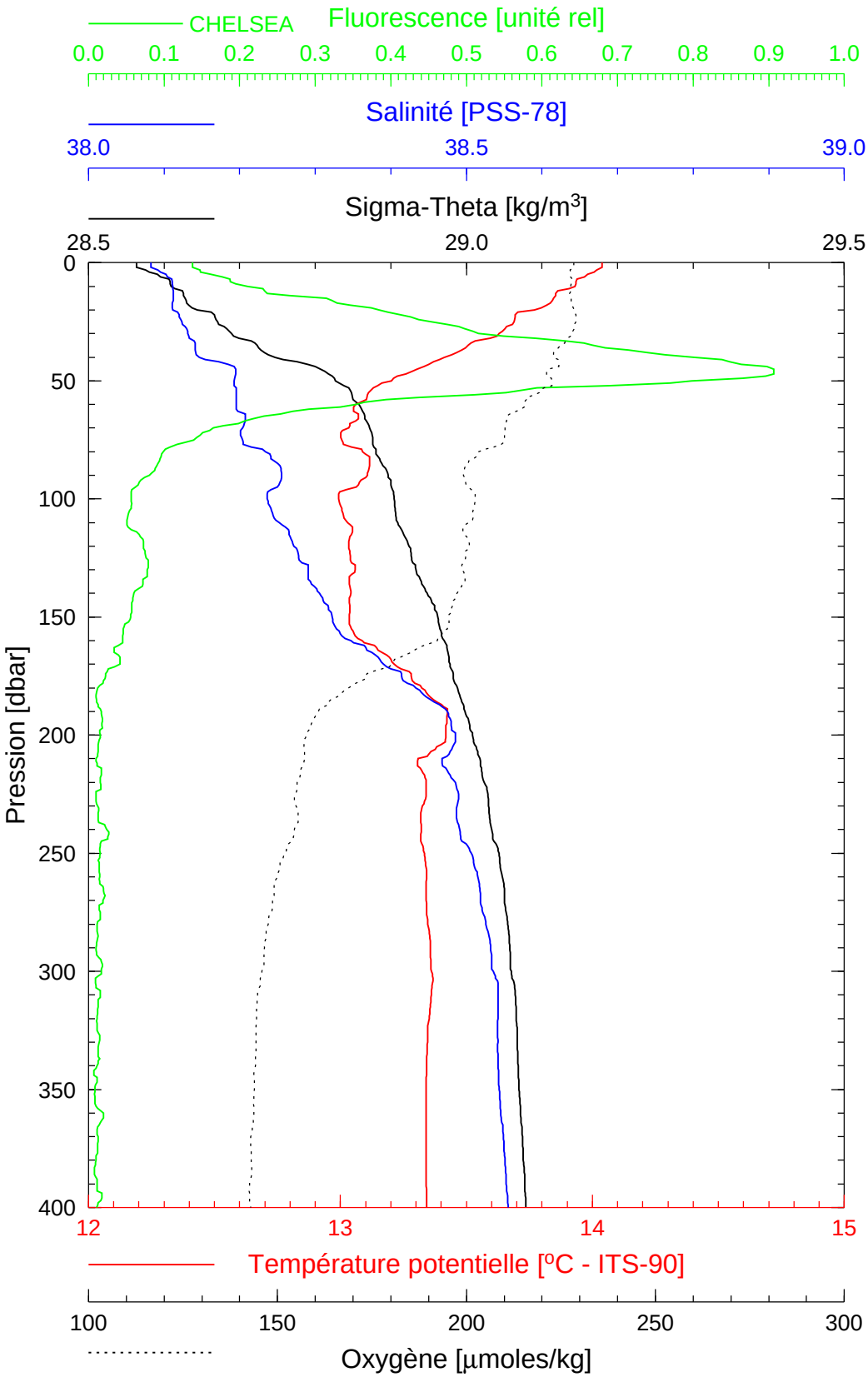






GMT 2003 Sep 1 10:59:41

**Boussole 09** **22/03/2002** **BOUS020322_01**

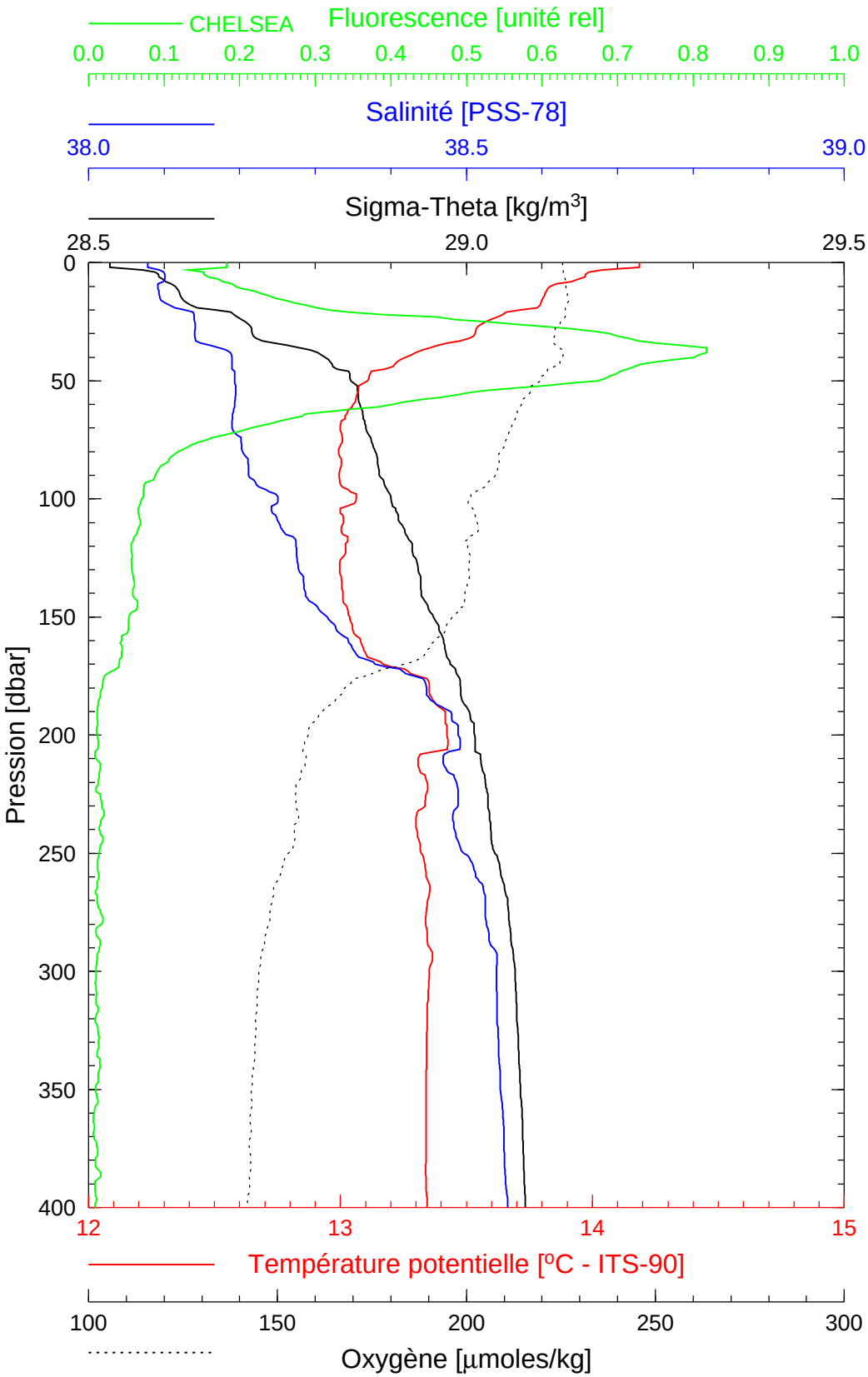
*Station : bous001*




| | | | |
|---|---|---|---|
| *Date* | *22/03/2002* | *Latitude* | *43º22.005 N* |
| *Heure déb* | *09h 54min [TU]* | *Longitude* | *07º54.110 E* |

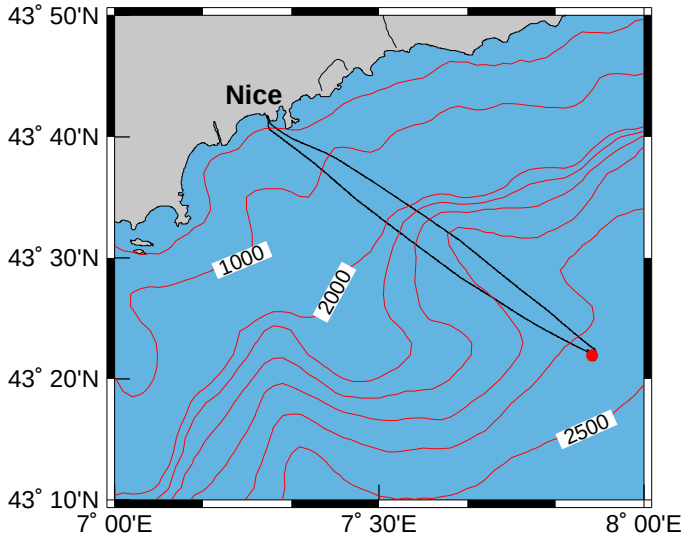
**Boussole 09** **22/03/2002** **BOUS020322_02**

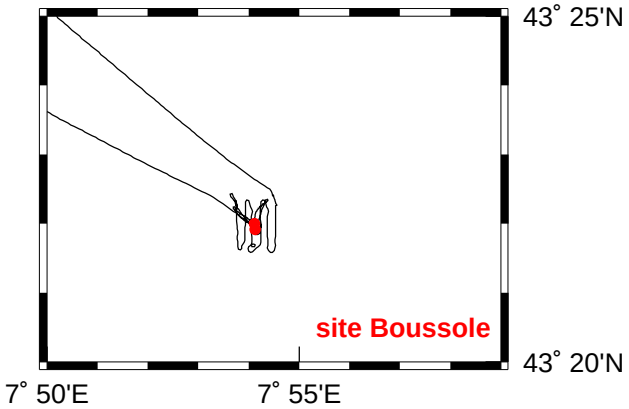
*bous002*

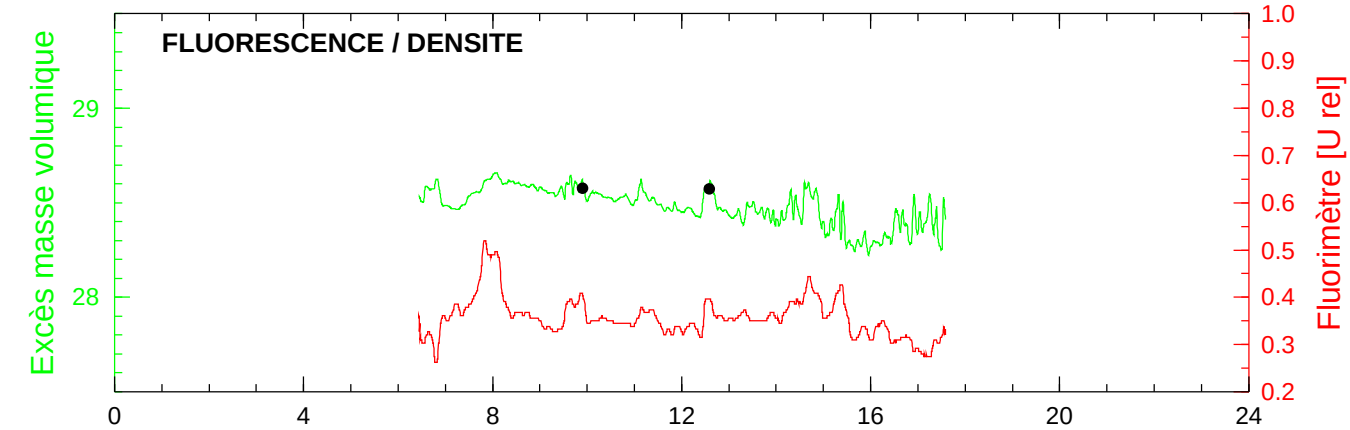


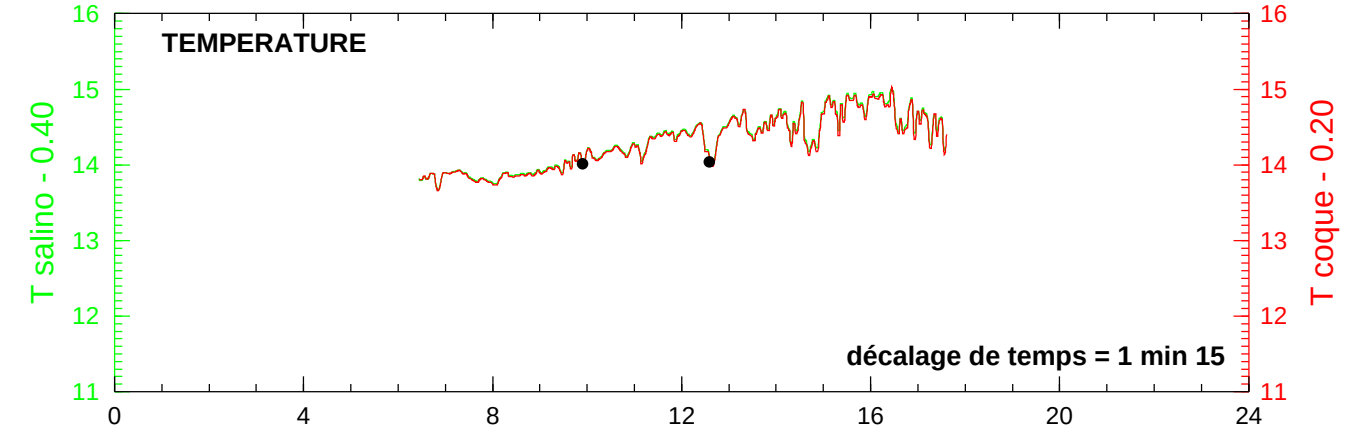

| | | | |
|---|---|---|---|
| *Date* | *22/03/2002* | *Latitude* | *43º21.922 N* |
| *Heure déb* | *12h 35min [TU]* | *Longitude* | *07º54.131 E* |

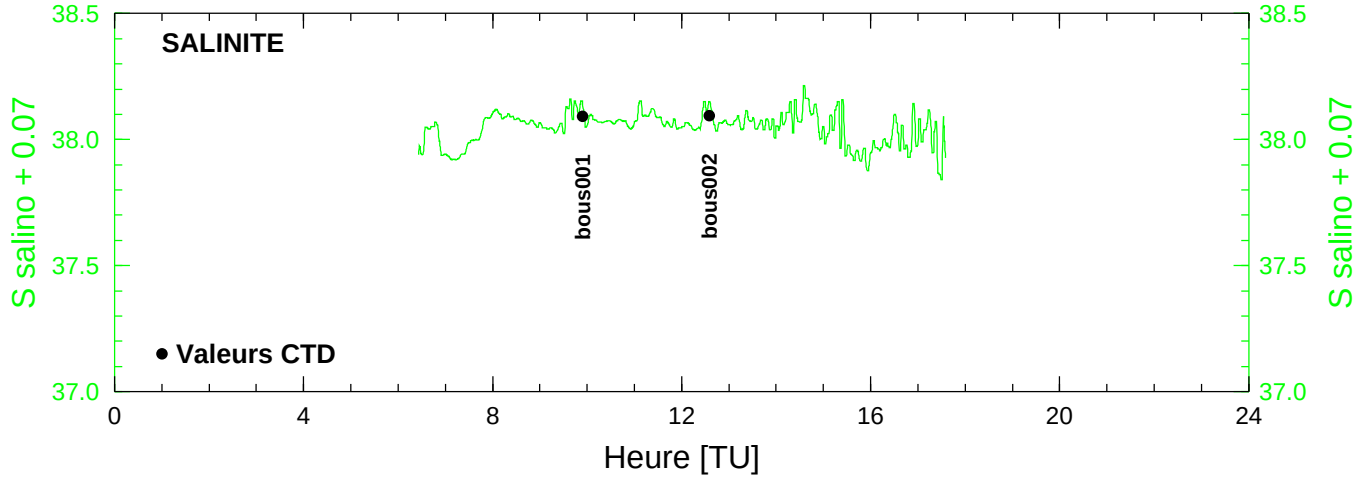
# BOUSSOLE 09 22 mars 2002

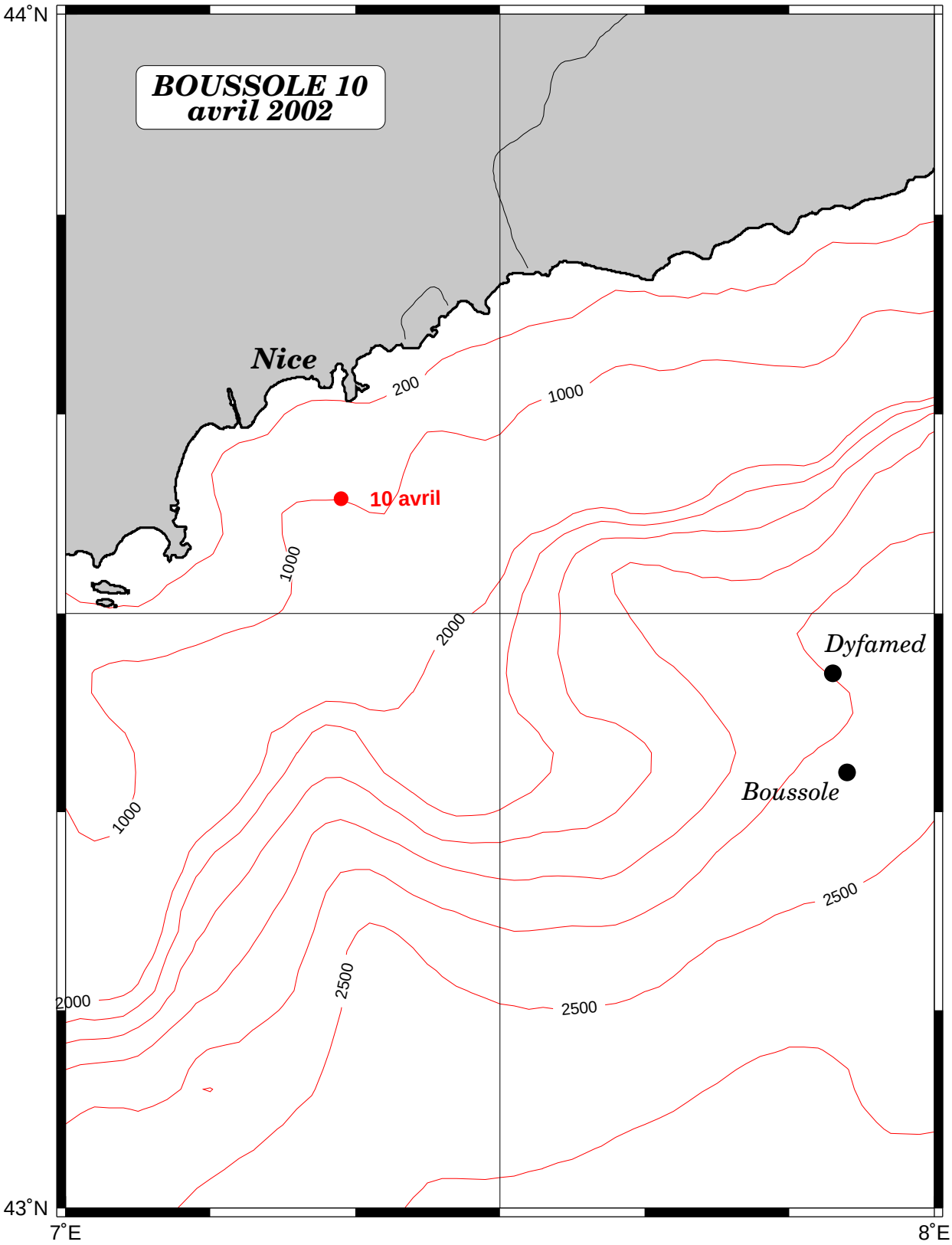


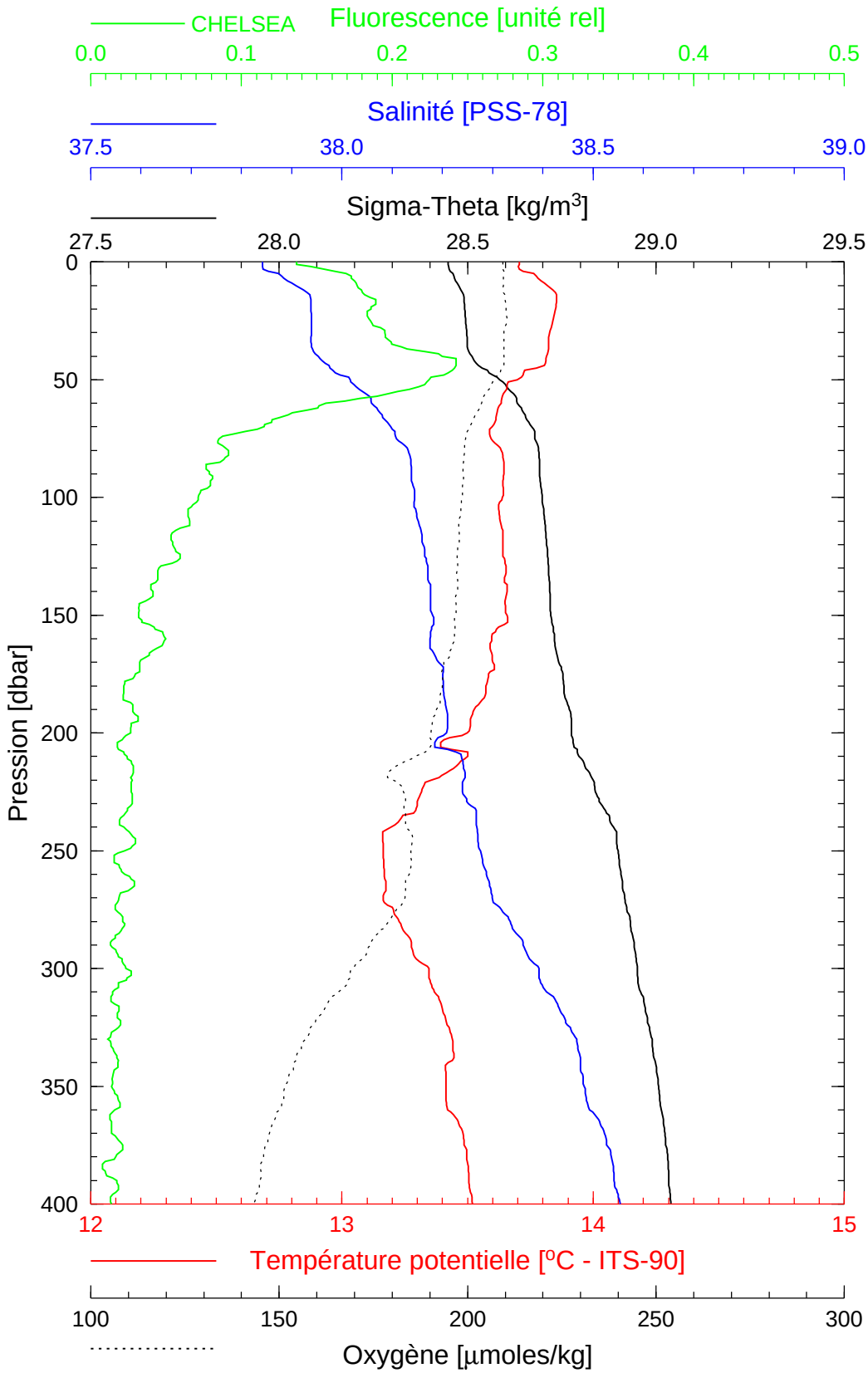





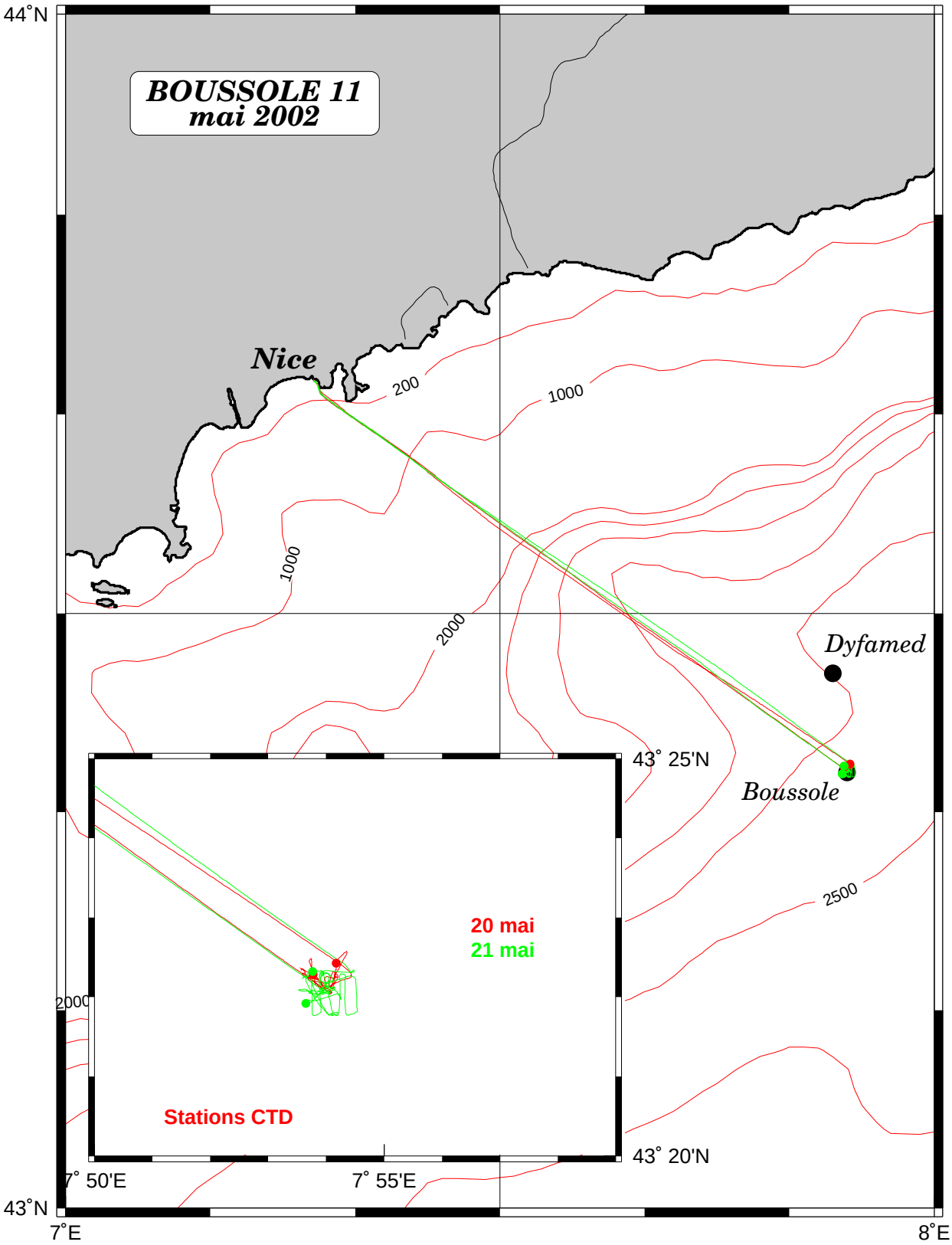

GMT 2003 Sep 17 10:33:46

**Boussole 10** **10/04/2002** **BOUS020410_01**

*bous001*



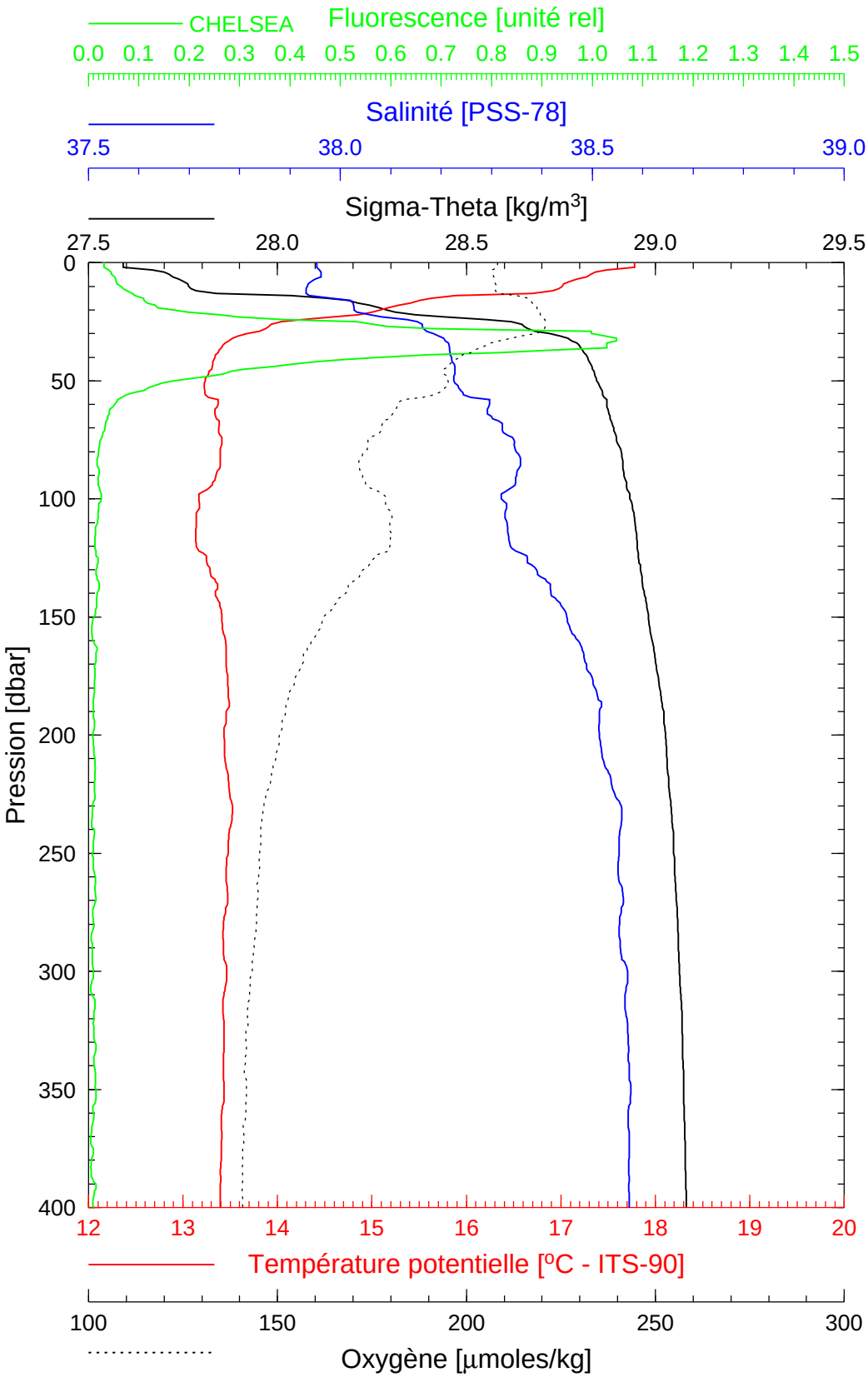

| | | | |
|---|---|---|---|
| *Date* | *10/04/2002* | *Latitude* | *43º35.769 N* |
| *Heure déb* | *09h 01min [TU]* | *Longitude* | *07º19.022 E* |




GMT 2003 Sep 17 12:06:32

**Boussole 11** **20/05/2002** **BOUS020520_01**

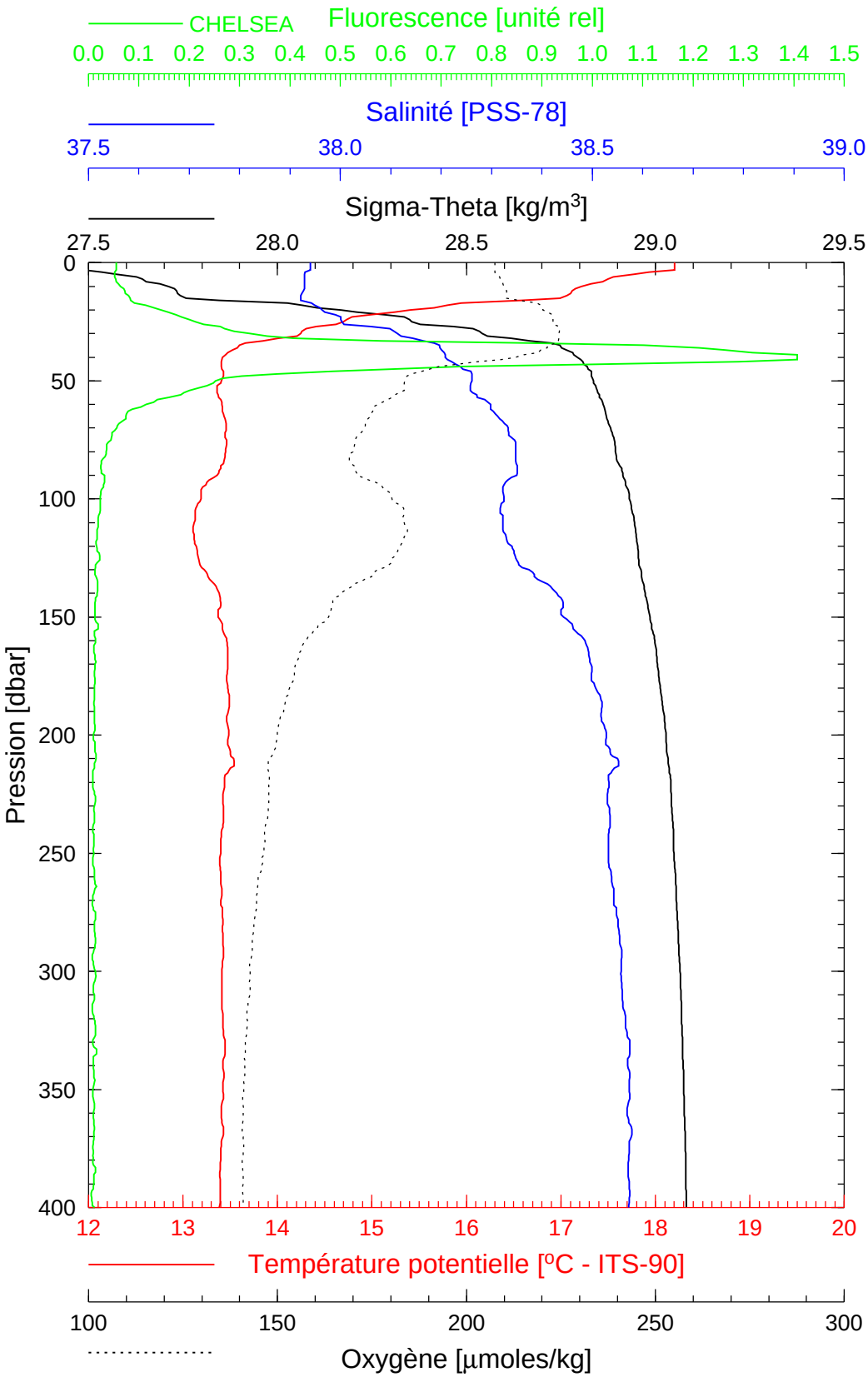
*bous001*




| | | | |
|---|---|---|---|
| *Date* | *20/05/2002* | *Latitude* | *43°22.287 N* |
| *Heure déb* | *09h 36min [TU]* | *Longitude* | *07°53.778 E* |

**Boussole 11** **20/05/2002** **BOUS020520_02**

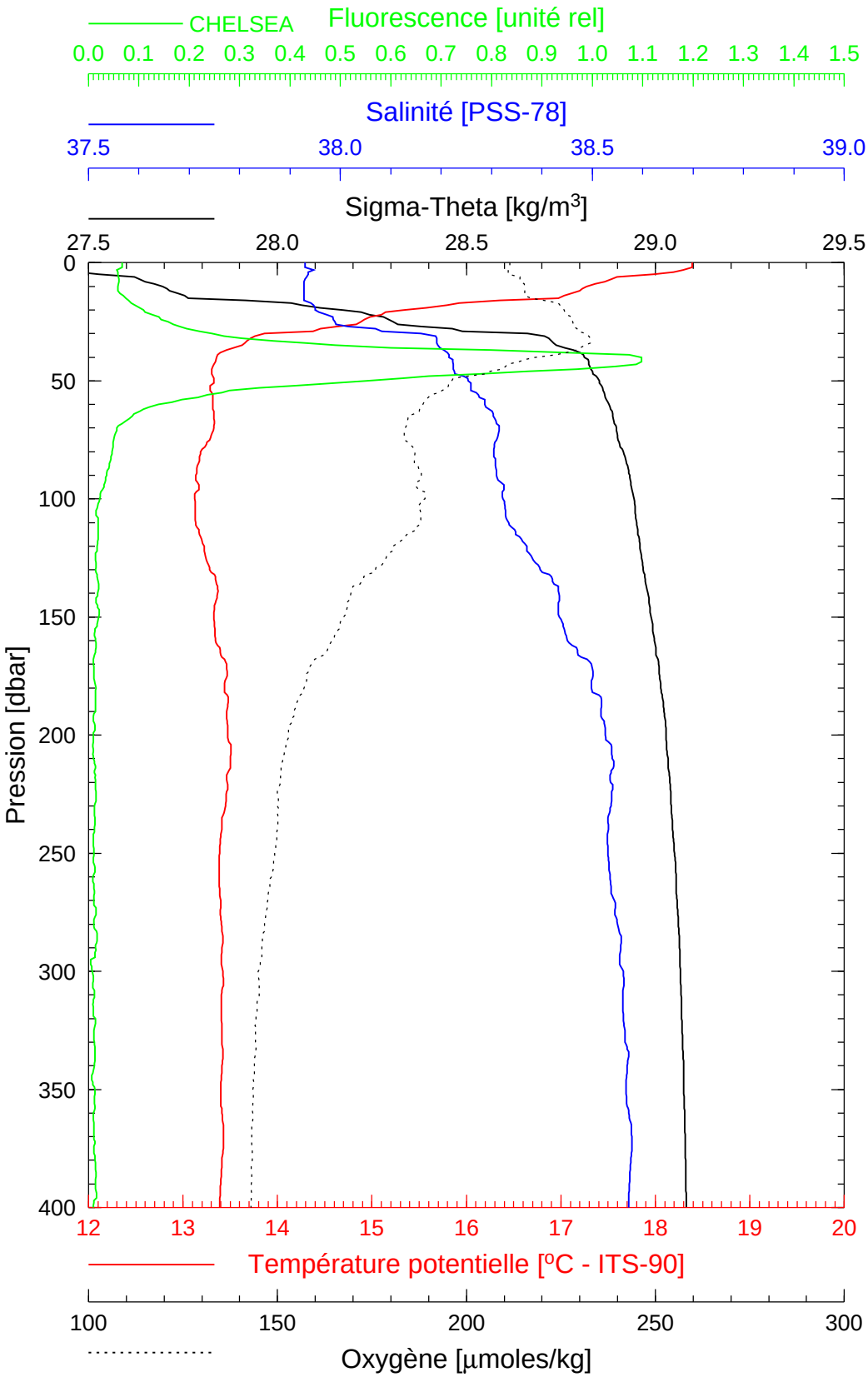
*bous002*




| | | | |
|---|---|---|---|
| *Date* | *20/05/2002* | *Latitude* | *43º22.427 N* |
| *Heure déb* | *14h 23min [TU]* | *Longitude* | *07º54.175 E* |

**Boussole 11** **21/05/2002** **BOUS020521_01**

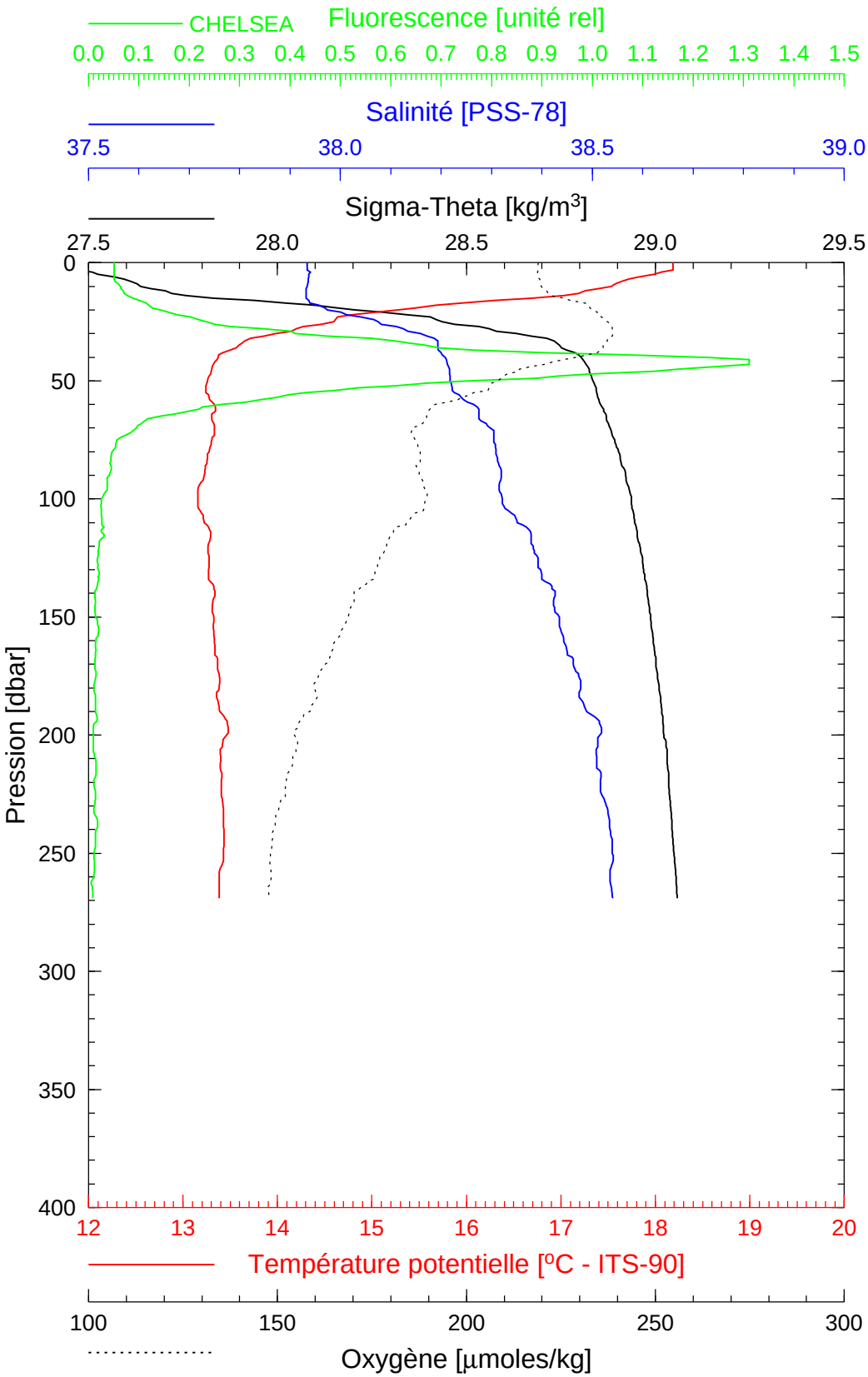
*bous003*




| | | | |
|---|---|---|---|
| *Date* | *21/05/2002* | *Latitude* | *43º21.921 N* |
| *Heure déb* | *08h 23min [TU]* | *Longitude* | *07º53.649 E* |

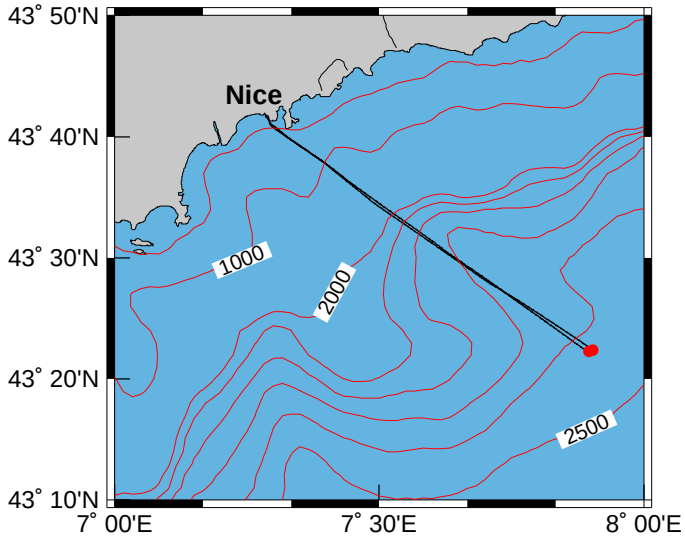
**Boussole 11** **21/05/2002** **BOUS020521_02**

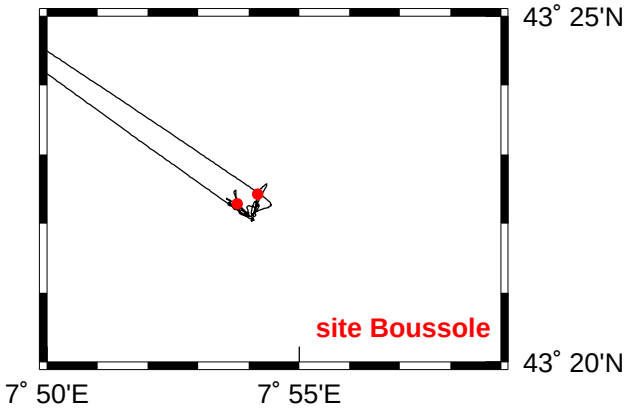
*bous004*

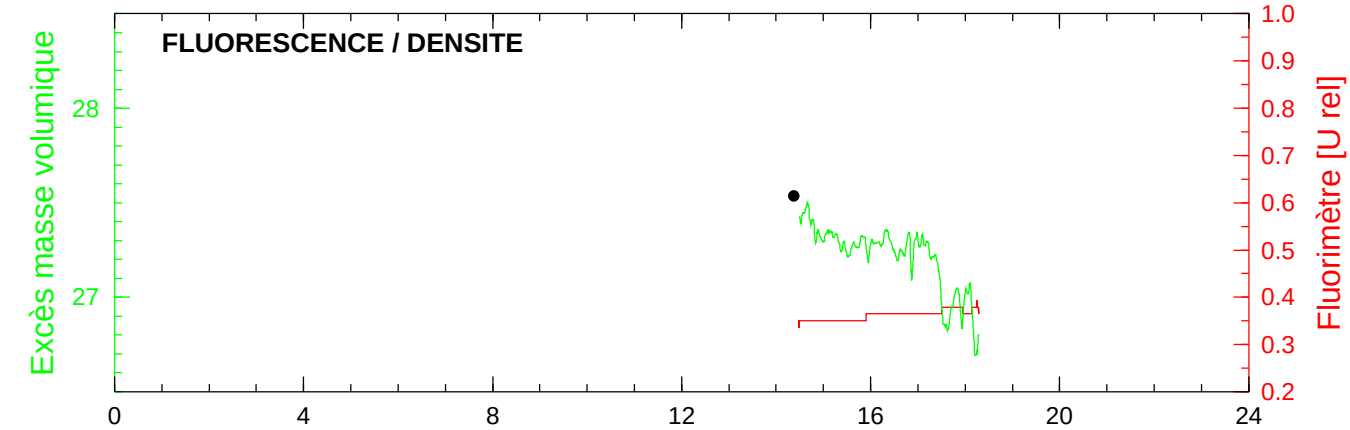


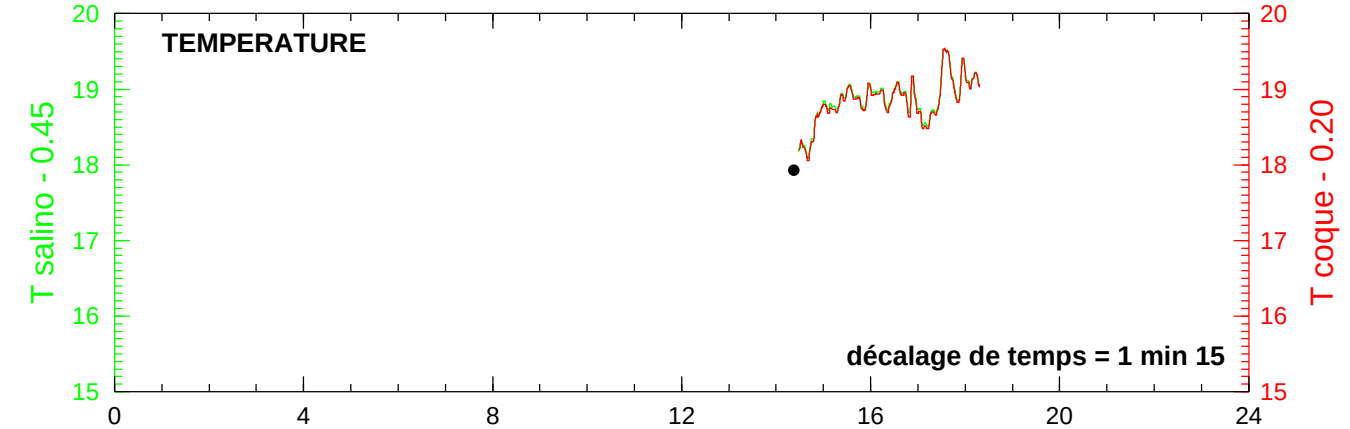

| | | | |
|---|---|---|---|
| *Date* | *21/05/2002* | *Latitude* | *43º22.322 N* |
| *Heure déb* | *13h 02min [TU]* | *Longitude* | *07º53.770 E* |

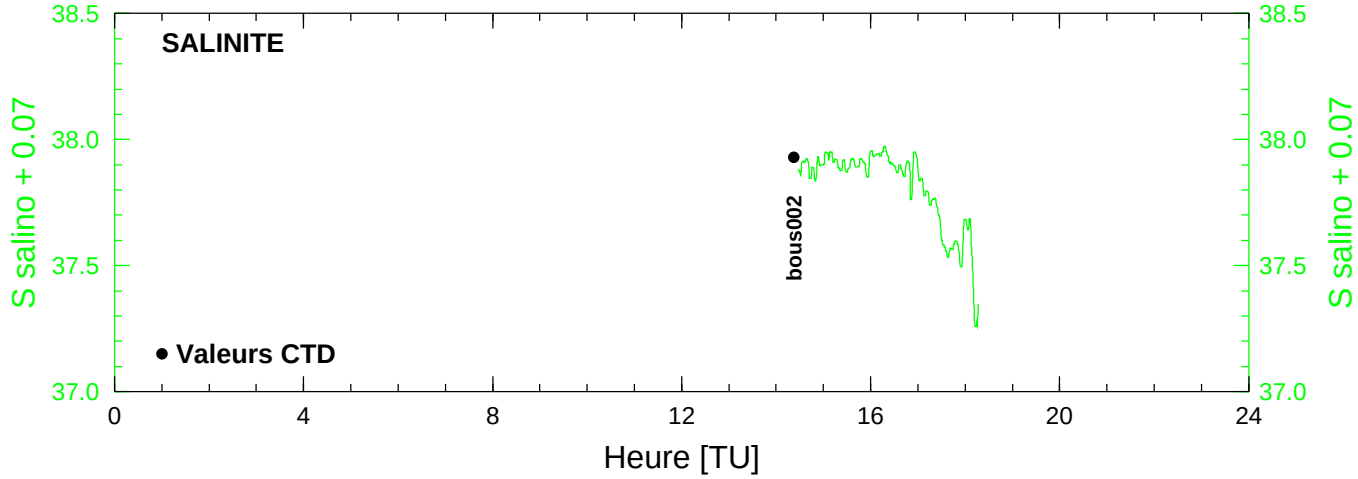
# BOUSSOLE 11 20 mai 2002



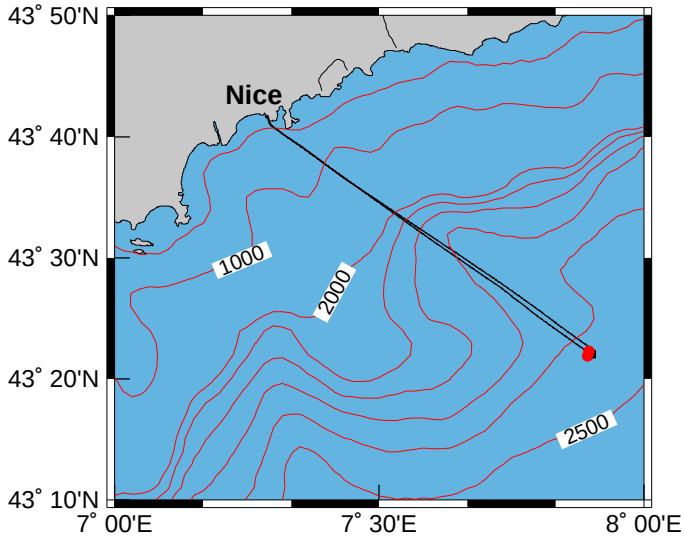



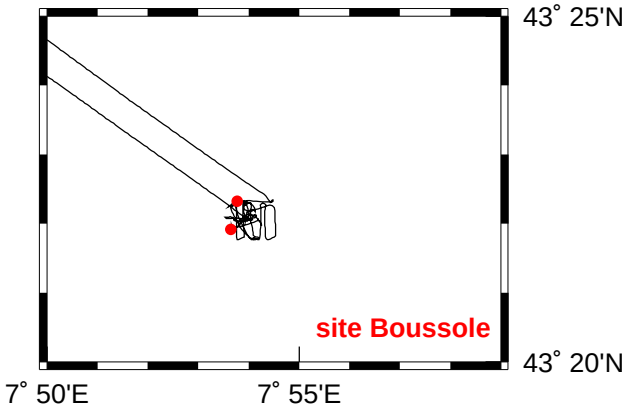



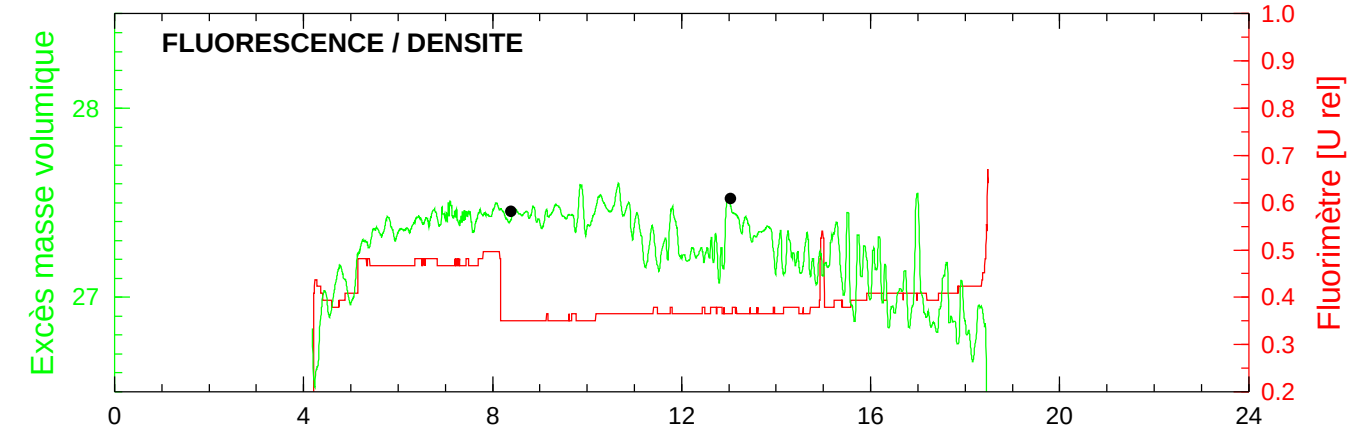



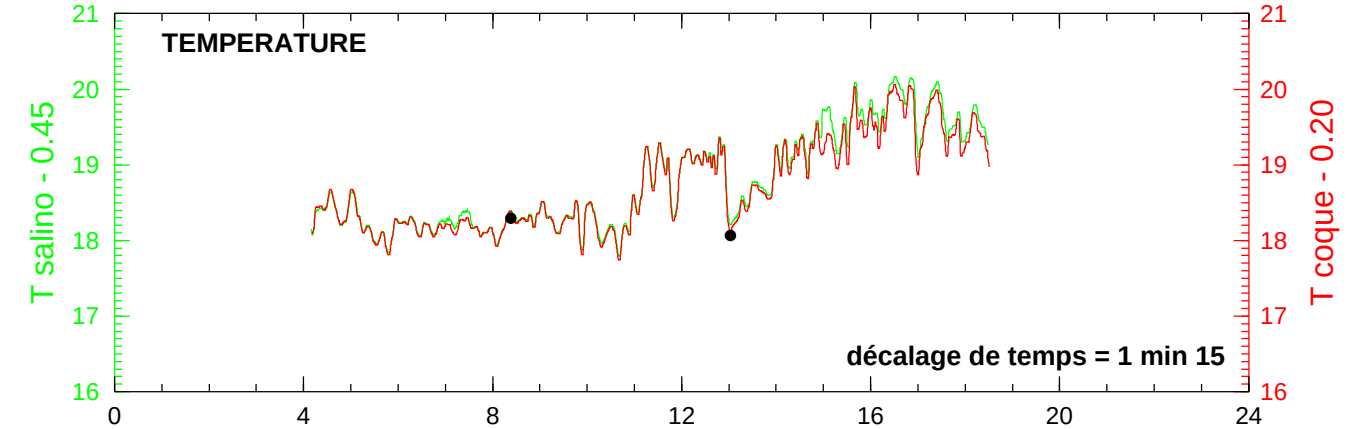



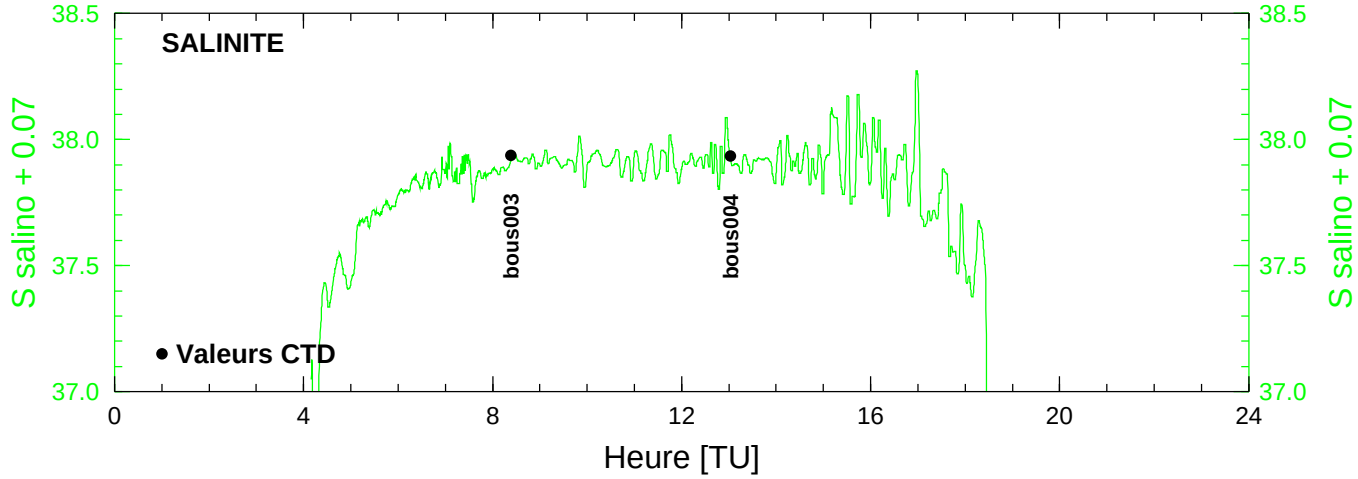
# BOUSSOLE 11 21 mai 2002

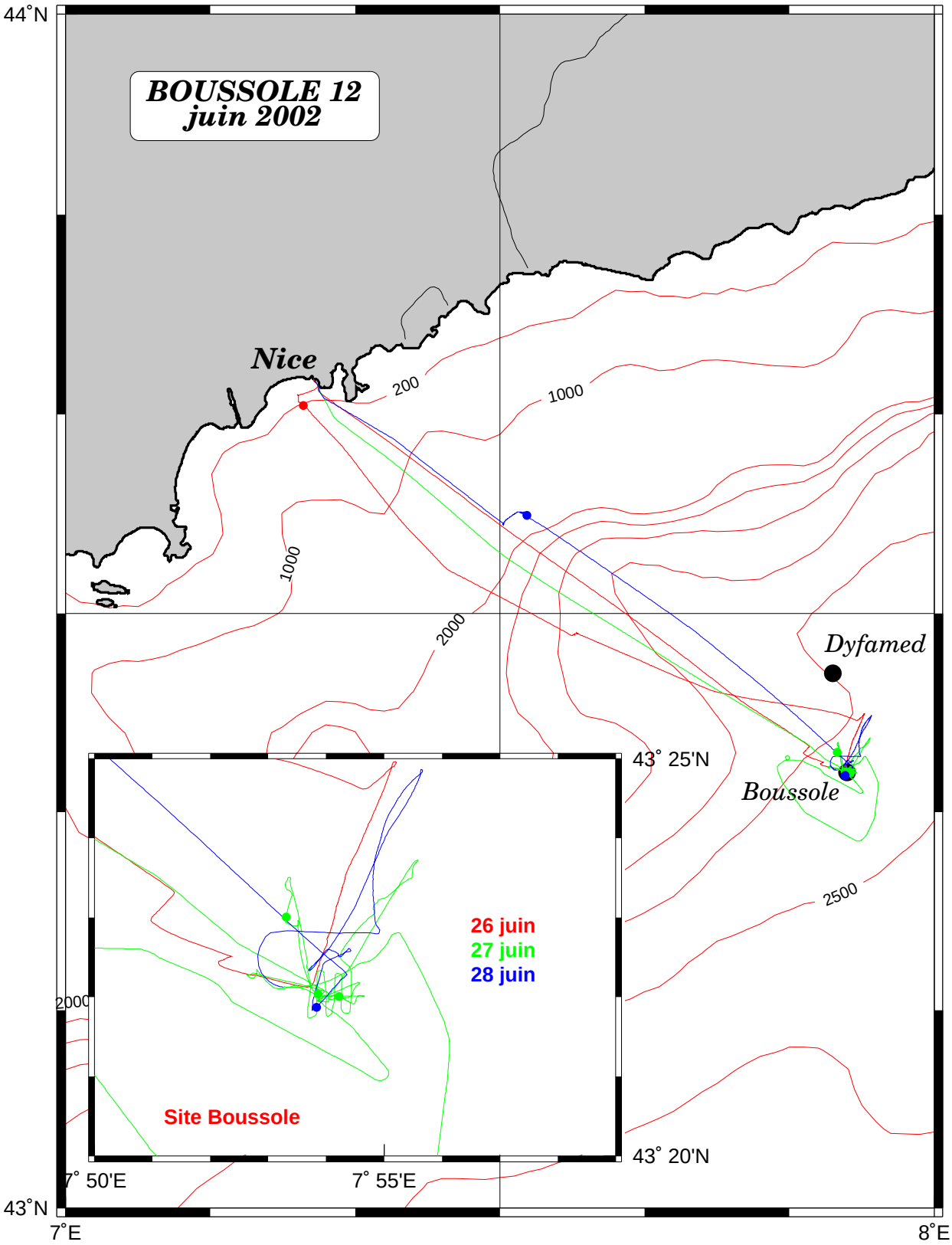


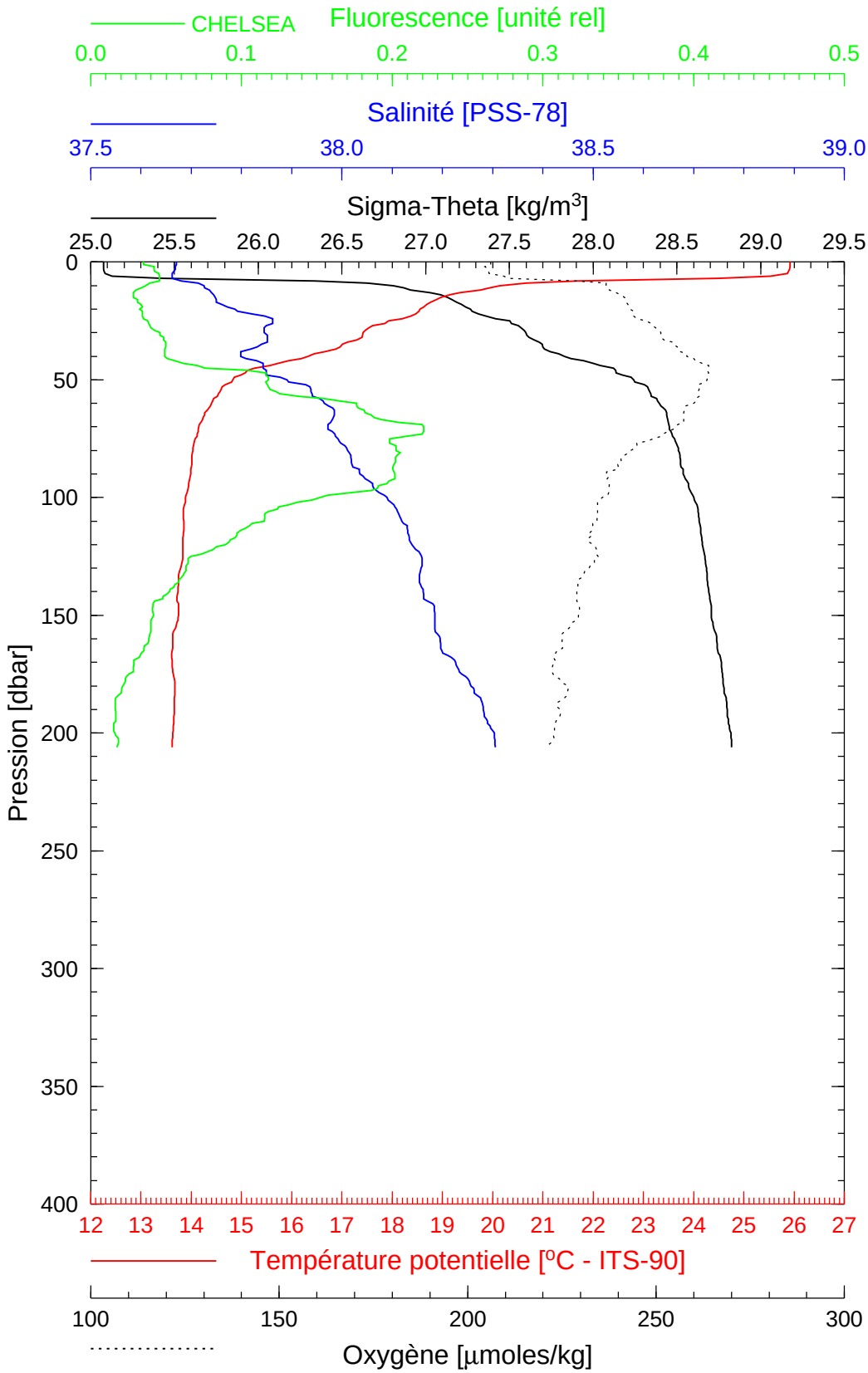






GMT 2003 Oct 13 19:05:29

**Boussole 12** **26/06/2002** **BOUS020626_01**

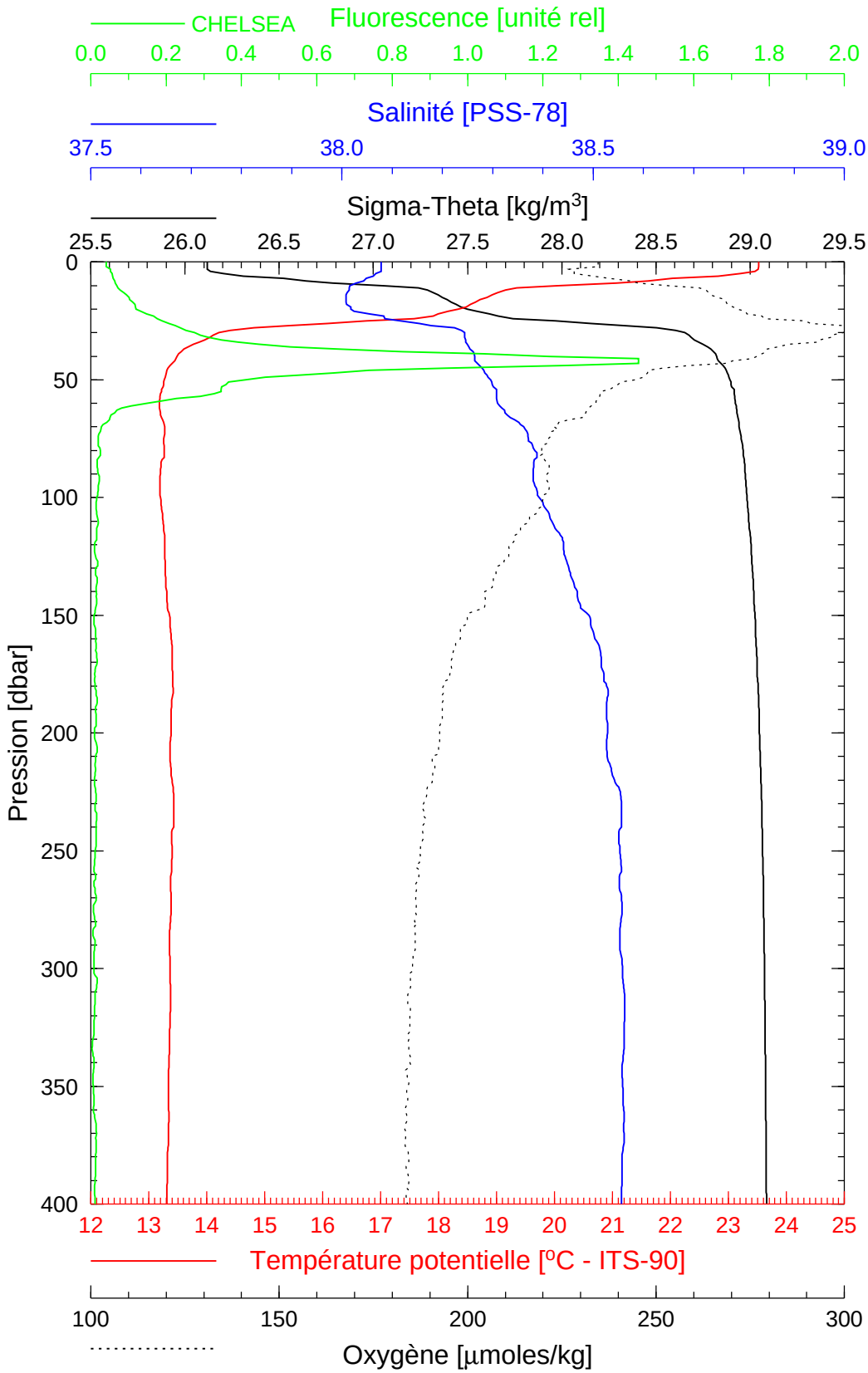
*bous001*




| | | | |
|---|---|---|---|
| *Date* | *26/06/2002* | *Latitude* | *43º40.445 N* |
| *Heure déb* | *15h 02min [TU]* | *Longitude* | *07º16.436 E* |

**Boussole 12** **27/06/2002** **BOUS020627_01**

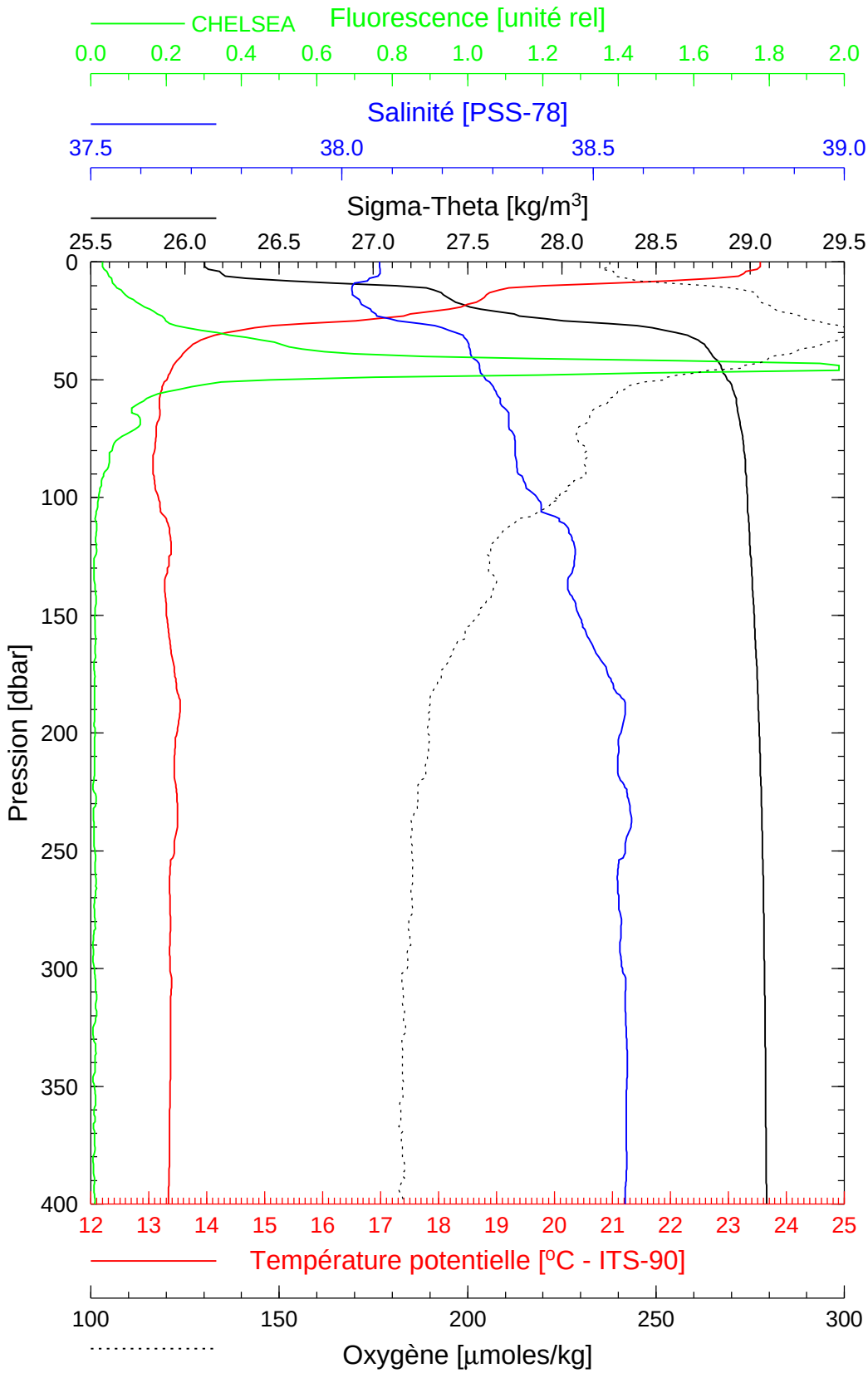
*bous002*




| | | | |
|---|---|---|---|
| *Date* | *27/06/2002* | *Latitude* | *43º22.037 N* |
| *Heure déb* | *07h 52min [TU]* | *Longitude* | *07º53.863 E* |

**Boussole 12** **27/06/2002** **BOUS020627_02**

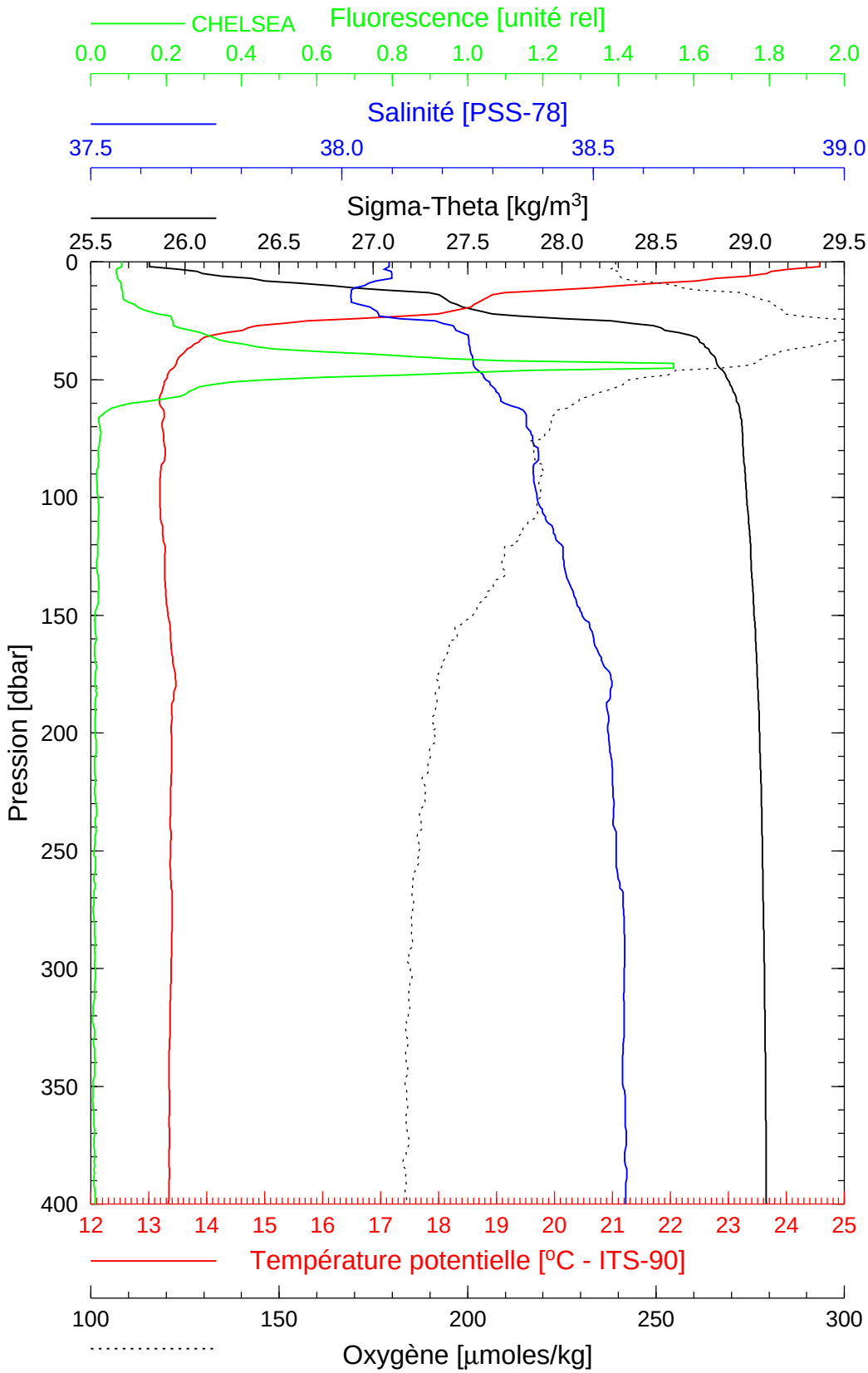
*bous003*




| | | | |
|---|---|---|---|
| *Date* | *27/06/2002* | *Latitude* | *43º23.009 N* |
| *Heure déb* | *11h 30min [TU]* | *Longitude* | *07º53.310 E* |

**Boussole 12** **27/06/2002** **BOUS020627_03**

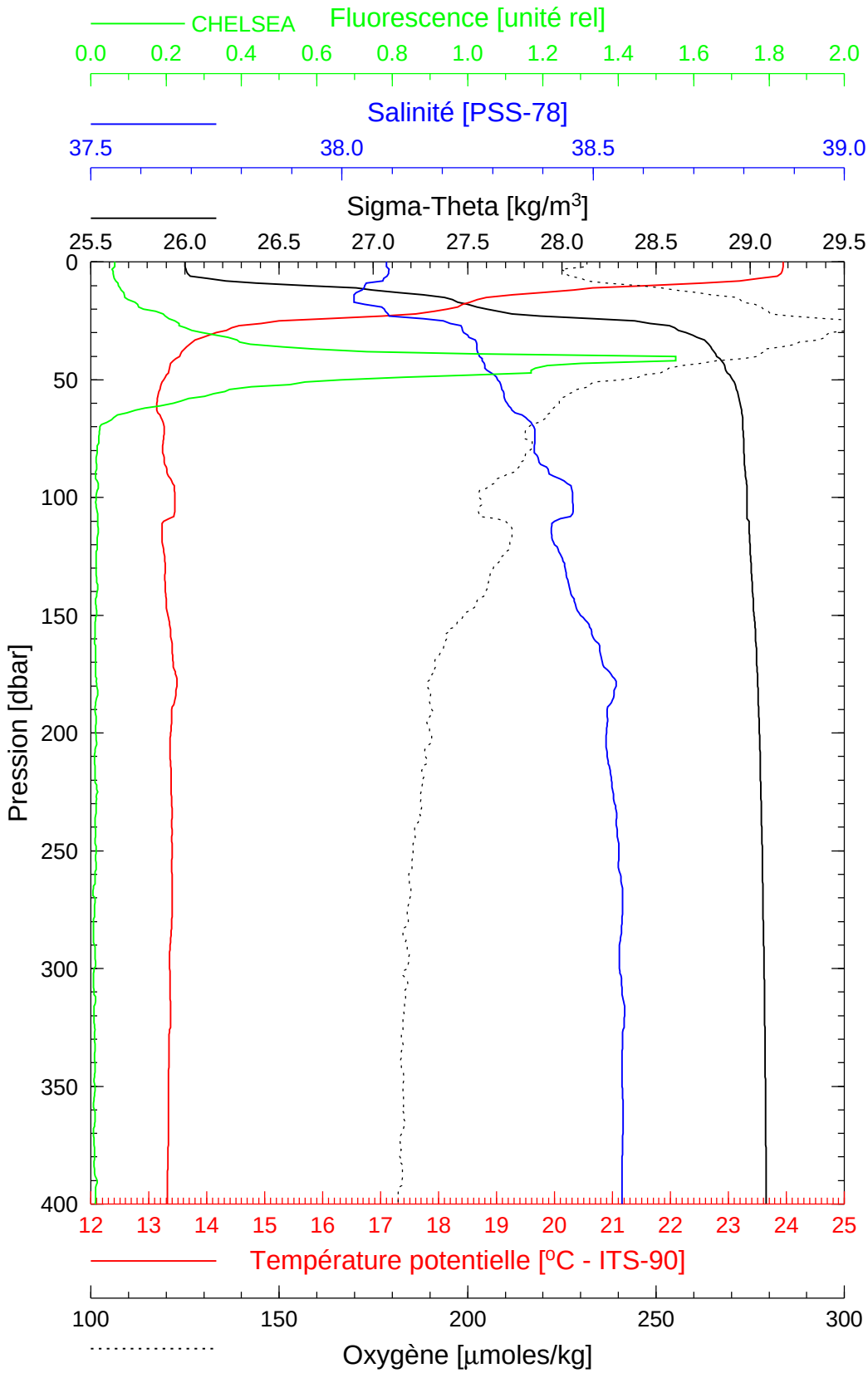
*bous004*




| | | | |
|---|---|---|---|
| *Date* | *27/06/2002* | *Latitude* | *43º22.011 N* |
| *Heure déb* | *16h 26min [TU]* | *Longitude* | *07º54.225 E* |

**Boussole 12** **28/06/2002** **BOUS020628_01**

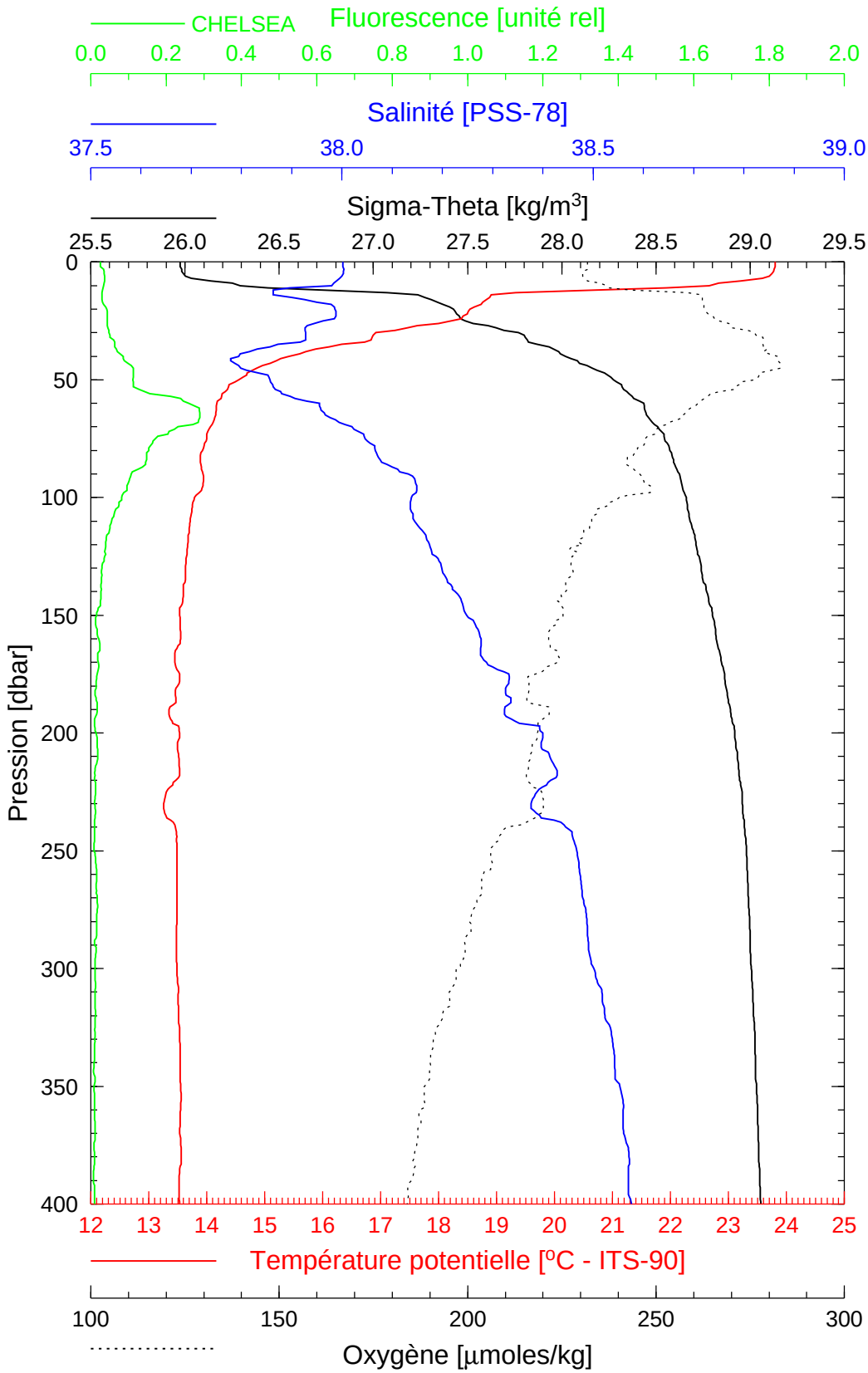
*bous005*




| | | | |
|---|---|---|---|
| *Date* | *28/06/2002* | *Latitude* | *43º21.870 N* |
| *Heure déb* | *05h 46min [TU]* | *Longitude* | *07º53.834 E* |

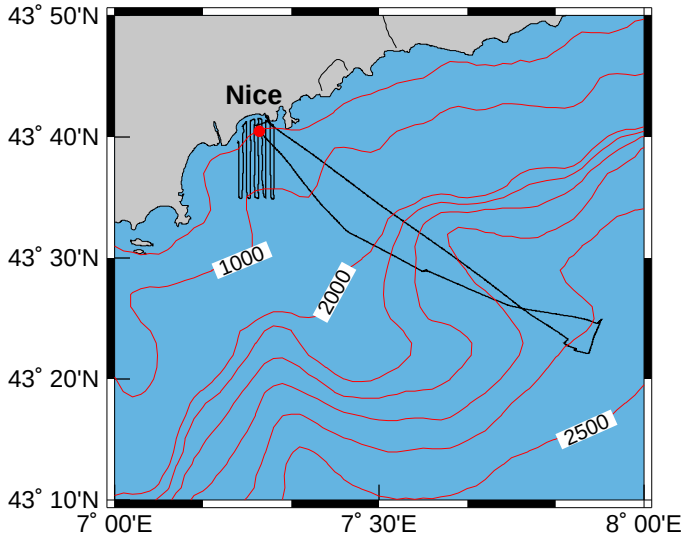
**Boussole 12** **28/06/2002** **BOUS020628_02**

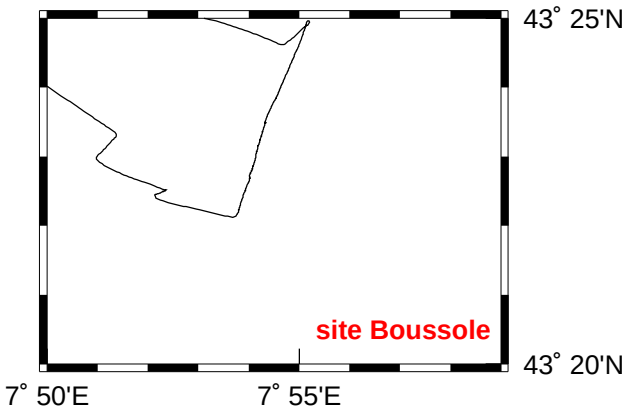
*bous006*

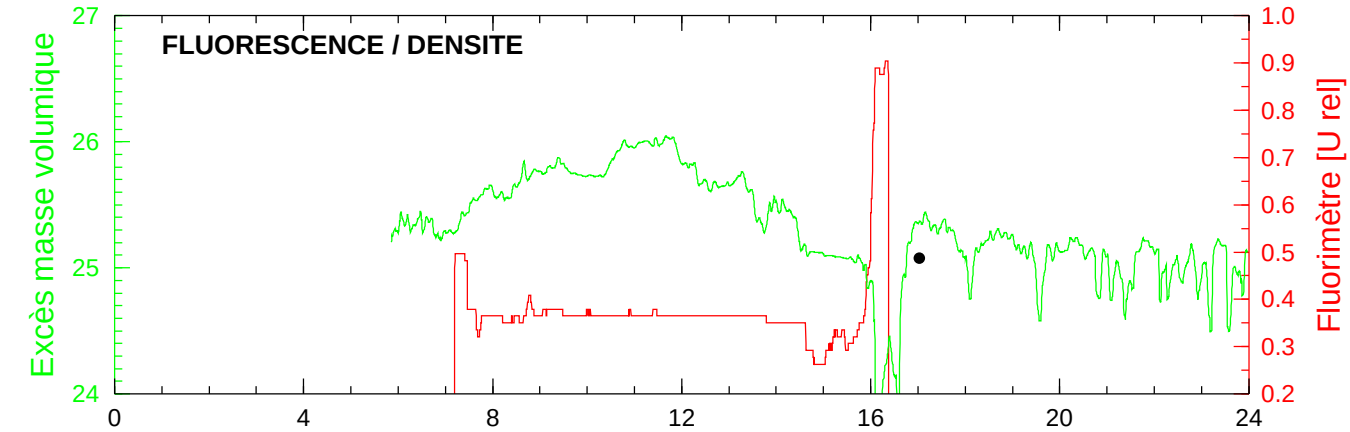


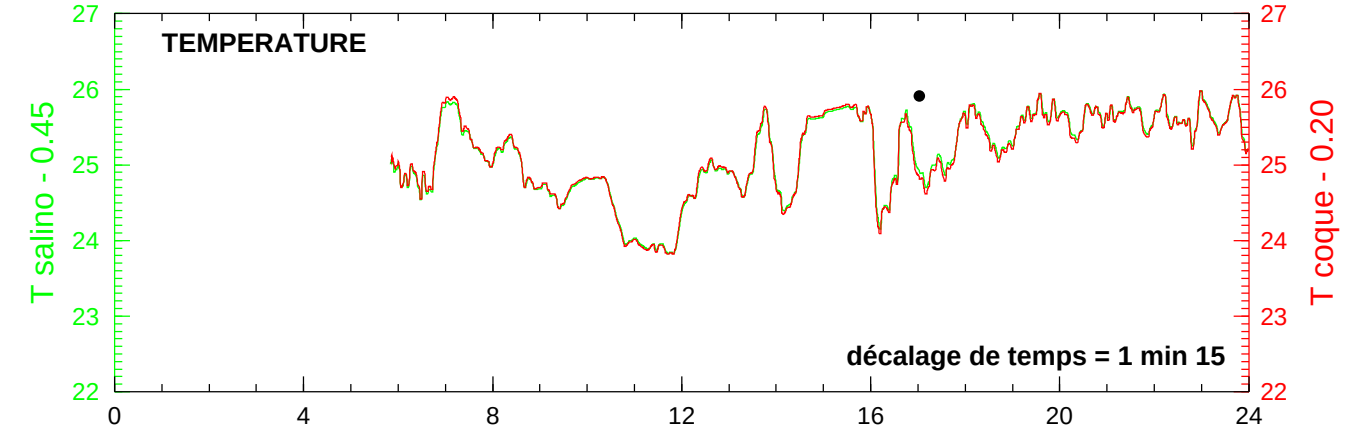

| | | | |
|---|---|---|---|
| *Date* | *28/06/2002* | *Latitude* | *43º34.934 N* |
| *Heure déb* | *09h 16min [TU]* | *Longitude* | *07º31.866 E* |

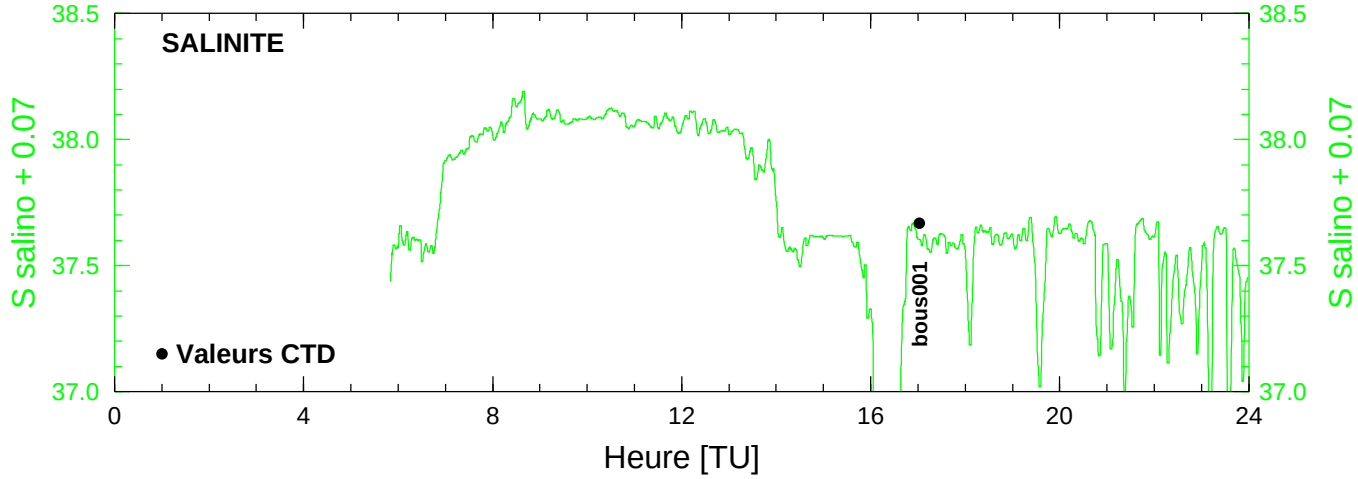
# BOUSSOLE 12 26 juin 2002



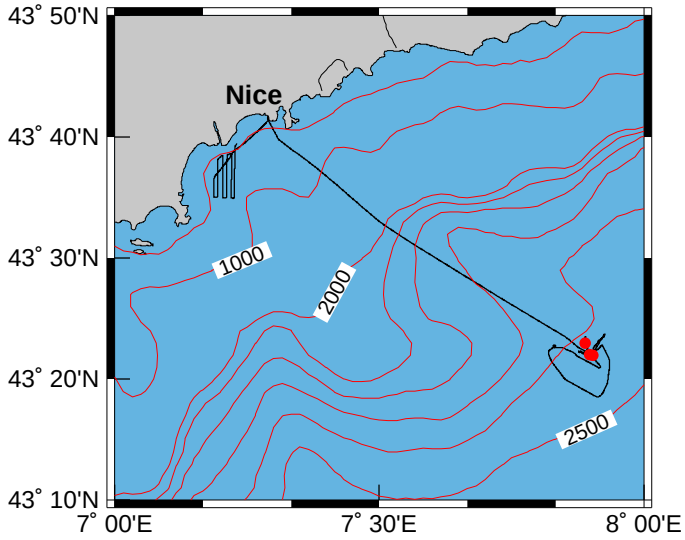



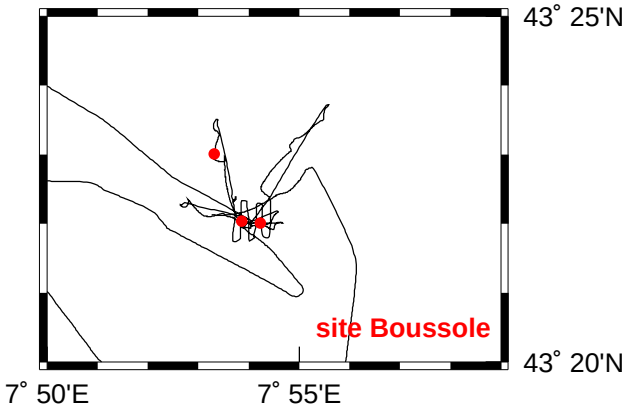



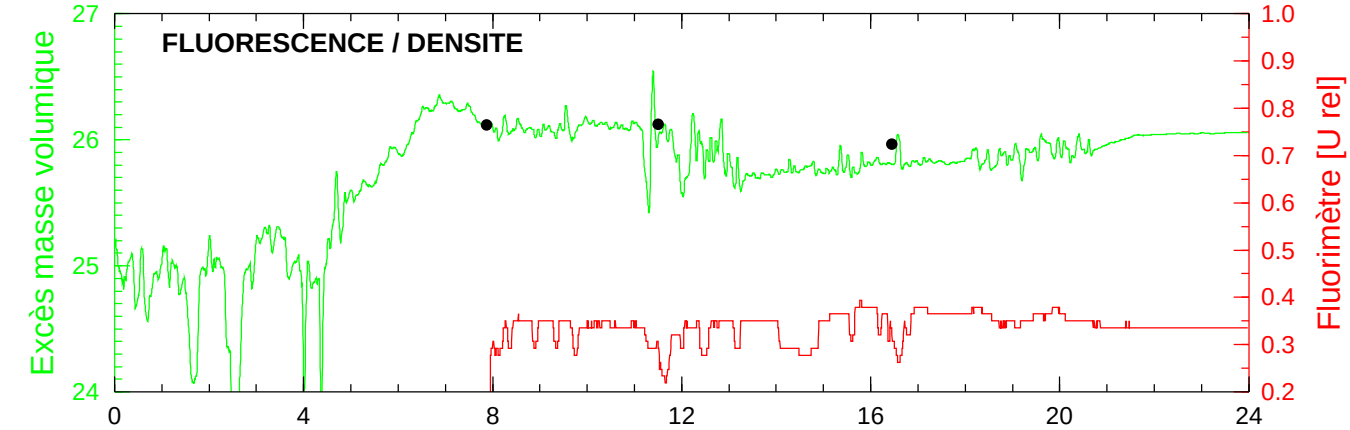



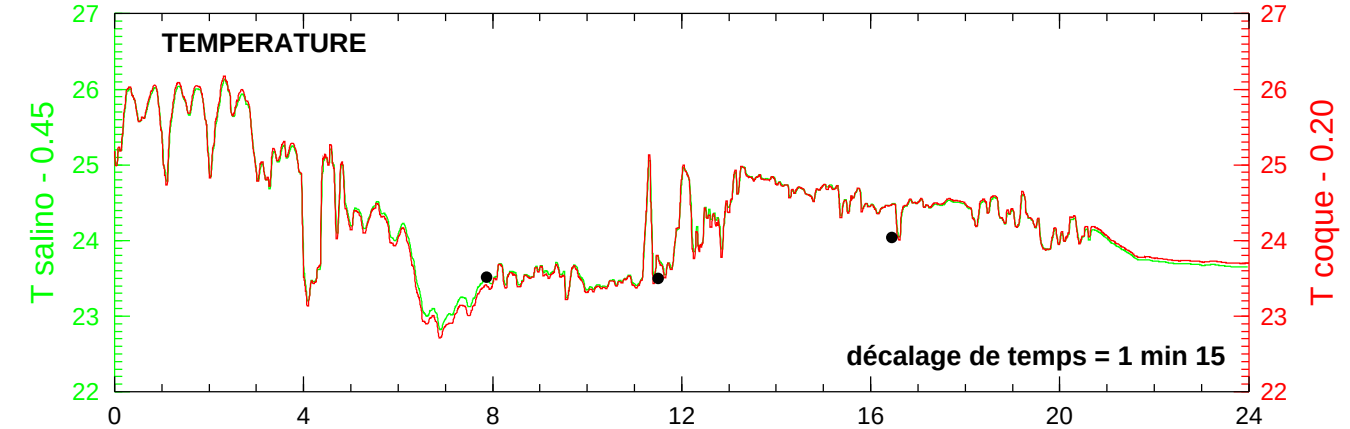



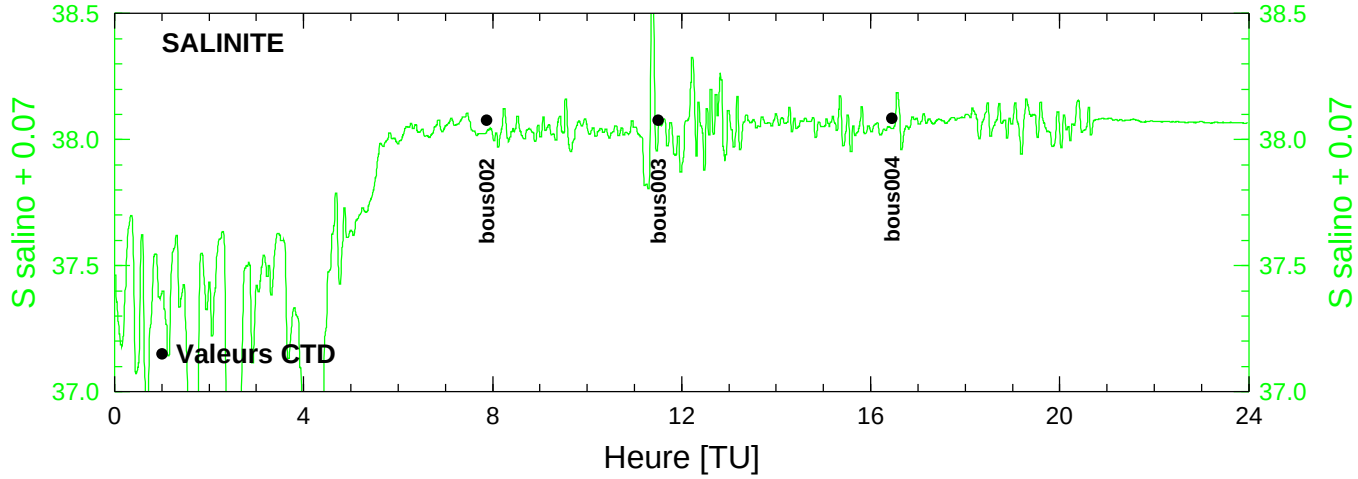
# BOUSSOLE 12 27 juin 2002



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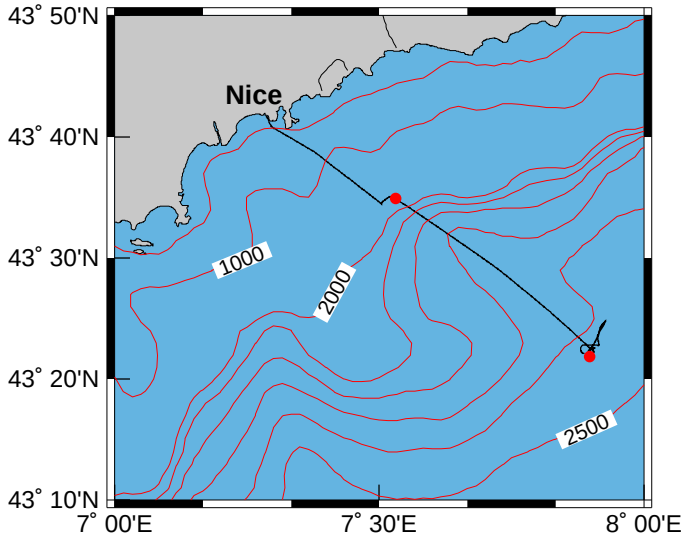
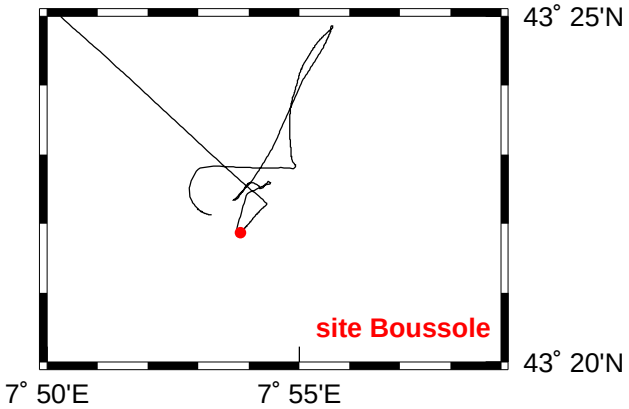
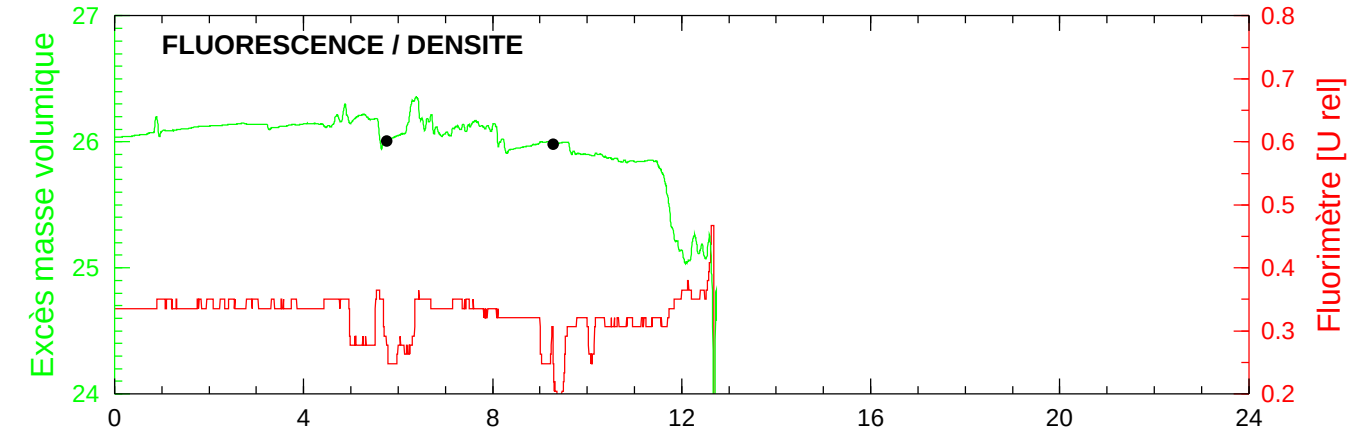
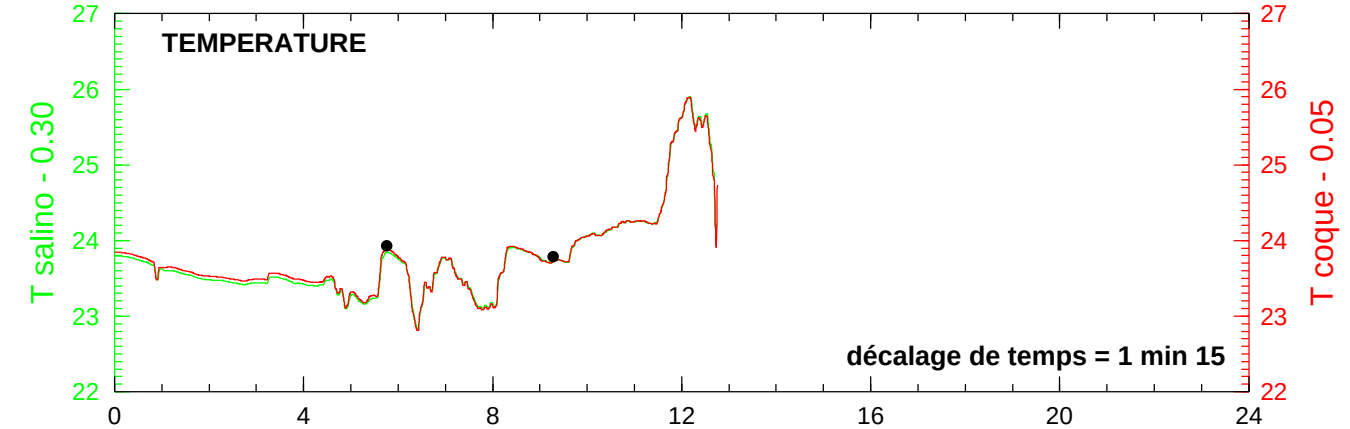
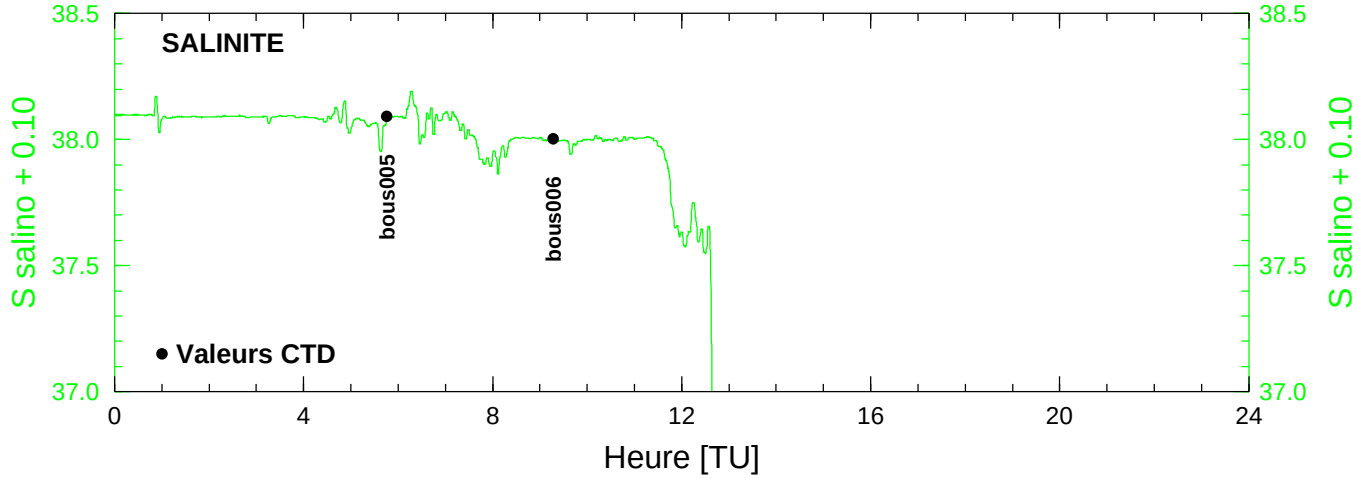
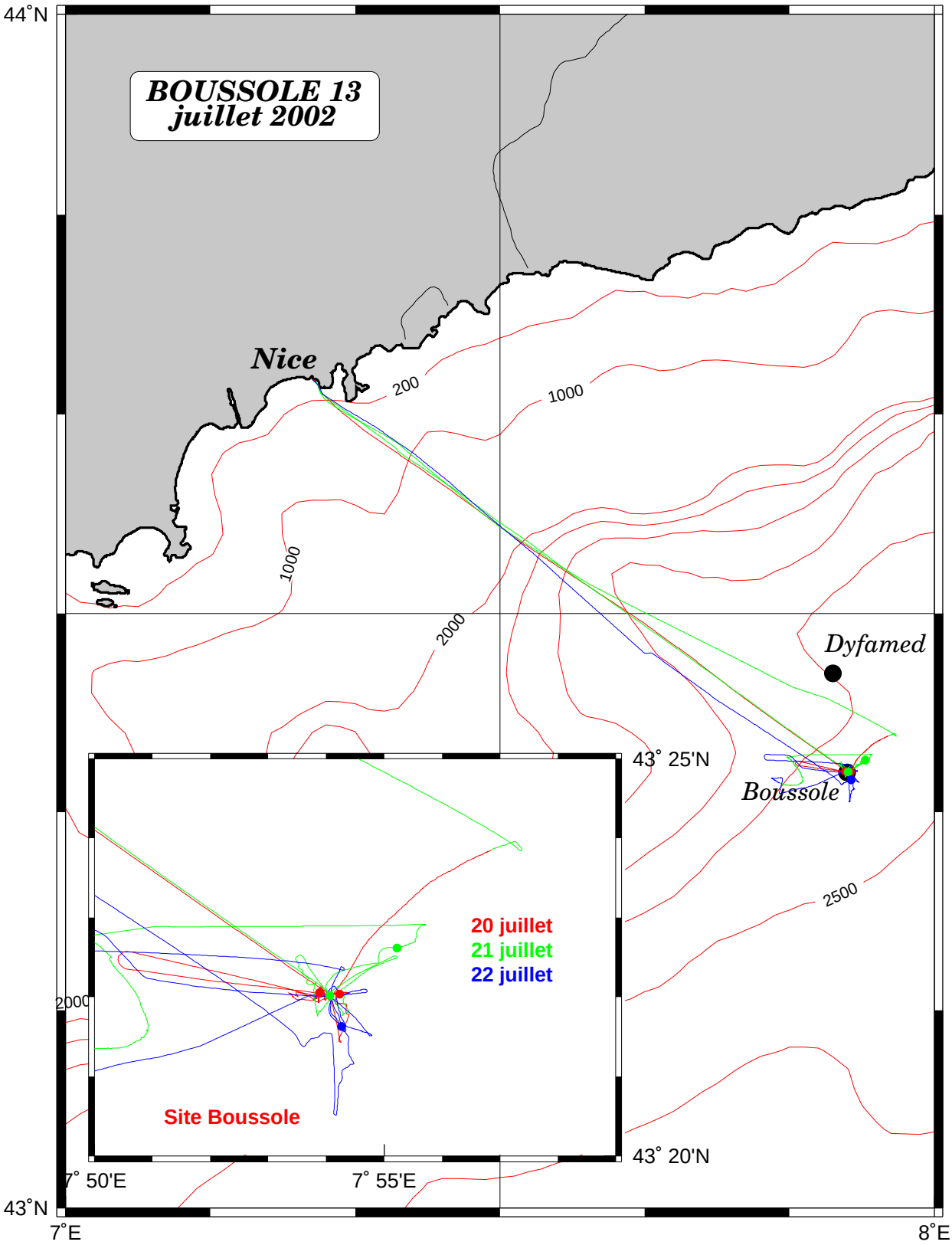


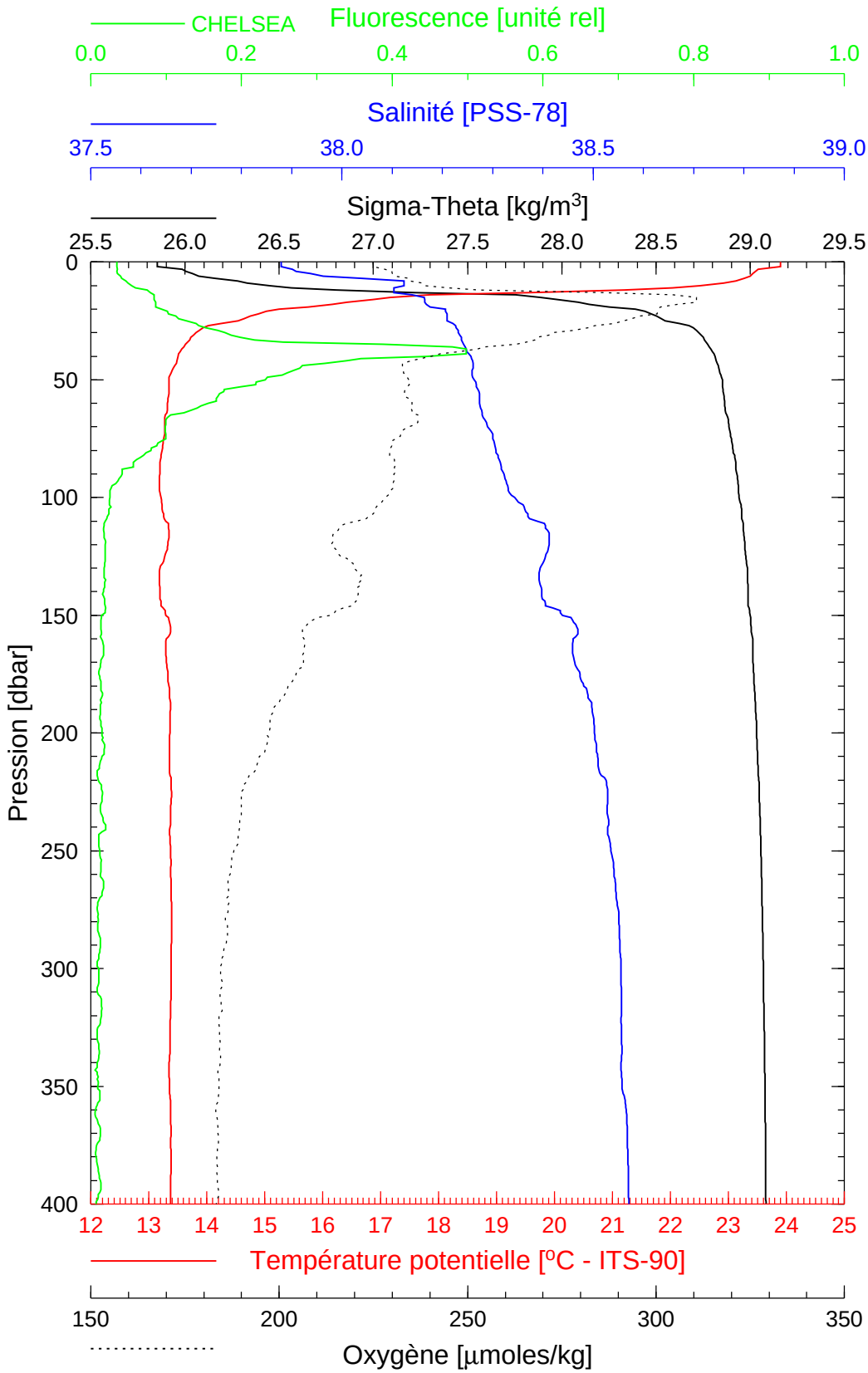






GMT 2004 Jan 12 14:37:14

**Boussole 13** **20/07/2002** **BOUS020720_01**

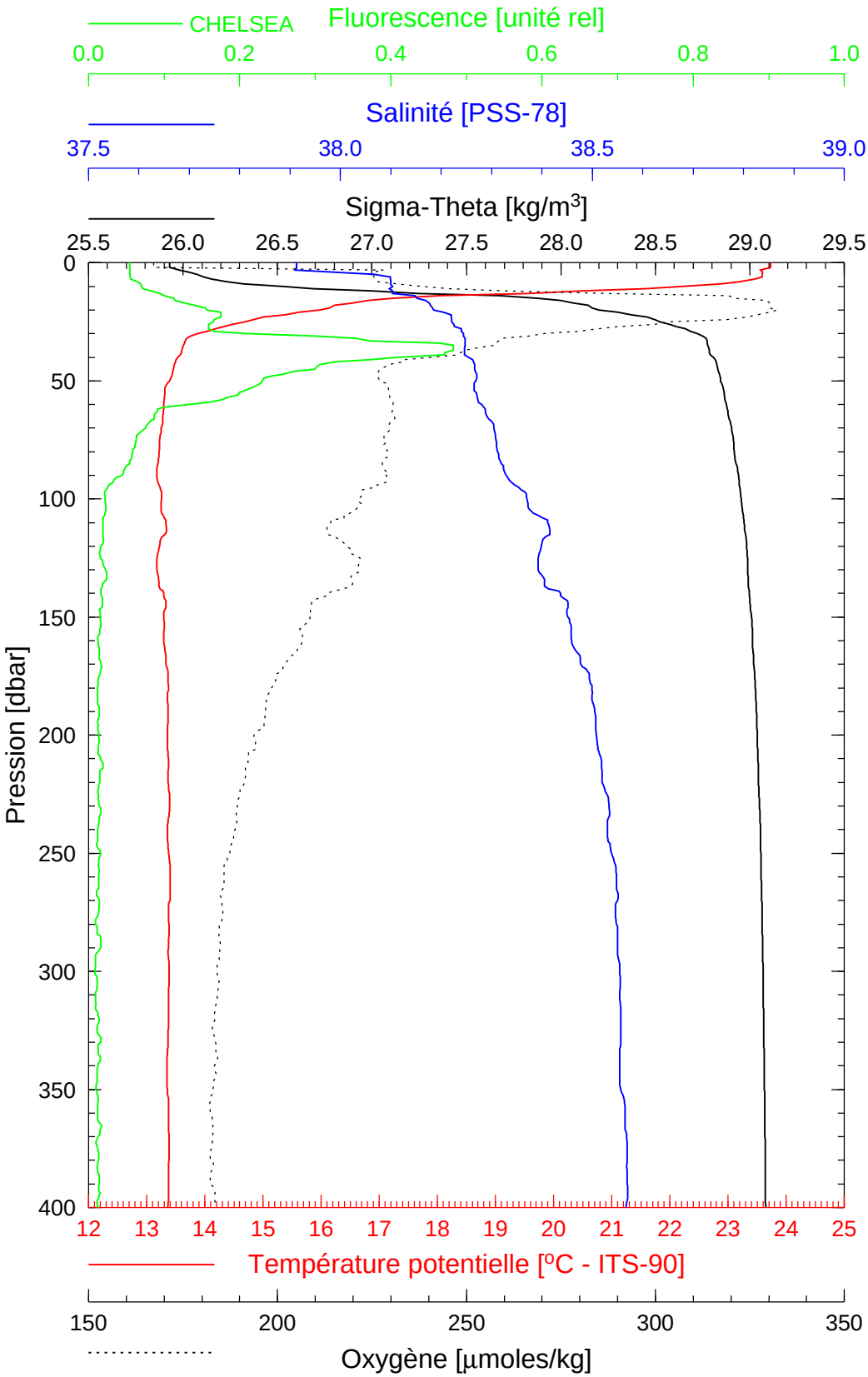
*bous001*




| | | | |
|---|---|---|---|
| *Date* | *20/07/2002* | *Latitude* | *43º22.038 N* |
| *Heure déb* | *10h 54min [TU]* | *Longitude* | *07º54.232 E* |

**Boussole 13** **20/07/2002** **BOUS020720_02**

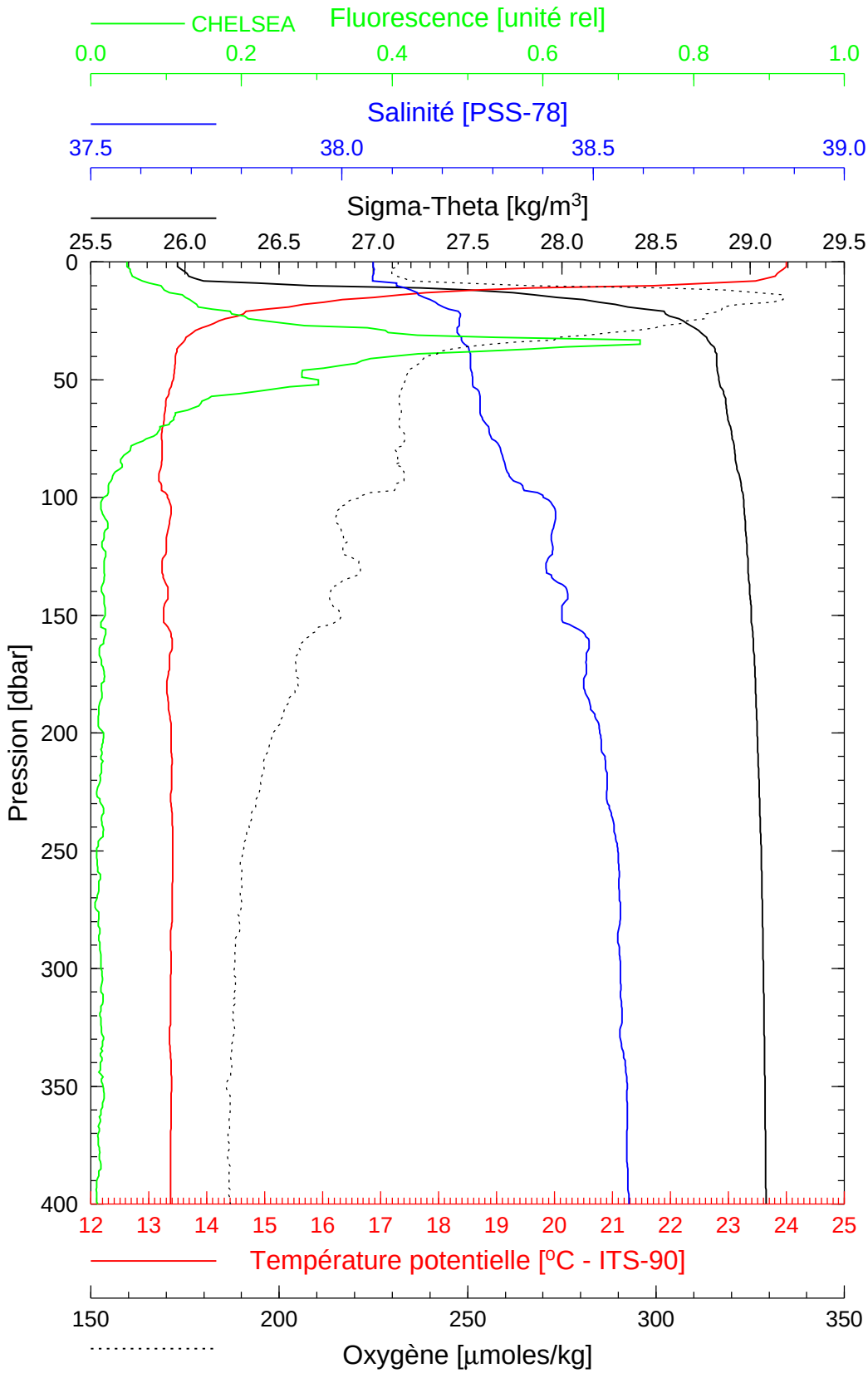
*bous002*




| | | | |
|---|---|---|---|
| *Date* | *20/07/2002* | *Latitude* | *43º22.059 N* |
| *Heure déb* | *15h 38min [TU]* | *Longitude* | *07º53.882 E* |

**Boussole 13** **21/07/2002** **BOUS020721_01**

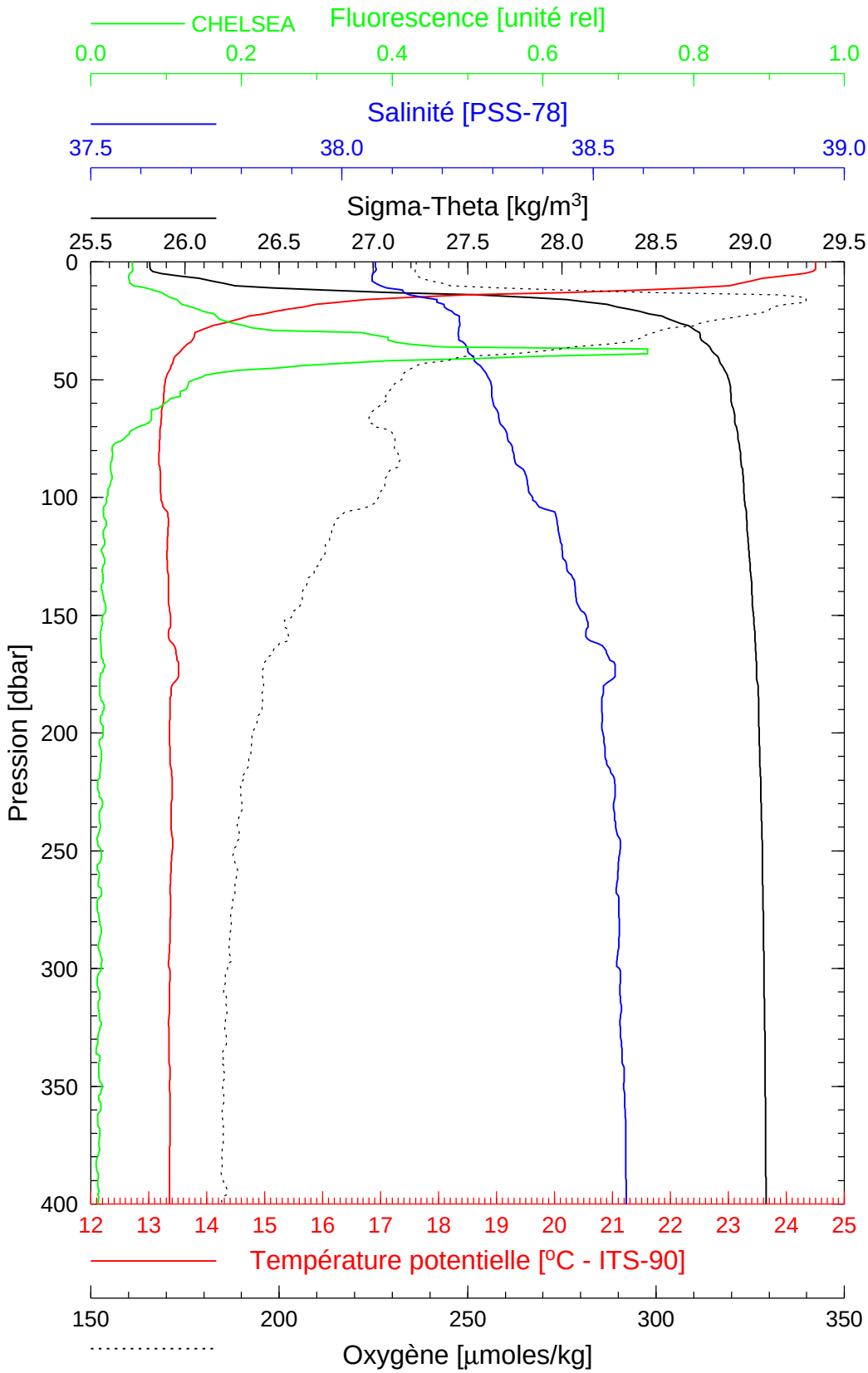
*bous003*




| | | | |
|---|---|---|---|
| *Date* | *21/07/2002* | *Latitude* | *43º22.020 N* |
| *Heure déb* | *09h 08min [TU]* | *Longitude* | *07º54.064 E* |

**Boussole 13** **21/07/2002** **BOUS020721_02**

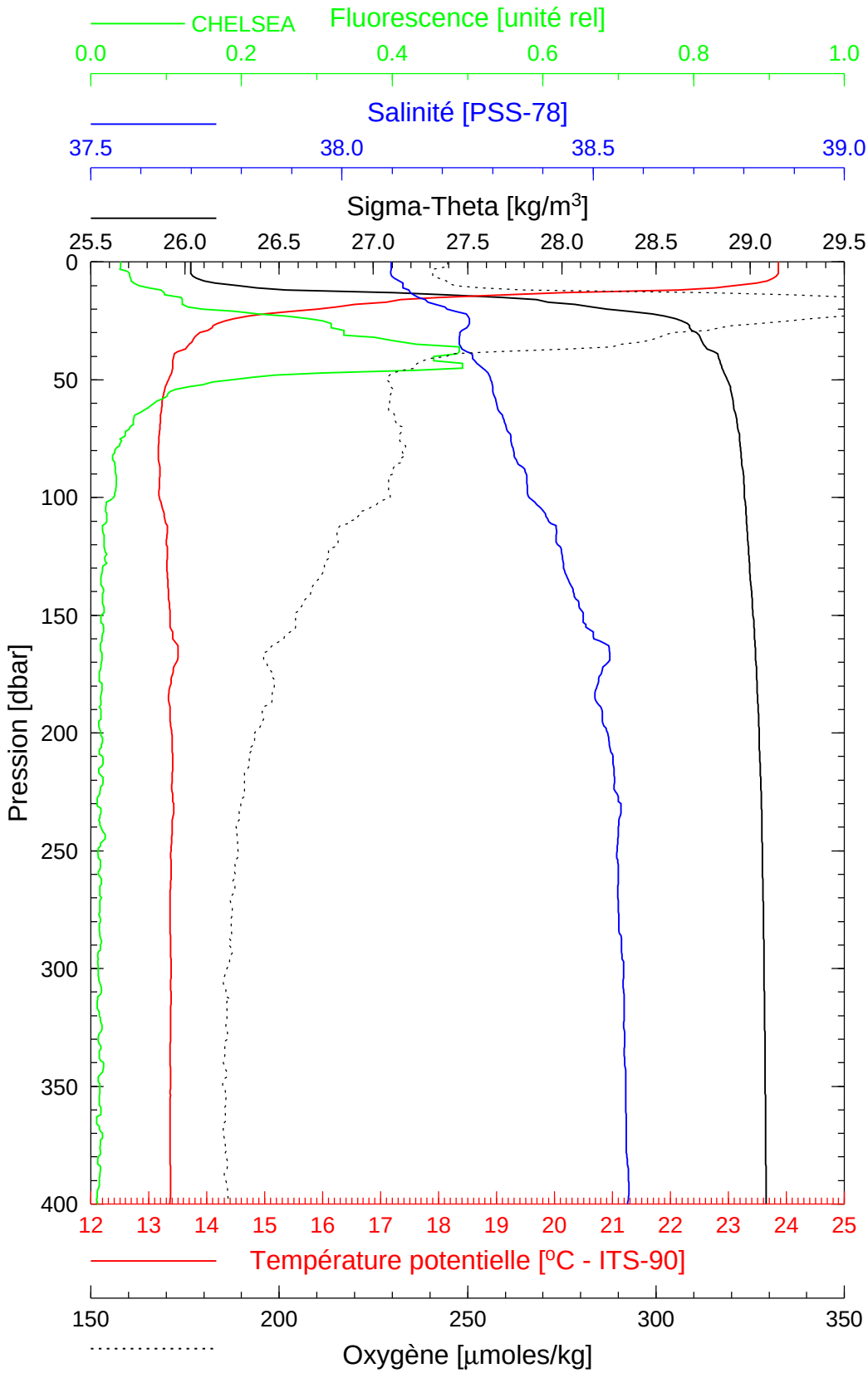
*bous004*



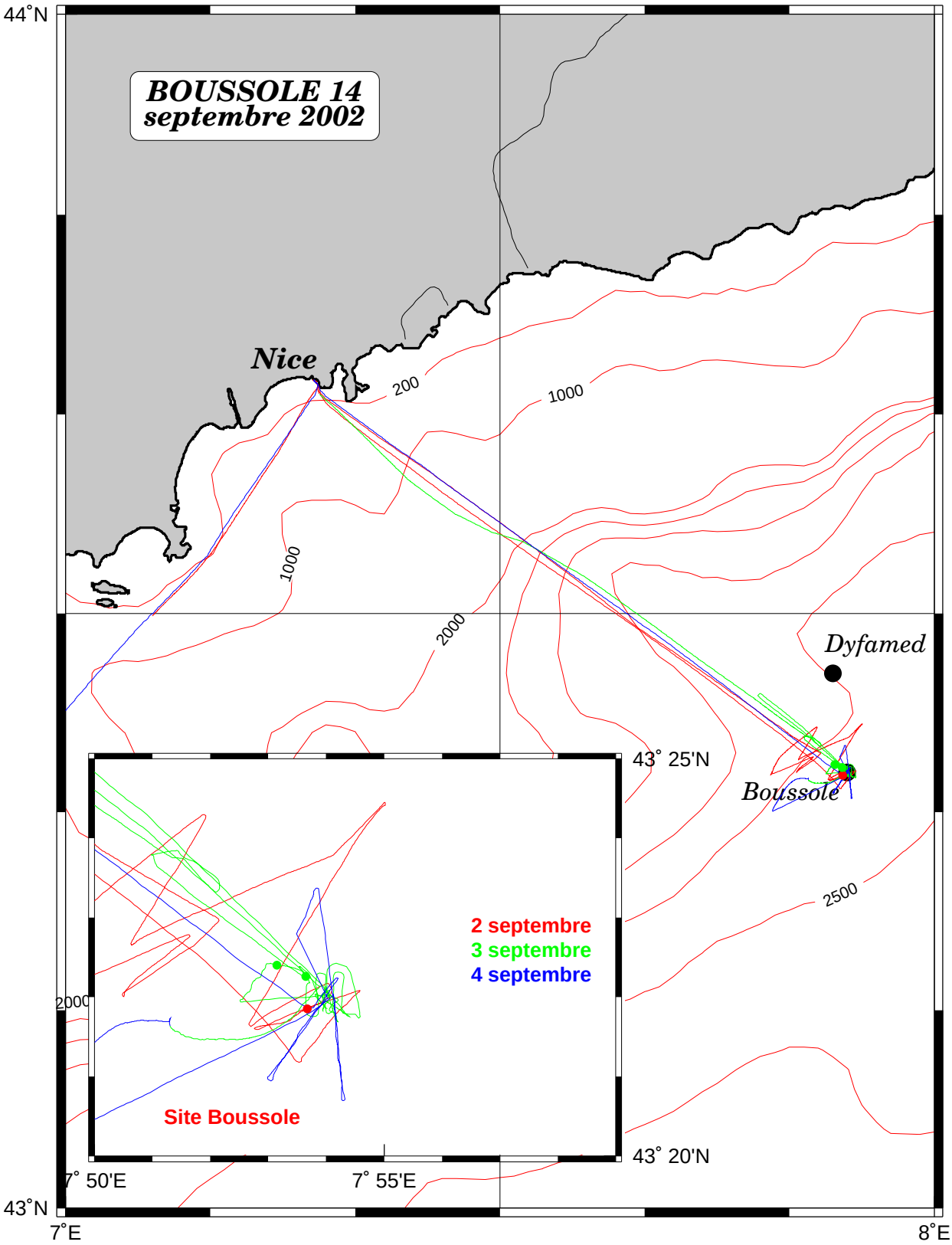

| | | | |
|---|---|---|---|
| *Date* | *21/07/2002* | *Latitude* | *43º22.621 N* |
| *Heure déb* | *15h 43min [TU]* | *Longitude* | *07º55.222 E* |

**Boussole 13** **22/07/2002** **BOUS020722_01**

*bous005*



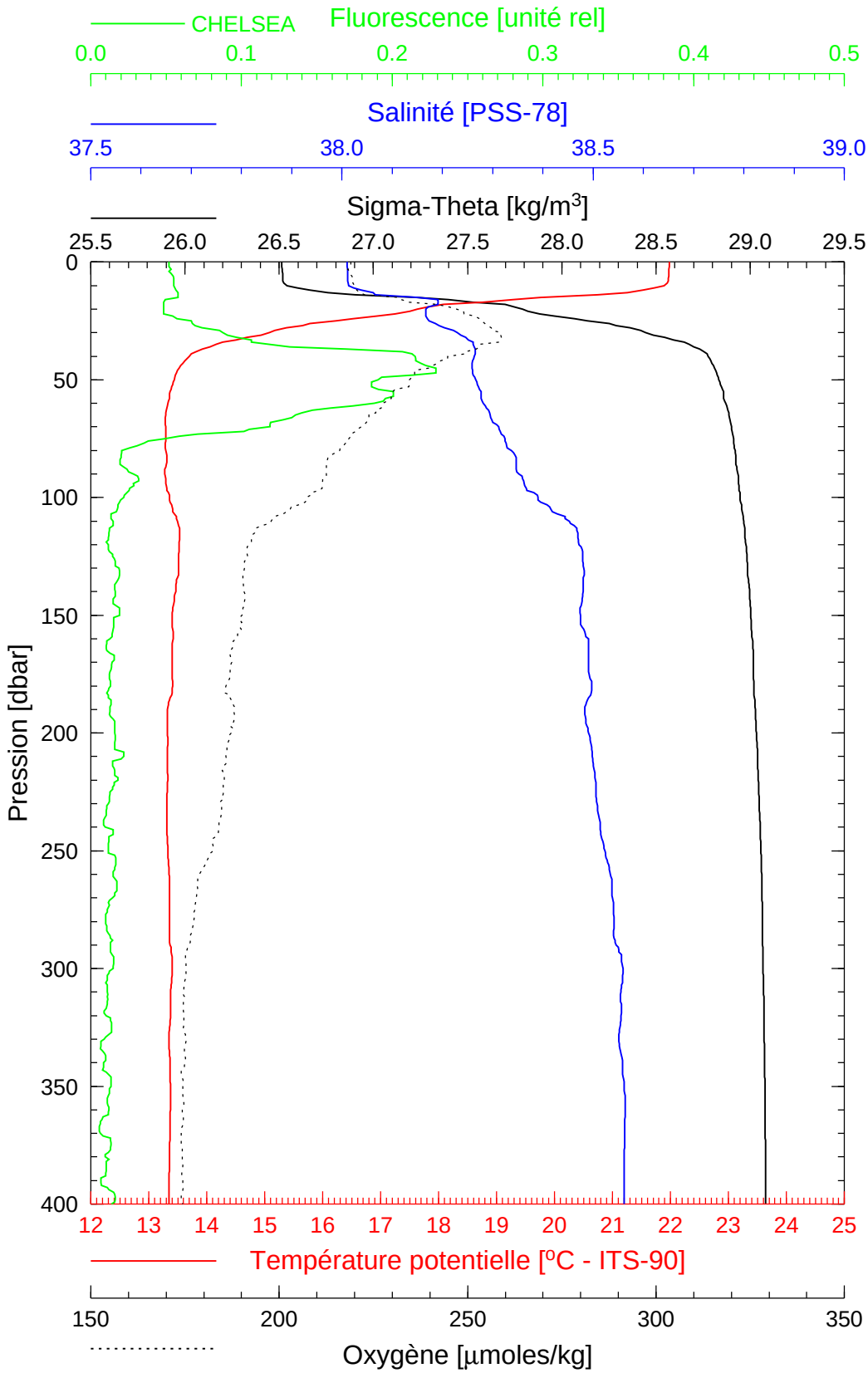

| | | | |
|---|---|---|---|
| *Date* | *22/07/2002* | *Latitude* | *43º21.629 N* |
| *Heure déb* | *08h 43min [TU]* | *Longitude* | *07º54.269 E* |




GMT 2004 Jan 12 15:32:55

**Boussole 14** **02/09/2002** **BOUS020902_01**

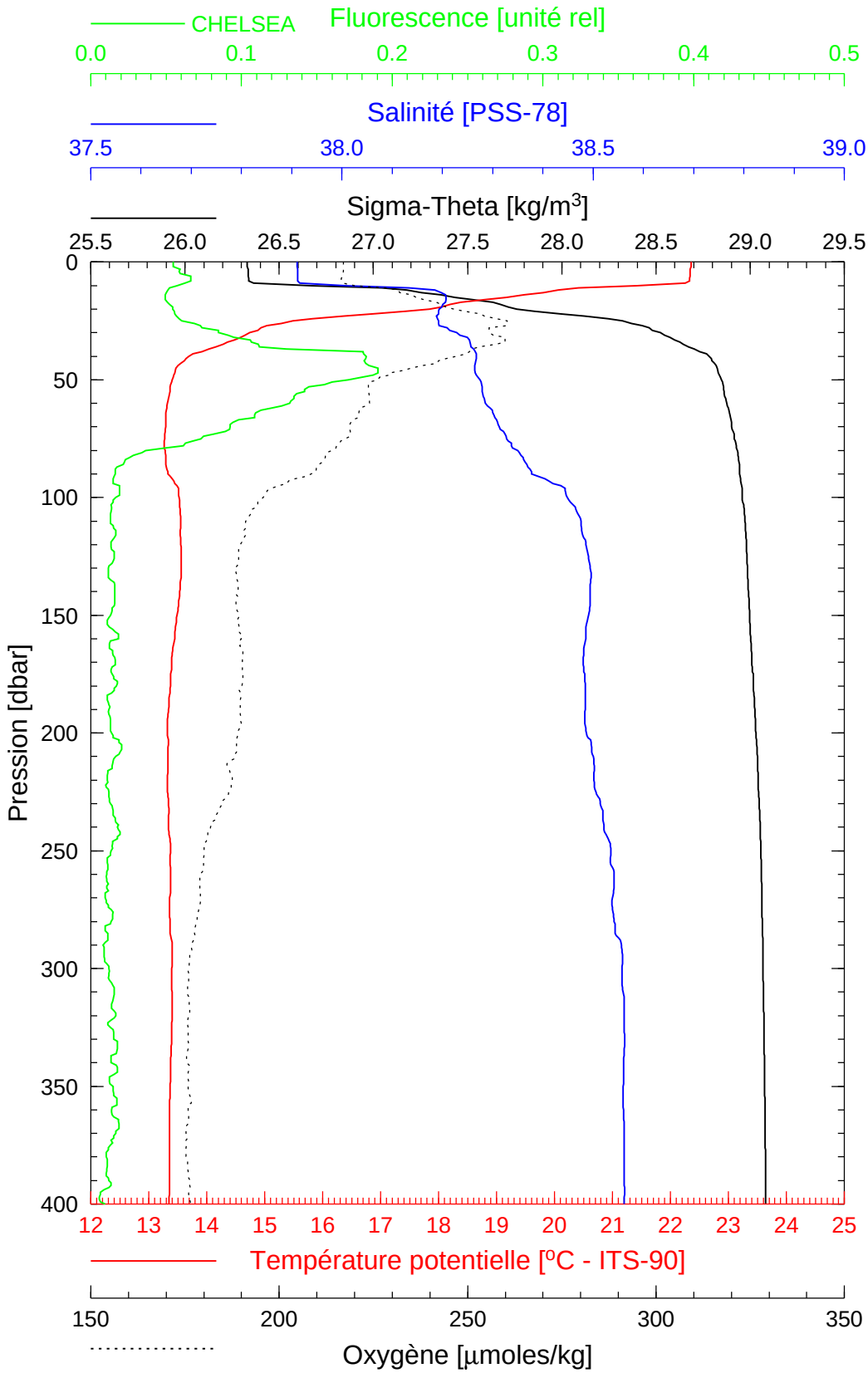
*bous001*




| | | | |
|---|---|---|---|
| *Date* | *02/09/2002* | *Latitude* | *43º21.852 N* |
| *Heure déb* | *15h 27min [TU]* | *Longitude* | *07º53.674 E* |

**BOUSSOLE 14** **03/09/2002** **BOUS020903_01**

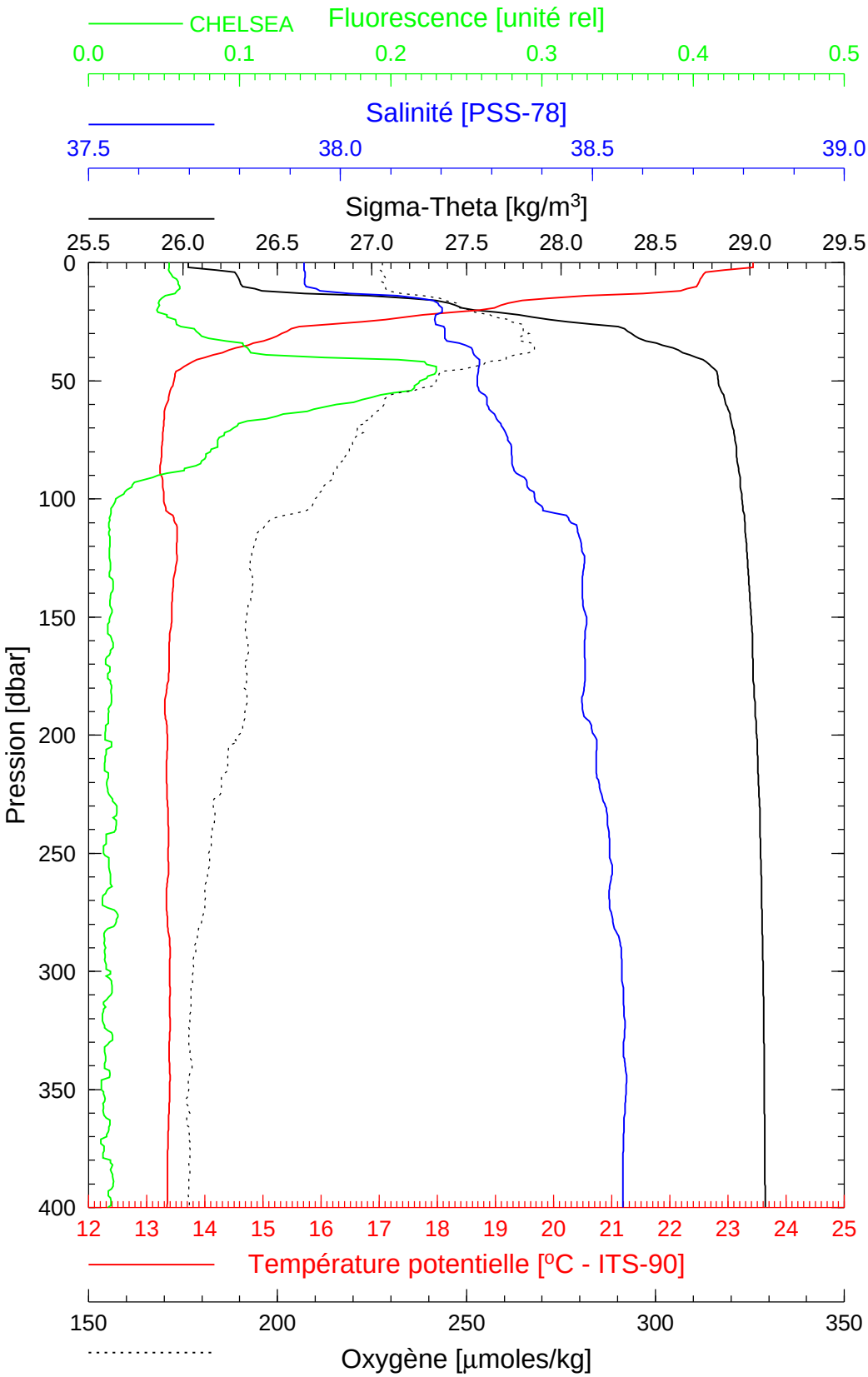
*bous002*




| | | | |
|---|---|---|---|
| *Date* | *03/09/2002* | *Latitude* | *43°22.402 N* |
| *Heure déb* | *07h 04min [TU]* | *Longitude* | *07°53.152 E* |

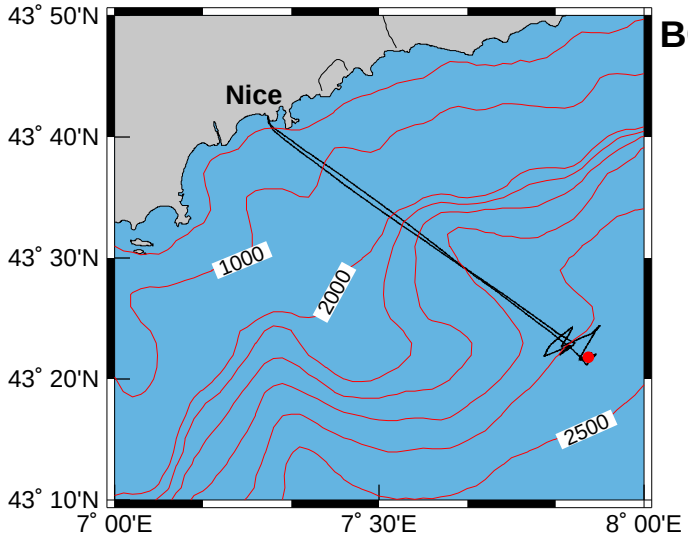
**Boussole 14** **03/09/2002** **BOUS020903_02**

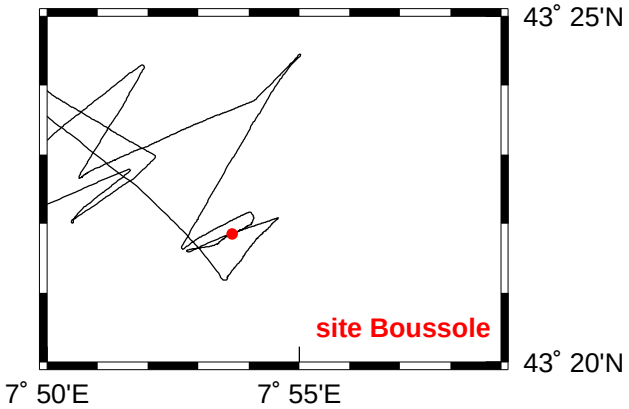
*bous003*

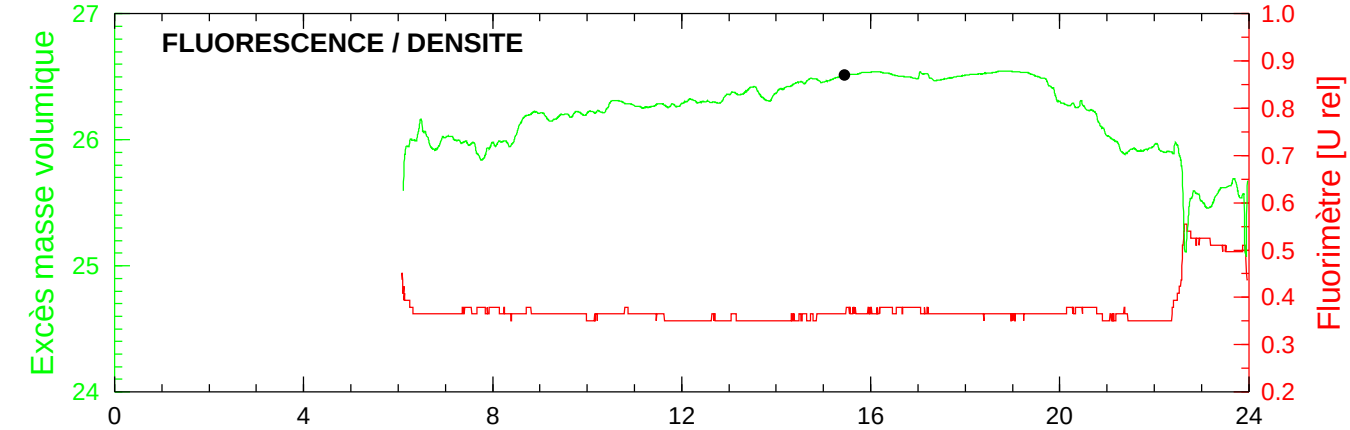


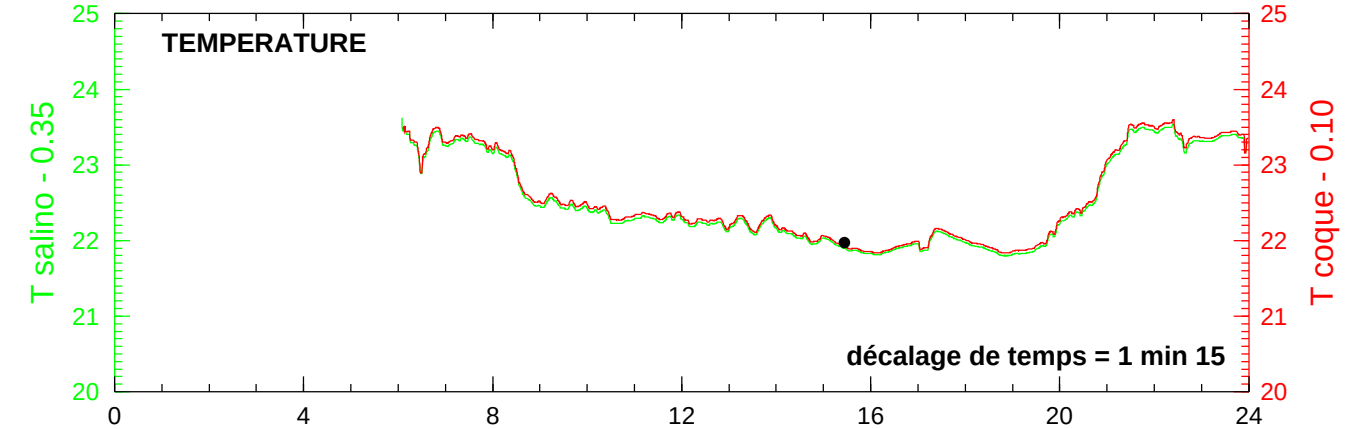

| | | | |
|---|---|---|---|
| *Date* | *03/09/2002* | *Latitude* | *43º22.263 N* |
| *Heure déb* | *14h 33min [TU]* | *Longitude* | *07º53.647 E* |

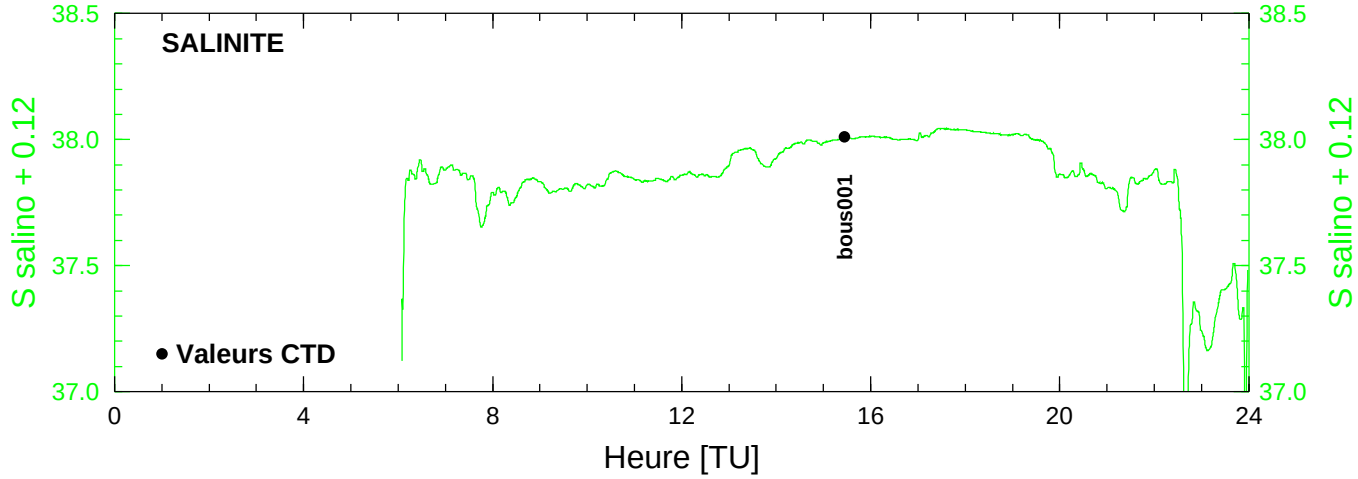
# BOUSSOLE 14 2 septembre 2002

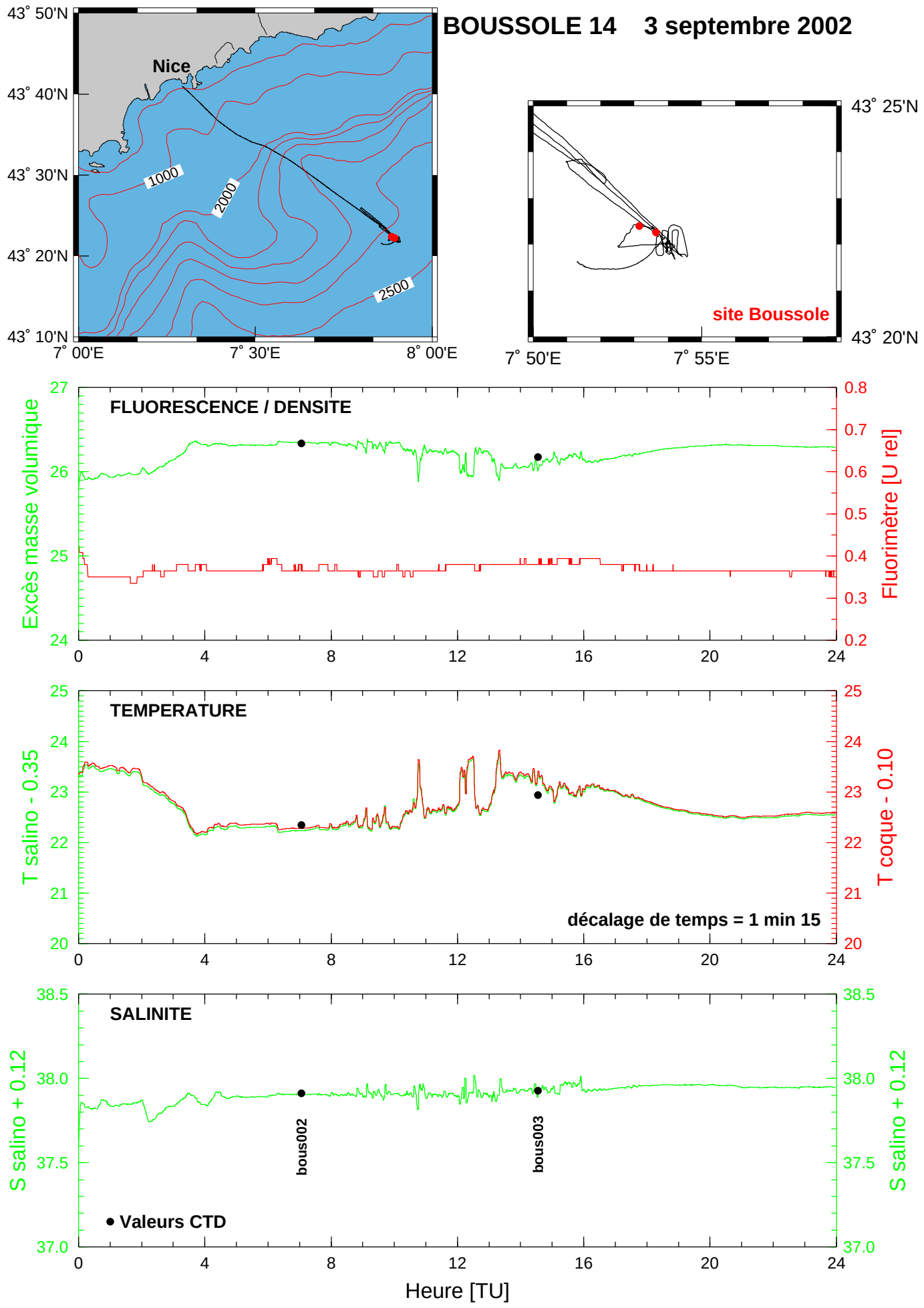


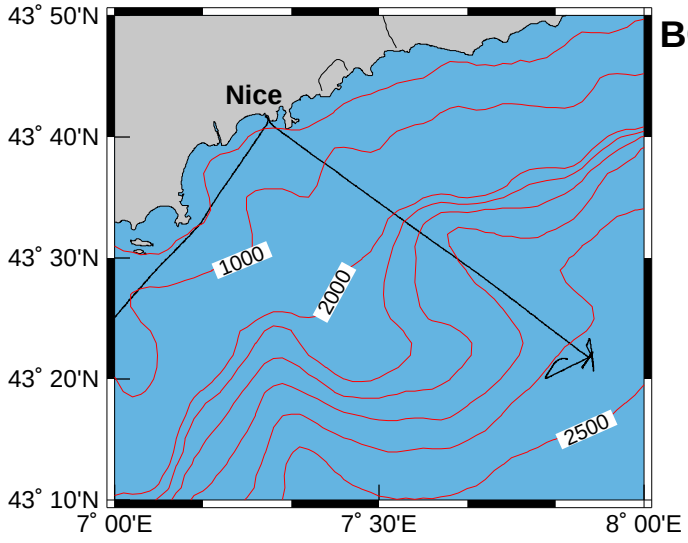



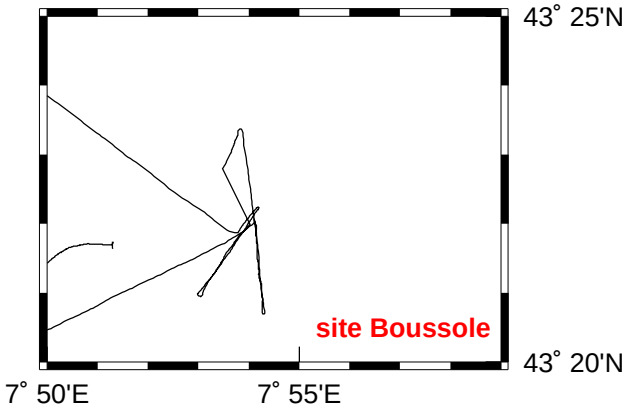



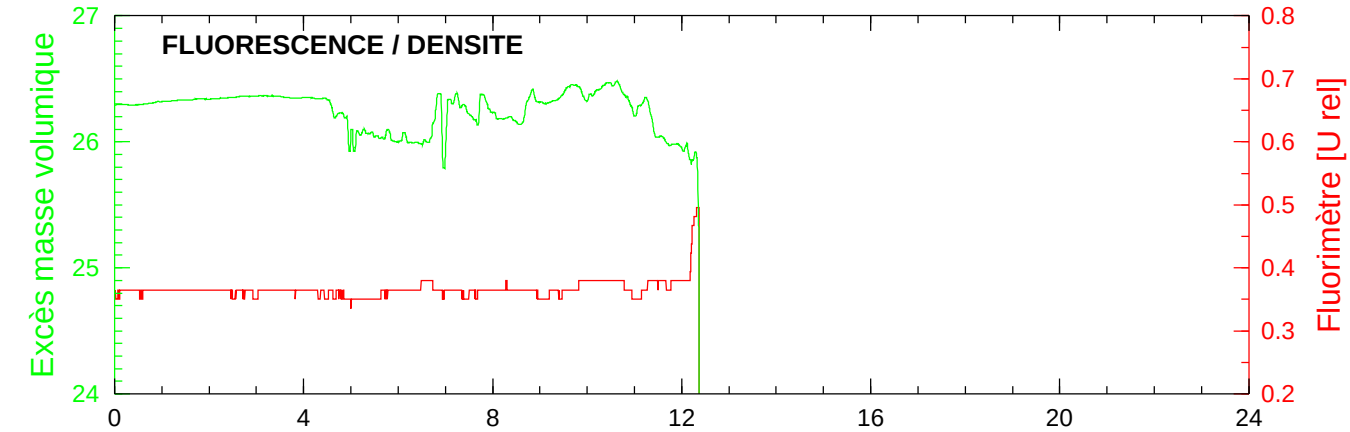



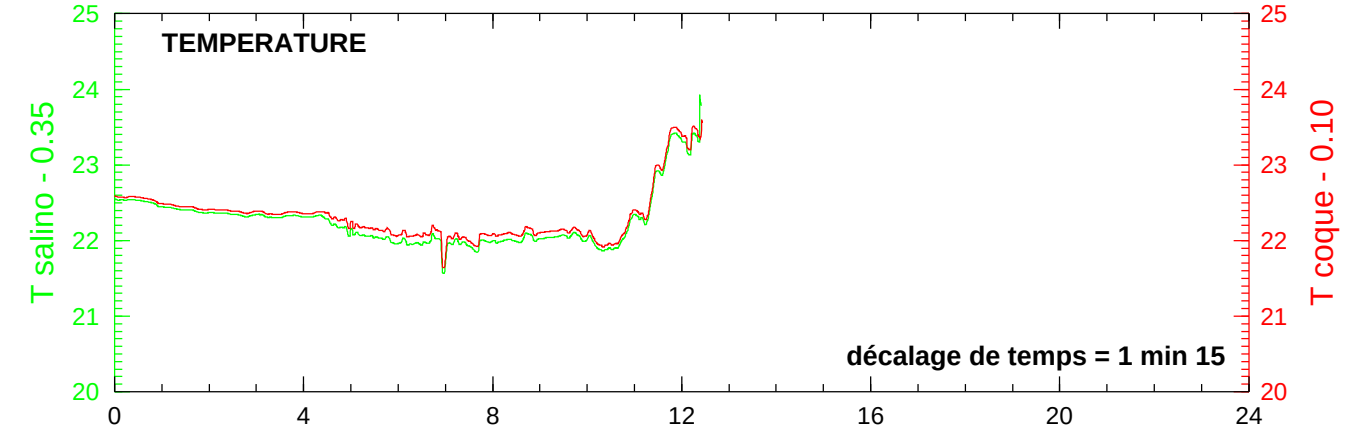

BOUSSOLE 14 3 septembre 2002
Nice
1000
2000
2500
site Boussole
FLUORESCENCE / DENSITE
Excès masse volumique
Fluorimètre [U rel]
TEMPERATURE
T salino - 0.35
T coque - 0.10
décalage de temps = 1 min 15
SALINITE
S salino + 0.12
bous002
bous003
Valeurs CTD
Heure [TU]

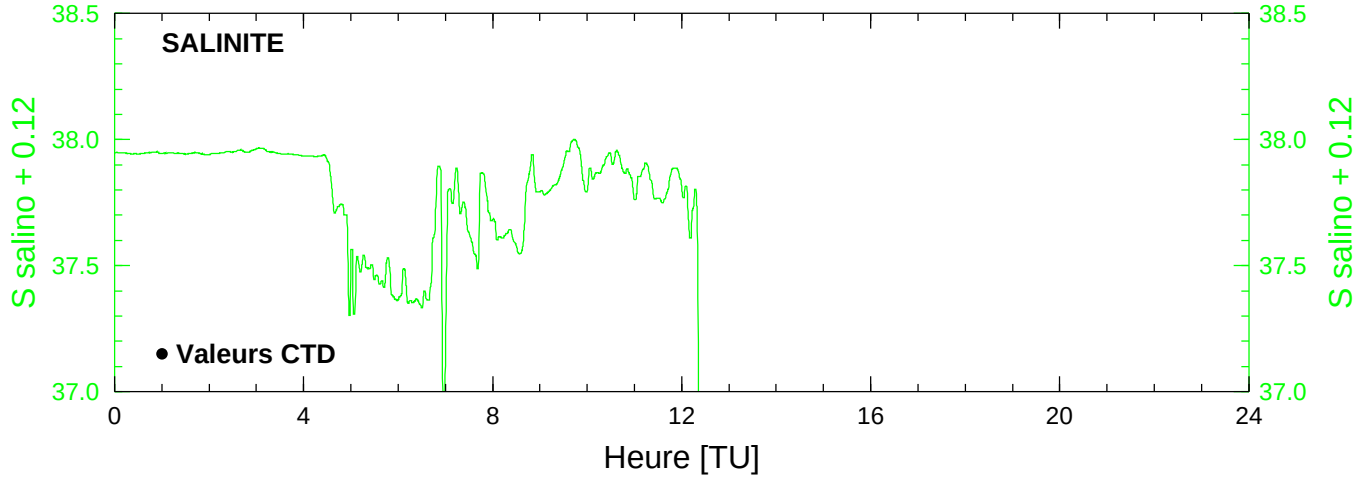
# BOUSSOLE 14 4 septembre 2002

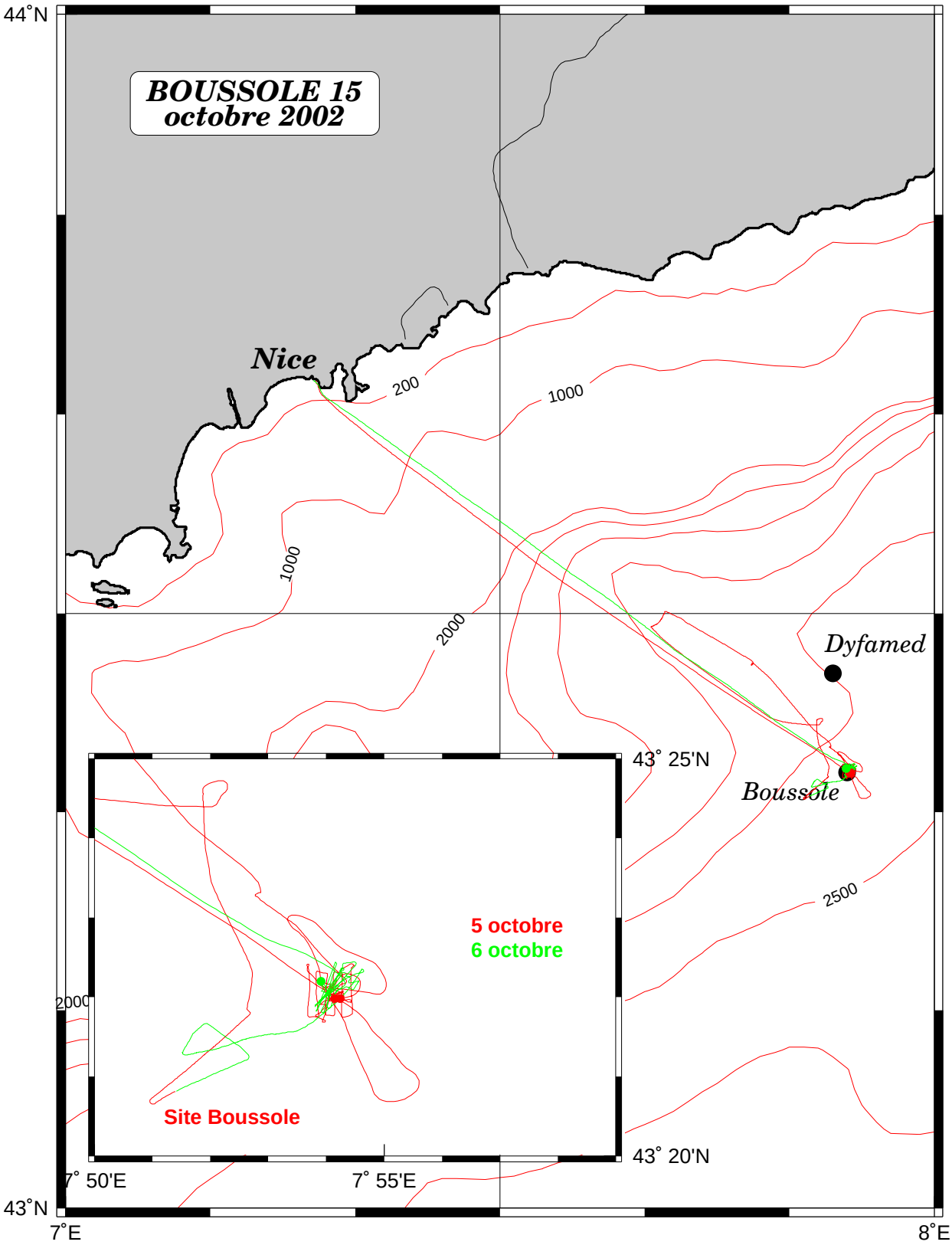


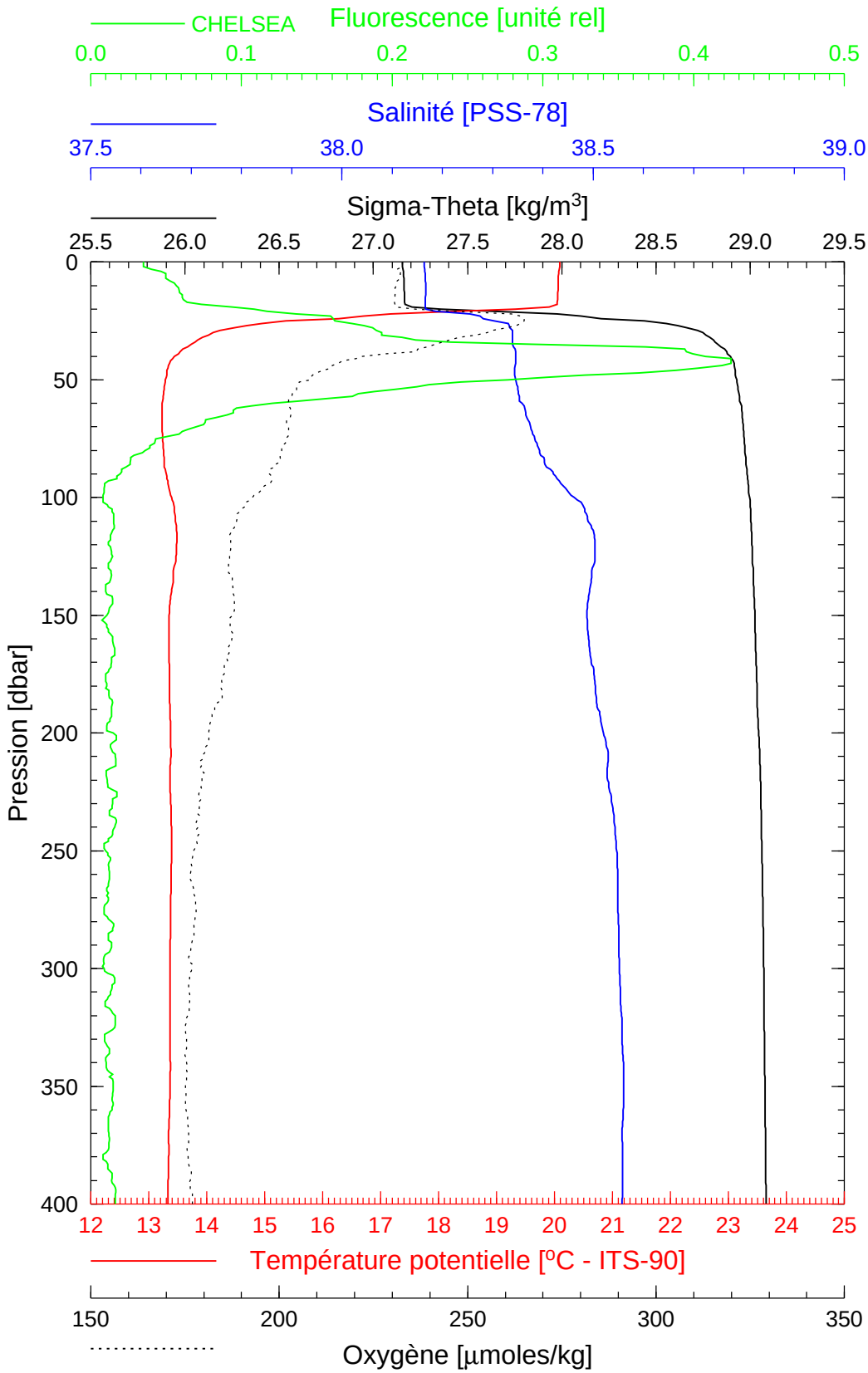






GMT 2004 Jan 13 12:27:23

**Boussole 15** **05/10/2002** **BOUS021005_01**

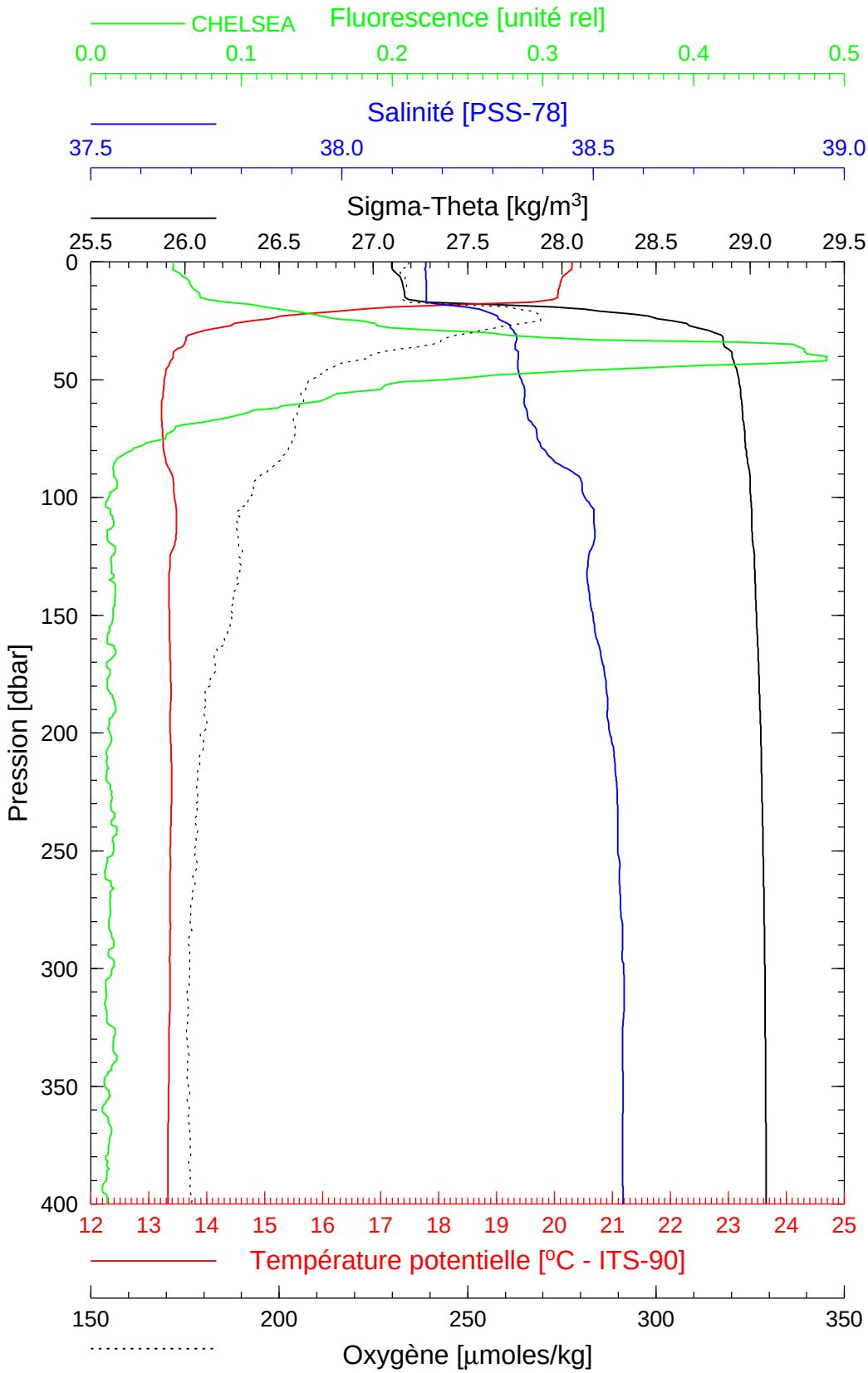
*bous001*




| | | | |
|---|---|---|---|
| *Date* | *05/10/2002* | *Latitude* | *43º21.986 N* |
| *Heure déb* | *08h 44min [TU]* | *Longitude* | *07º54.243 E* |

**Boussole 15** **05/10/2002** **BOUS021005_02**

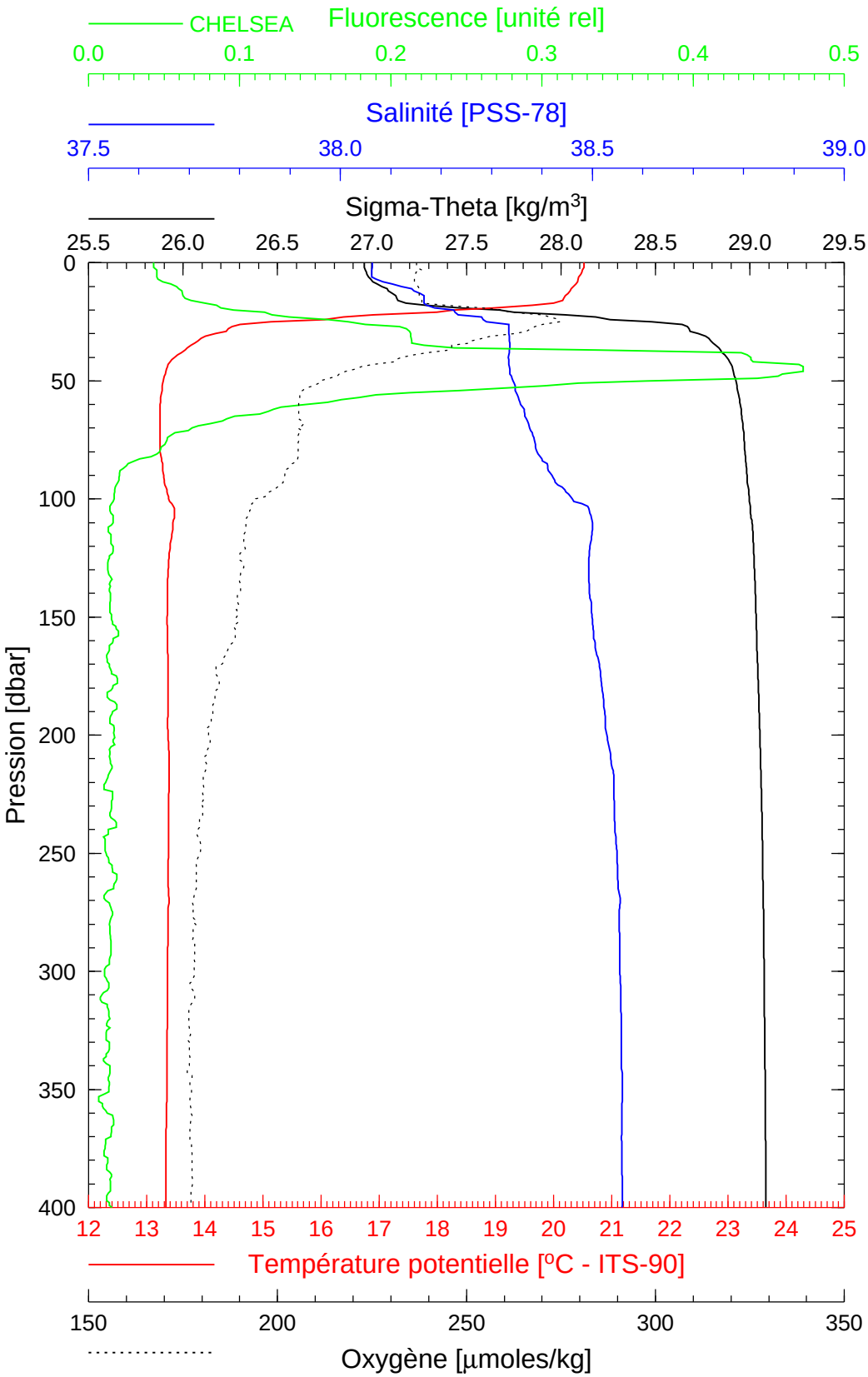
*bous002*




| | | | |
|---|---|---|---|
| *Date* | *05/10/2002* | *Latitude* | *43º21.985 N* |
| *Heure déb* | *12h 35min [TU]* | *Longitude* | *07º54.147 E* |

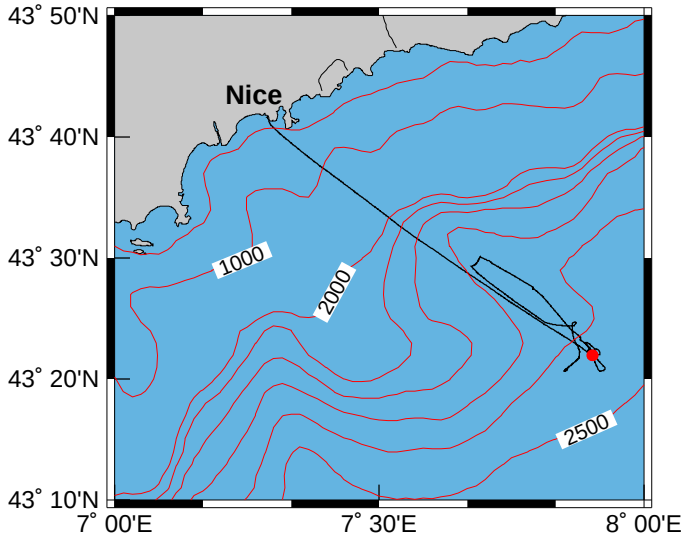
**Boussole 15** **06/10/2002** **BOUS021006_01**

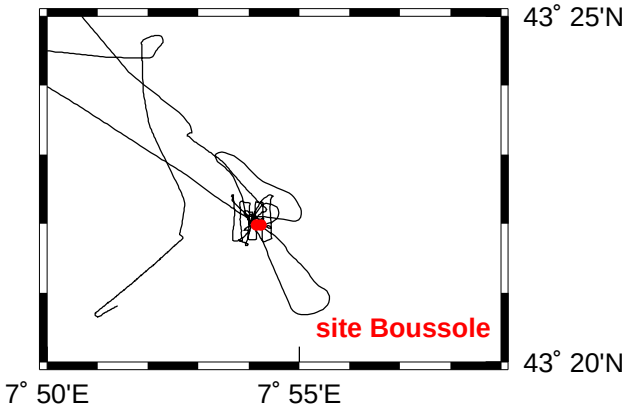
*bous003*

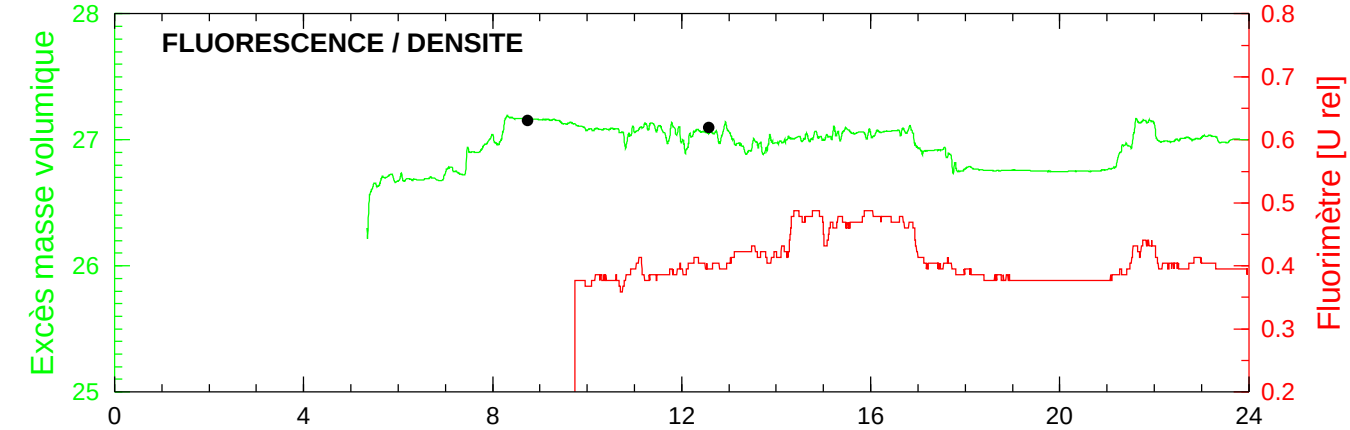


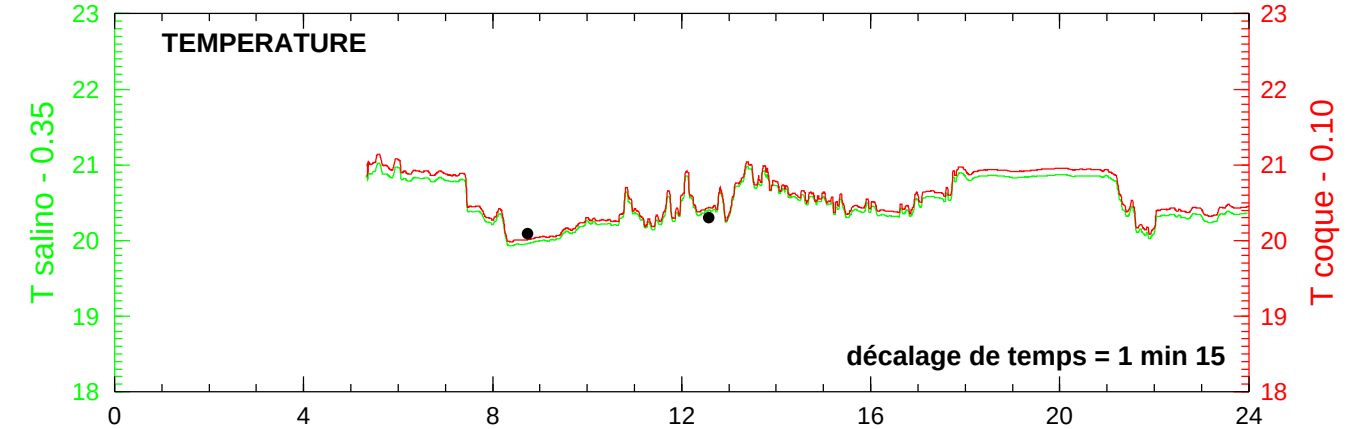

| | | | |
|---|---|---|---|
| *Date* | *06/10/2002* | *Latitude* | *43º22.198 N* |
| *Heure déb* | *13h 27min [TU]* | *Longitude* | *07º53.915 E* |

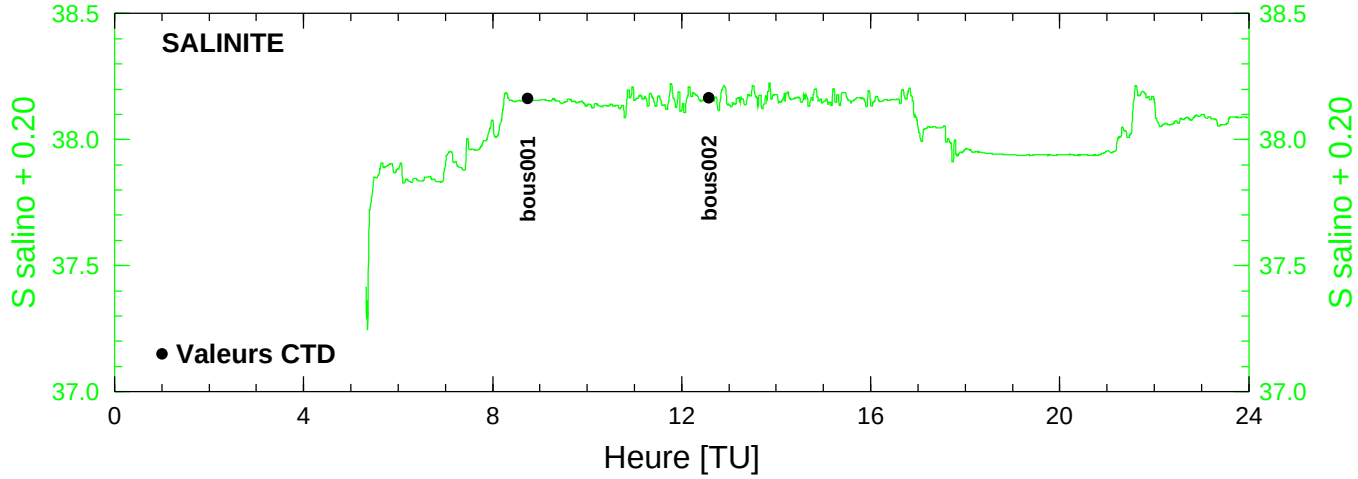
# BOUSSOLE 15 5 octobre 2002



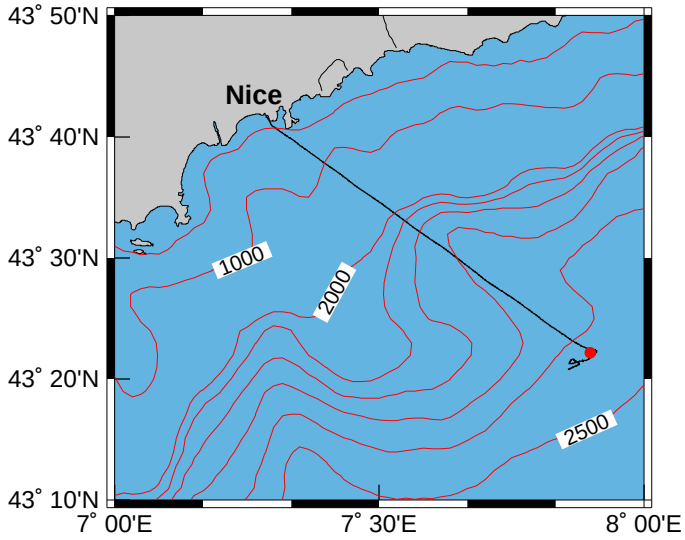



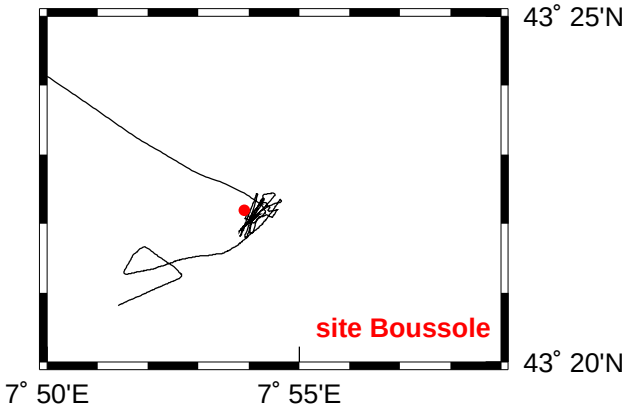



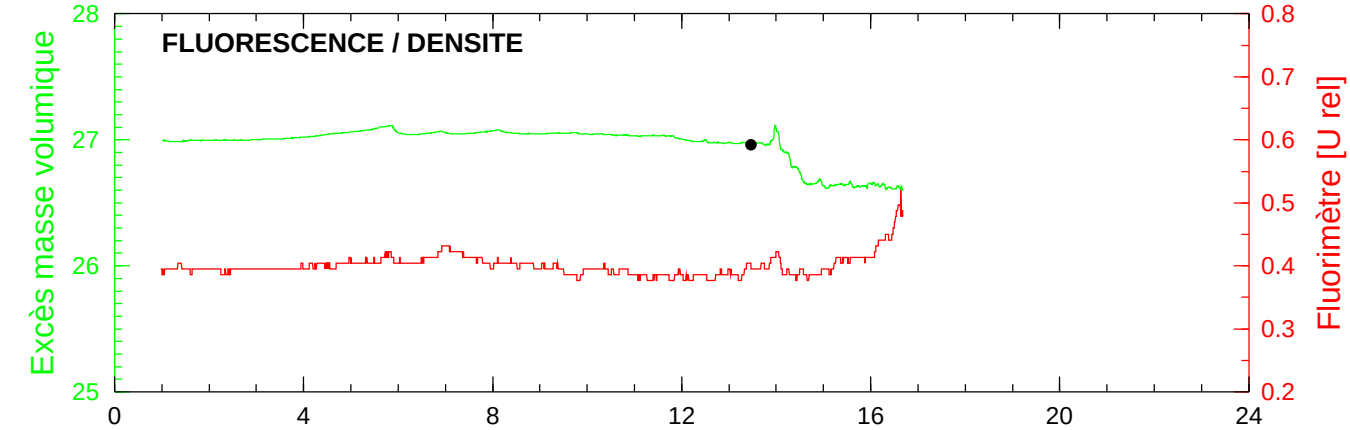



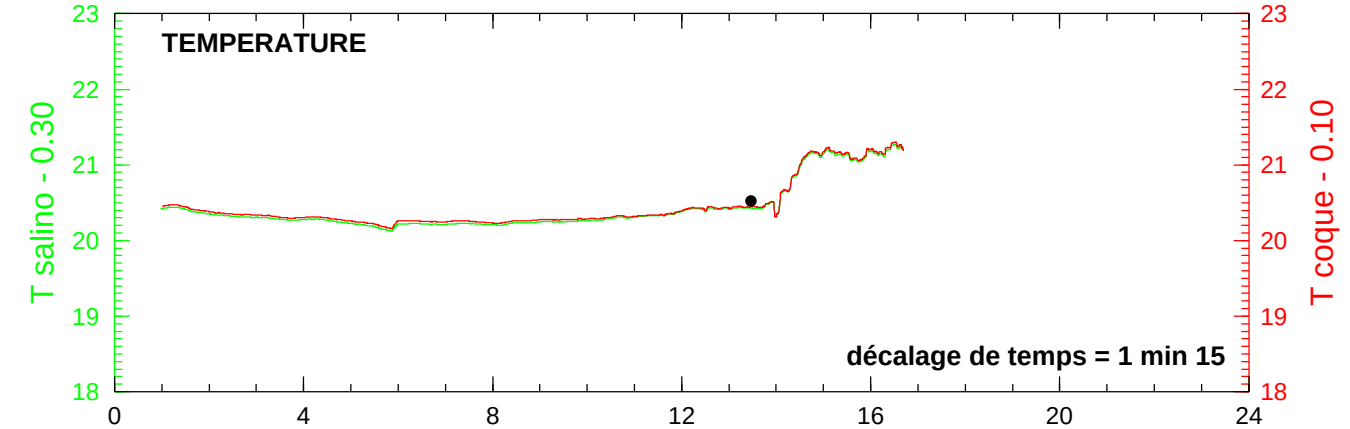



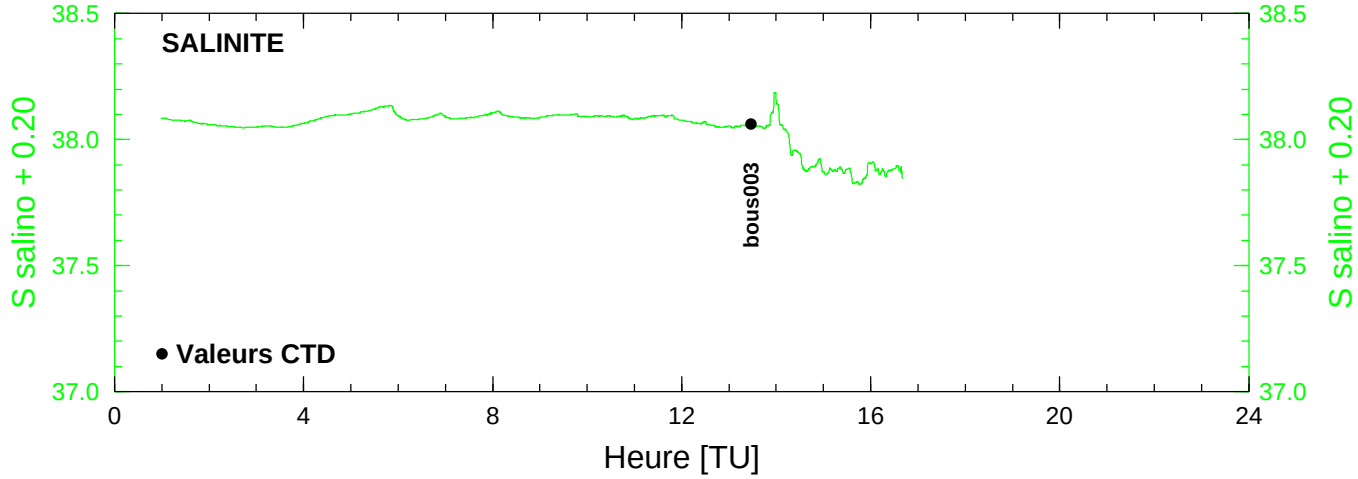
# BOUSSOLE 15 6 octobre 2002

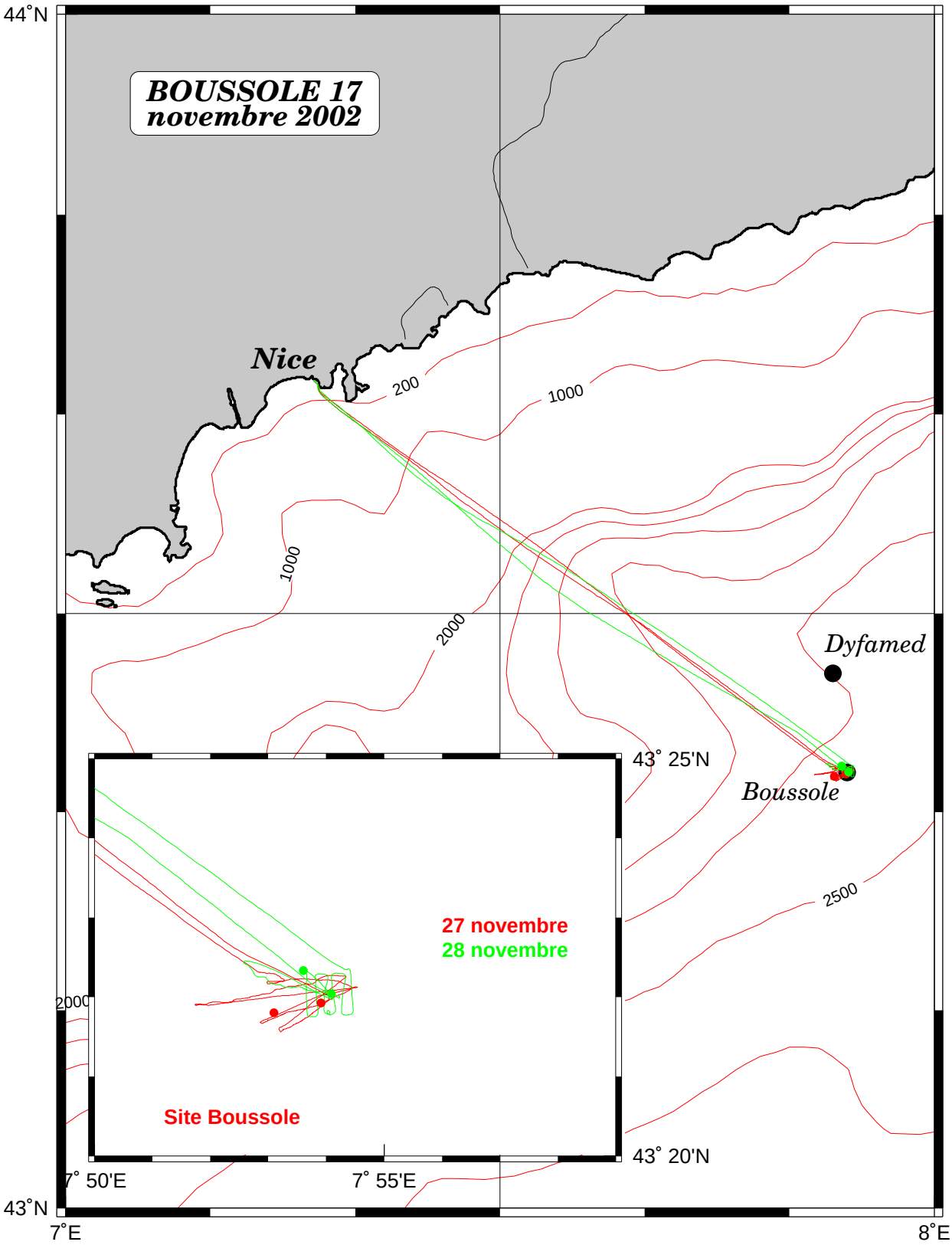


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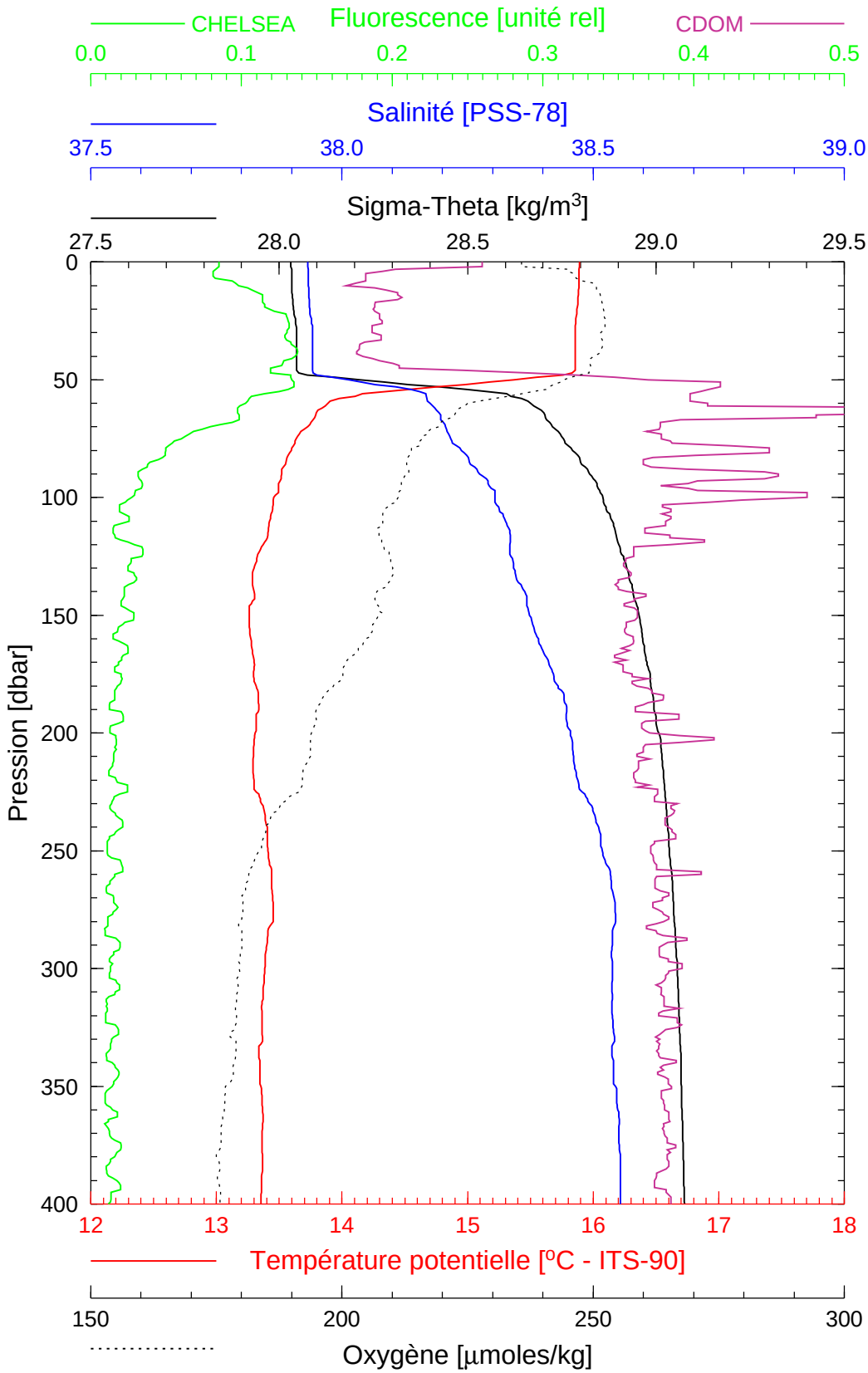
**Boussole 17** **27/11/2002** **BOUS021127_01**

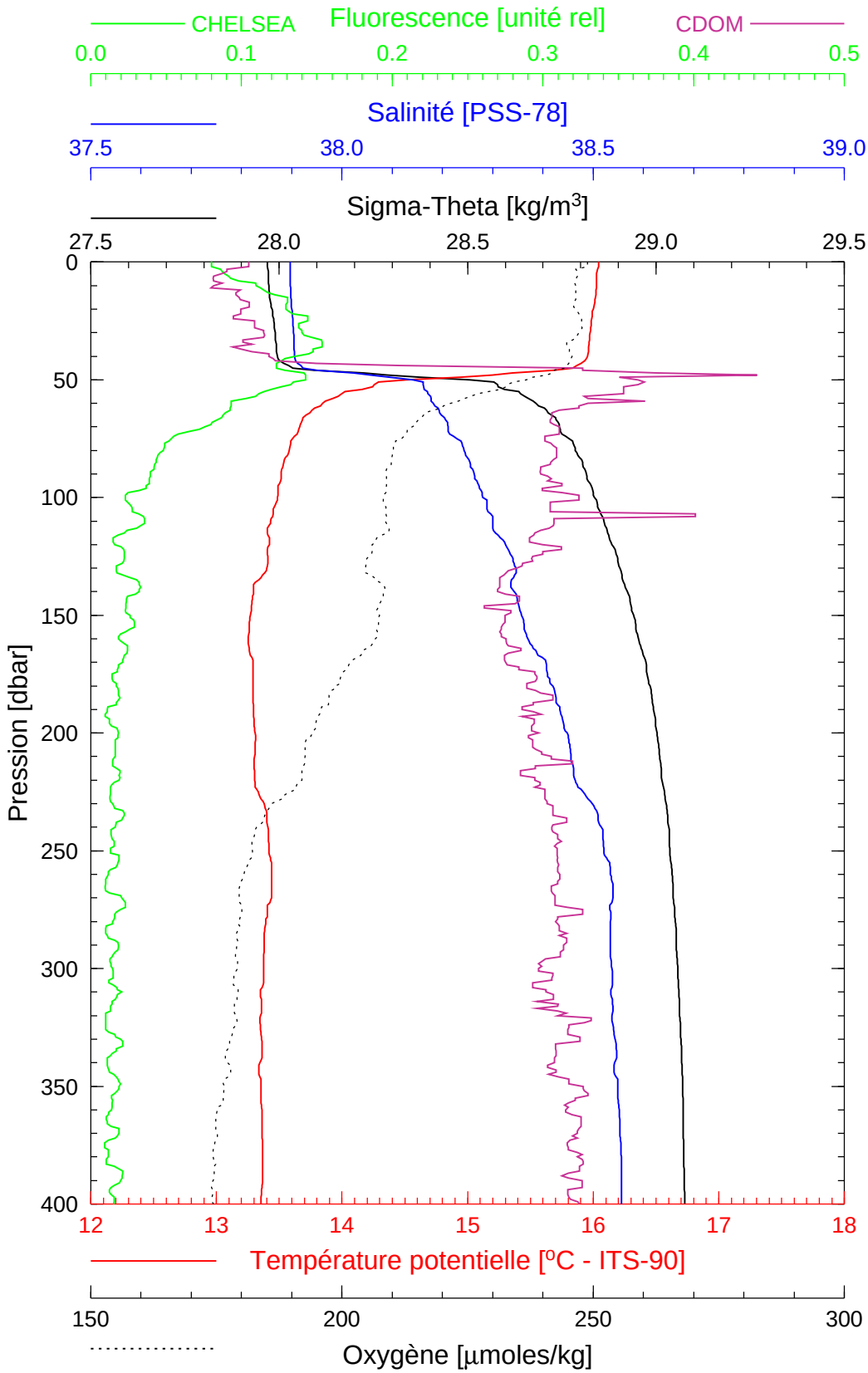
*bous001*




| | | | |
|---|---|---|---|
| *Date* | *27/11/2002* | *Latitude* | *43º21.802 N* |
| *Heure déb* | *10h 16min [TU]* | *Longitude* | *07º53.768 E* |

**Boussole 17** **27/11/2002** **BOUS021127_02**

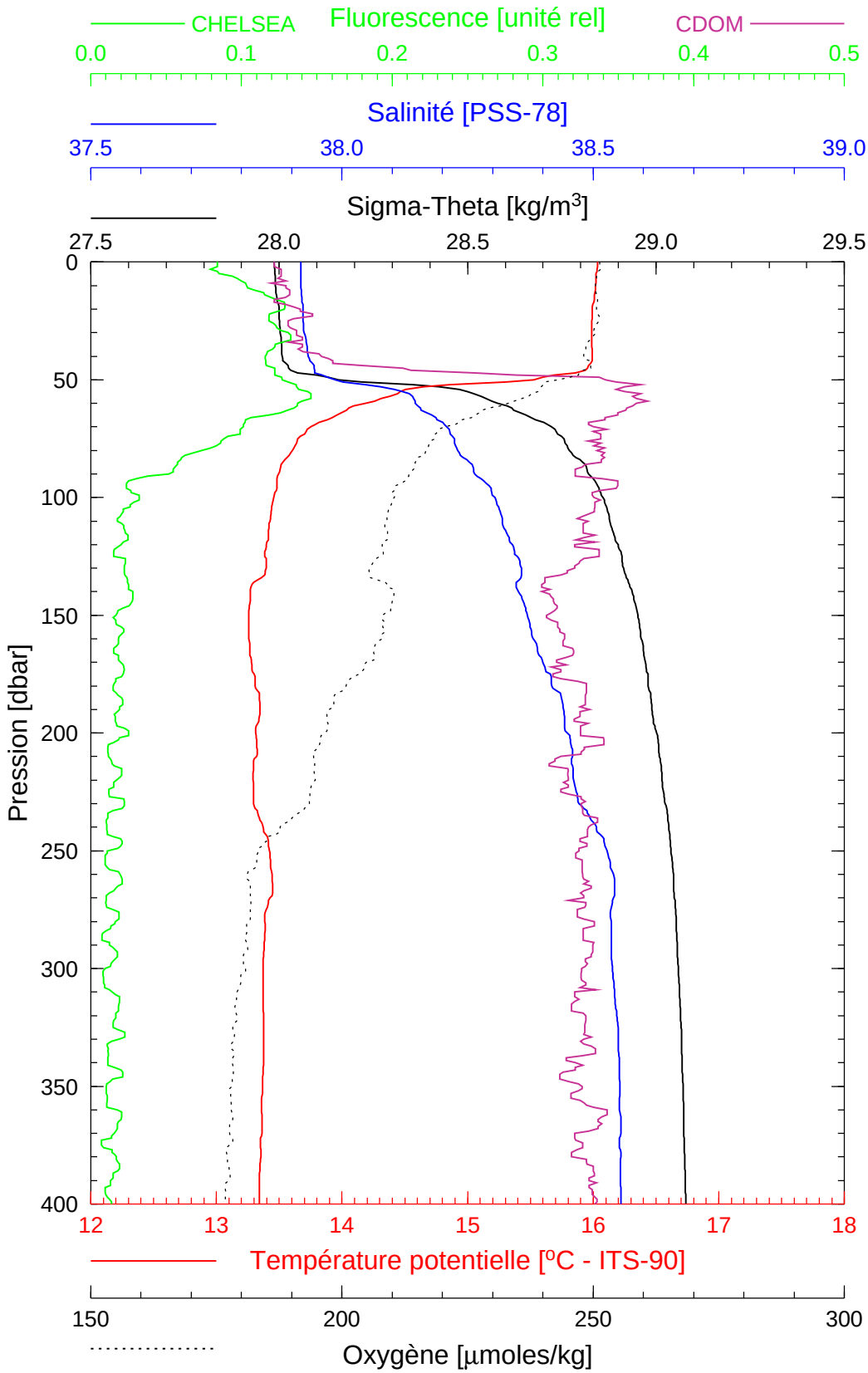
*bous002*




| | | | |
|---|---|---|---|
| *Date* | *27/11/2002* | *Latitude* | *43º21.925 N* |
| *Heure déb* | *13h 01min [TU]* | *Longitude* | *07º53.909 E* |

**Boussole 17** **28/11/2002** **BOUS021128_01**

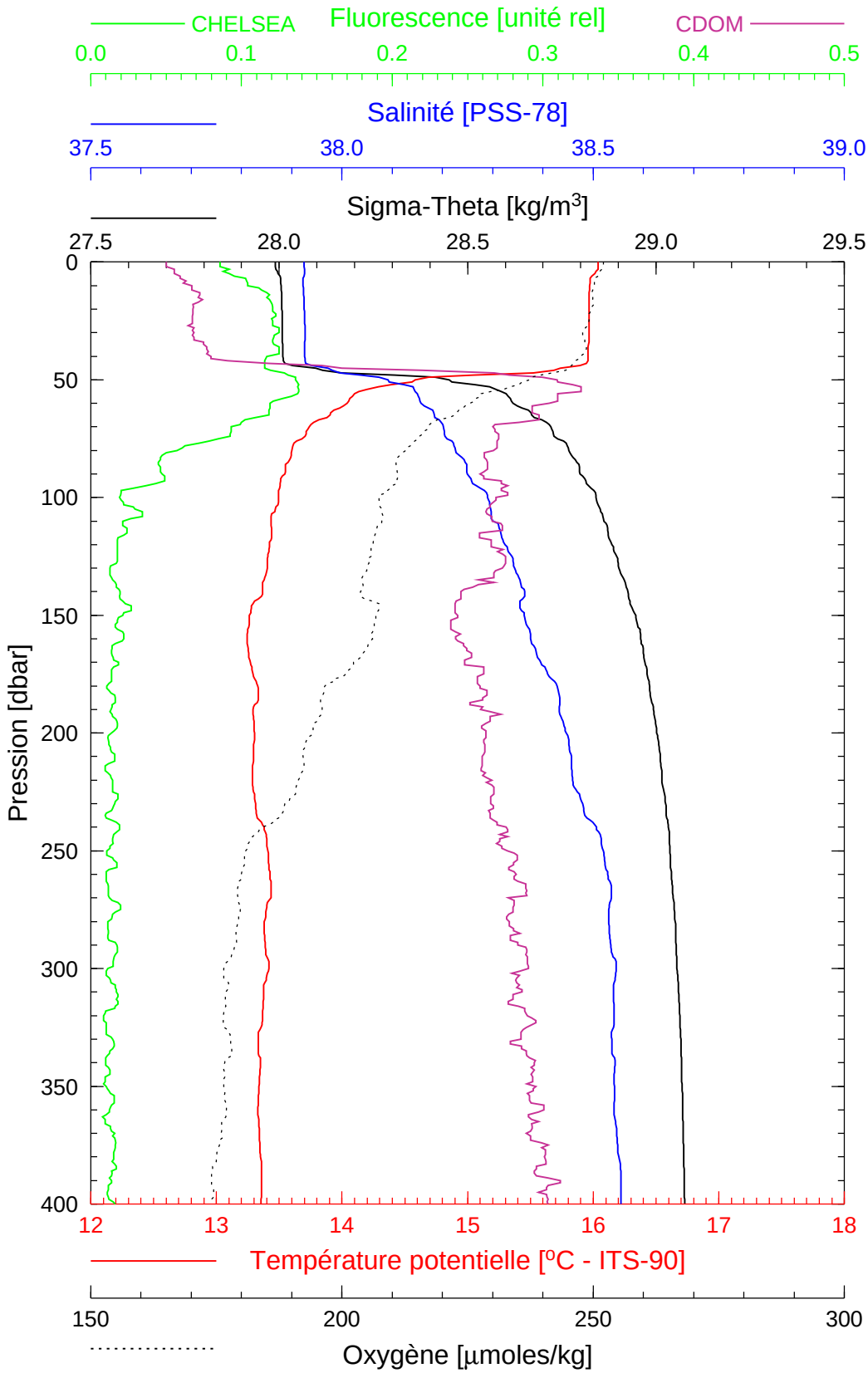
*bous003*



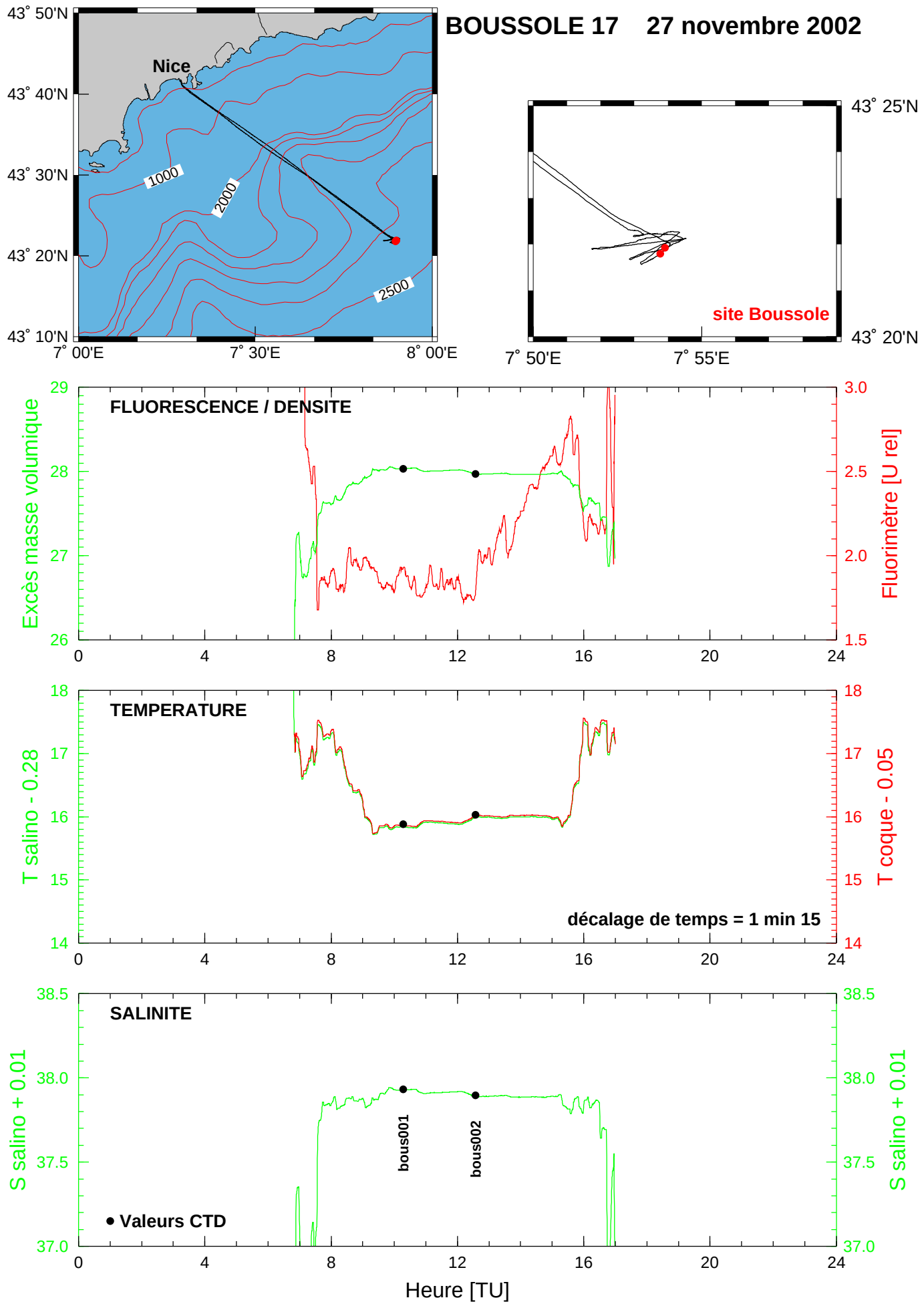
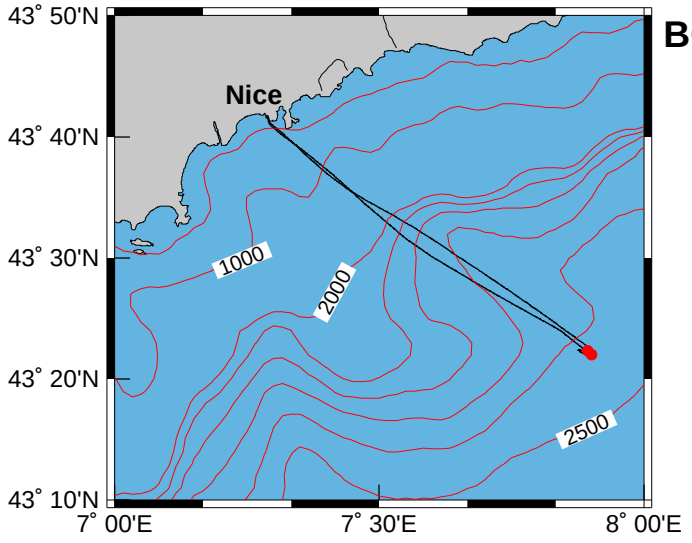
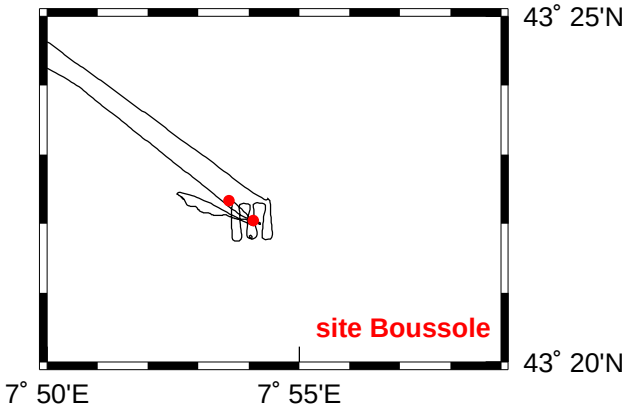
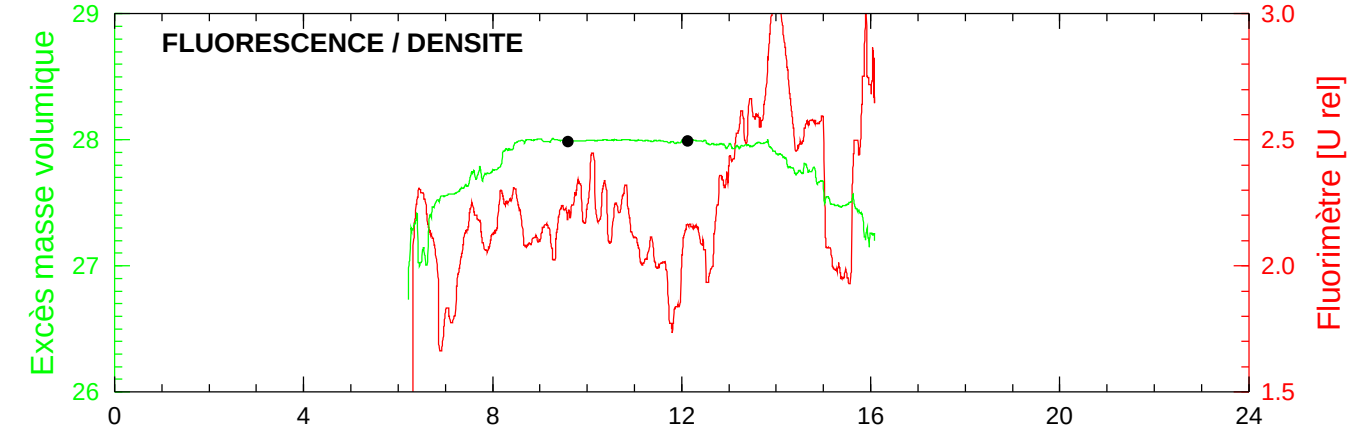
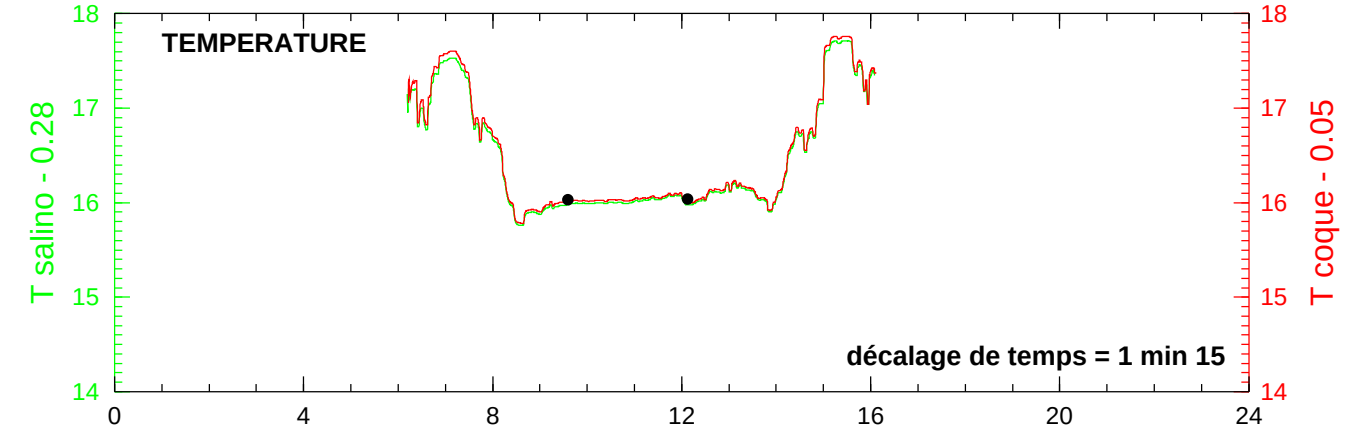
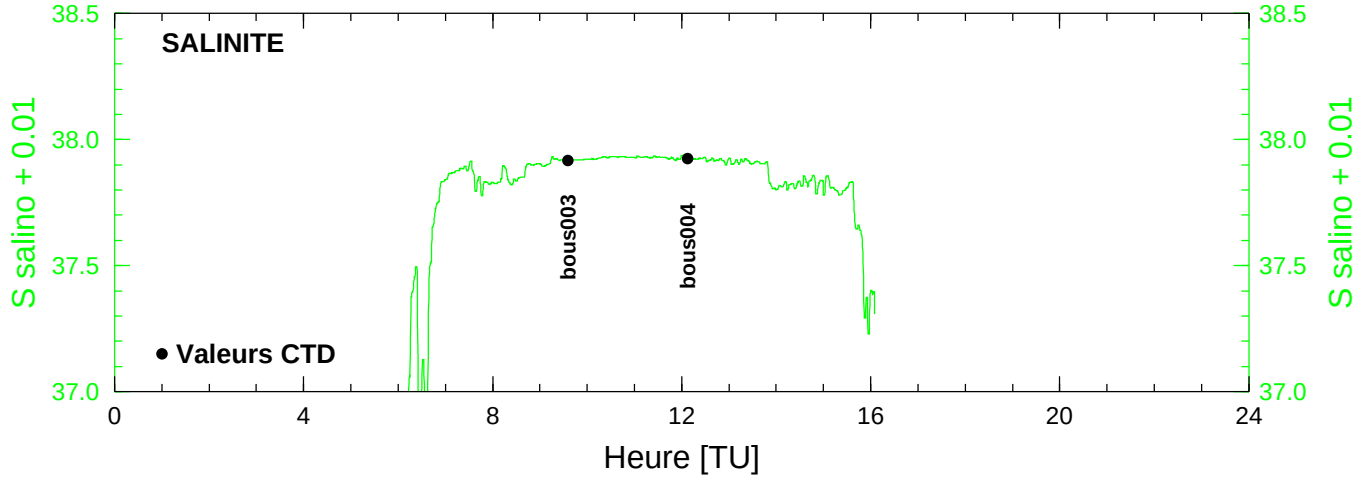

| | | | |
|---|---|---|---|
| *Date* | *28/11/2002* | *Latitude* | *43º22.044 N* |
| *Heure déb* | *09h 35min [TU]* | *Longitude* | *07º54.093 E* |

**Boussole 17** **28/11/2002** **BOUS021128_02**

*bous004*




| | | | |
|---|---|---|---|
| *Date* | *28/11/2002* | *Latitude* | *43º22.335 N* |
| *Heure déb* | *12h 07min [TU]* | *Longitude* | *07º53.603 E* |


BOUSSOLE 17 27 novembre 2002
Nice
1000
2000
2500
43° 50'N
43° 40'N
43° 30'N
43° 20'N
43° 10'N
7° 00'E
7° 30'E
8° 00'E
site Boussole
43° 25'N
43° 20'N
7° 50'E
7° 55'E
FLUORESCENCE / DENSITE
Excès masse volumique
Fluorimètre [U rel]
TEMPERATURE
T salino - 0.28
T coque - 0.05
décalage de temps = 1 min 15
SALINITE
S salino + 0.01
bous001
bous002
Valeurs CTD
Heure [TU]

# BOUSSOLE 17 28 novembre 2002