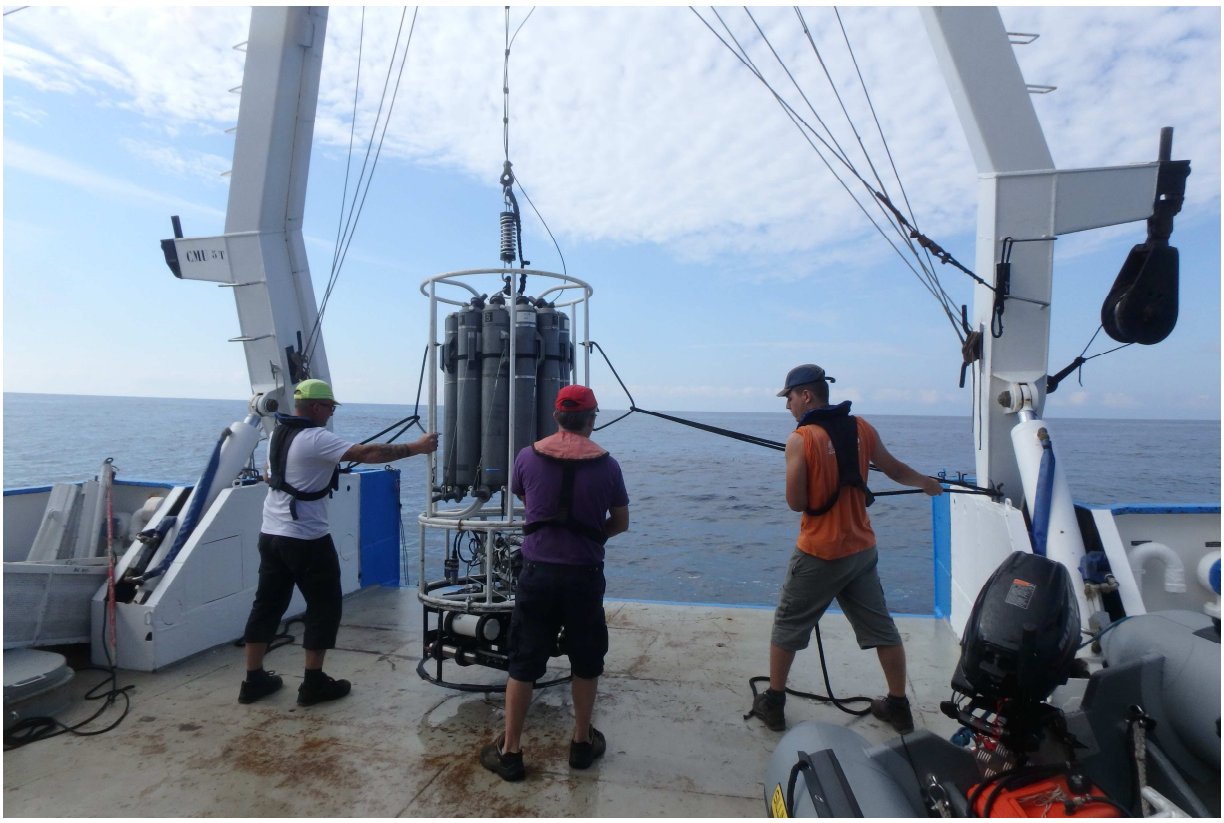
BOUSSOLE PROJECT

CTD Data catalogue for 2019

Cruise 204 to cruise 215

Institut de la Mer de Villefranche (IMEV), 06230 Villefranche sur mer, France



Deployment of the CTD and IOP package from the deck of the R/V *Téthys II* at the BOUSSOLE site.

ESA/ESRIN contract N° 4000119096/17/I-BG

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

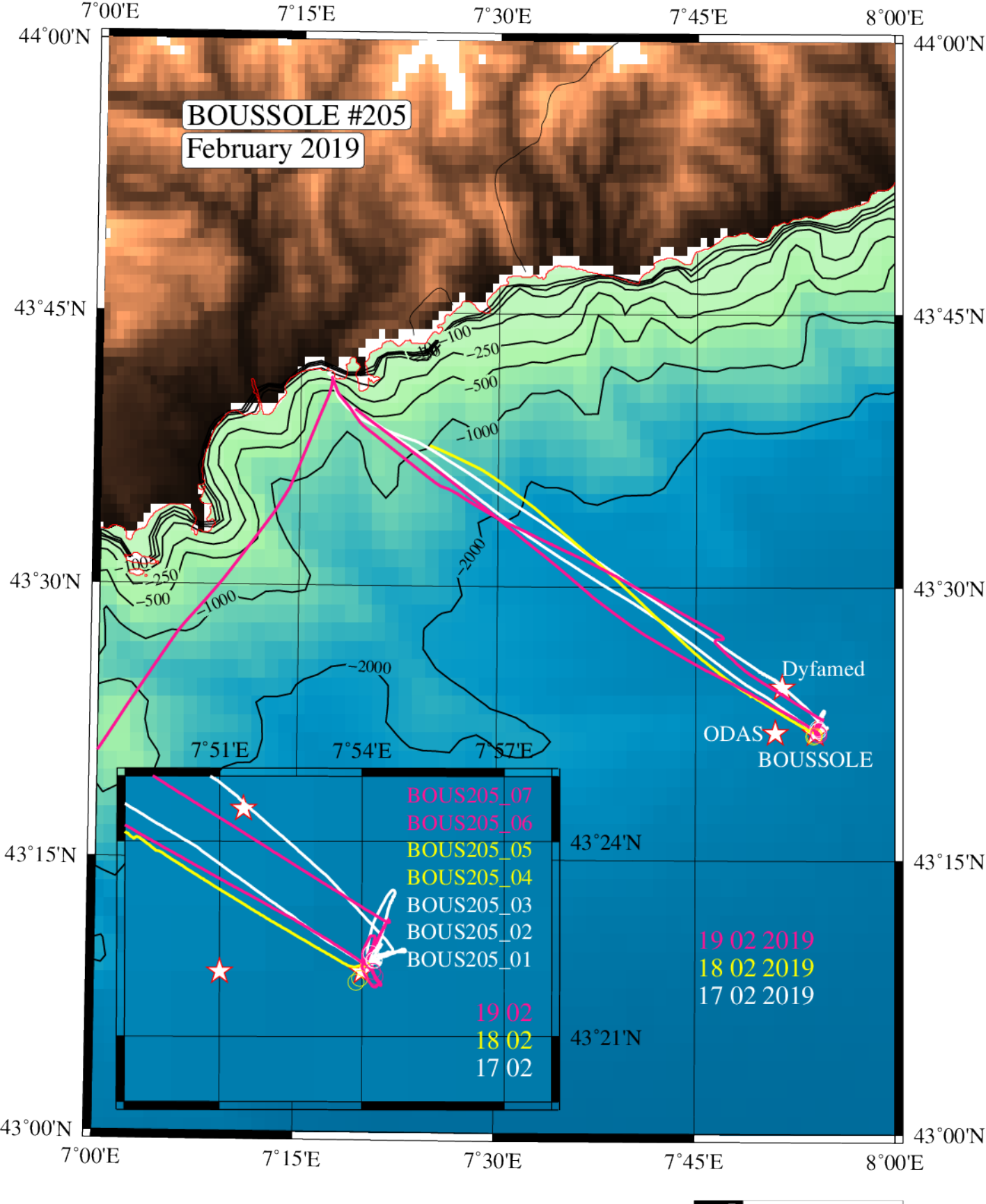
European Space Agency

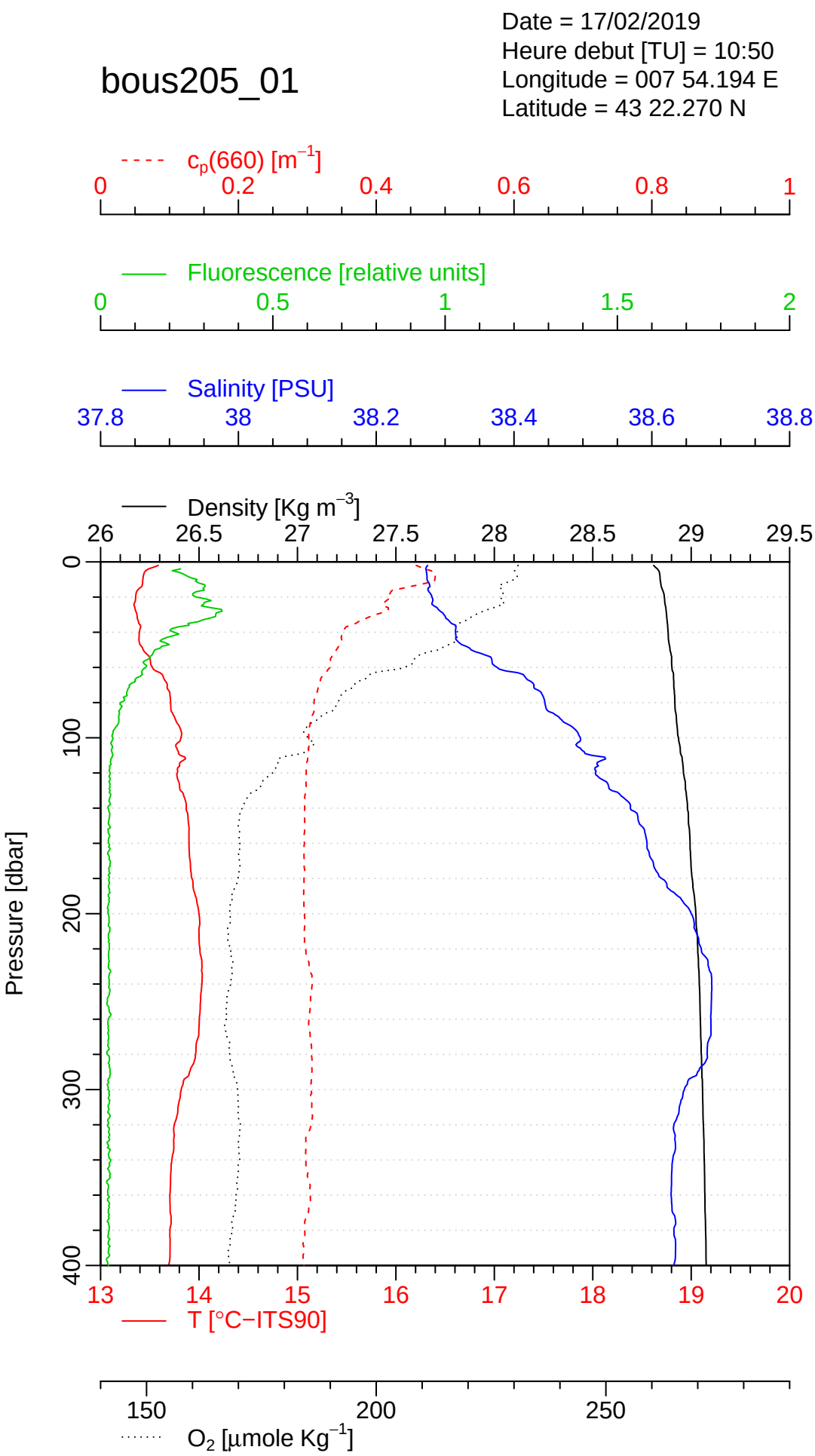
Centre National d'Etudes Spatiales, France

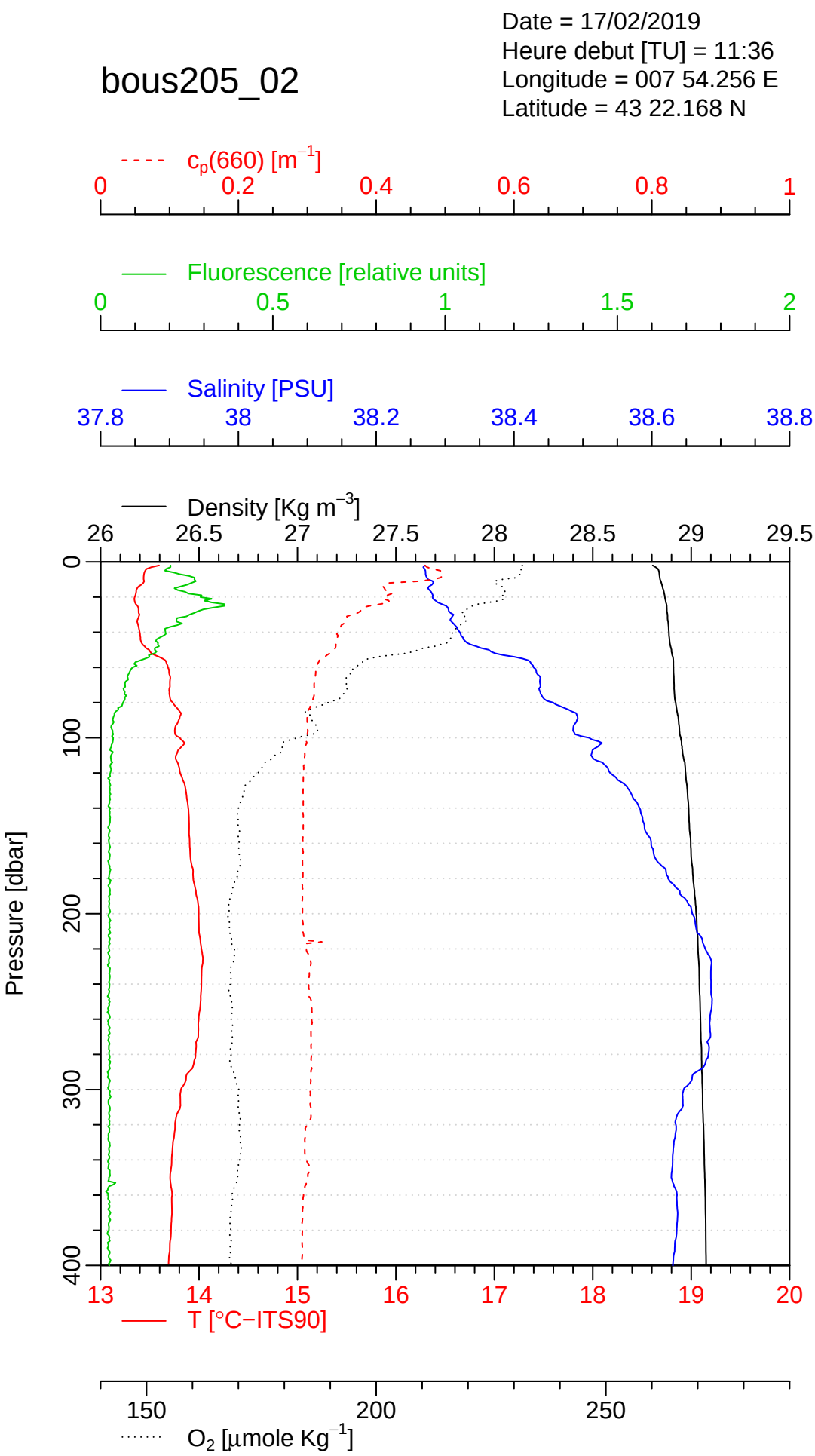
Centre National de la Recherche Scientifique, France

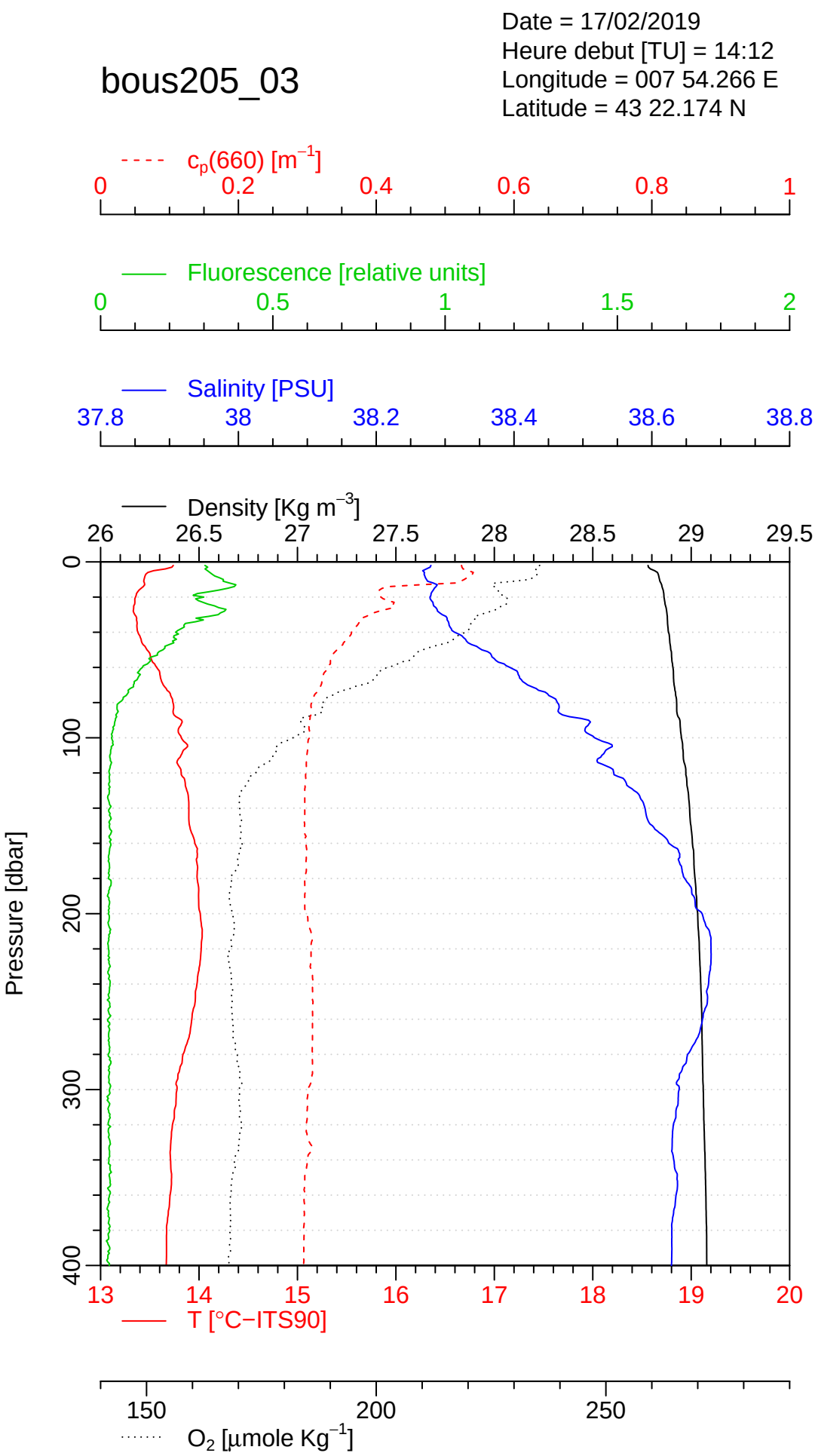
Sorbonne Université, France

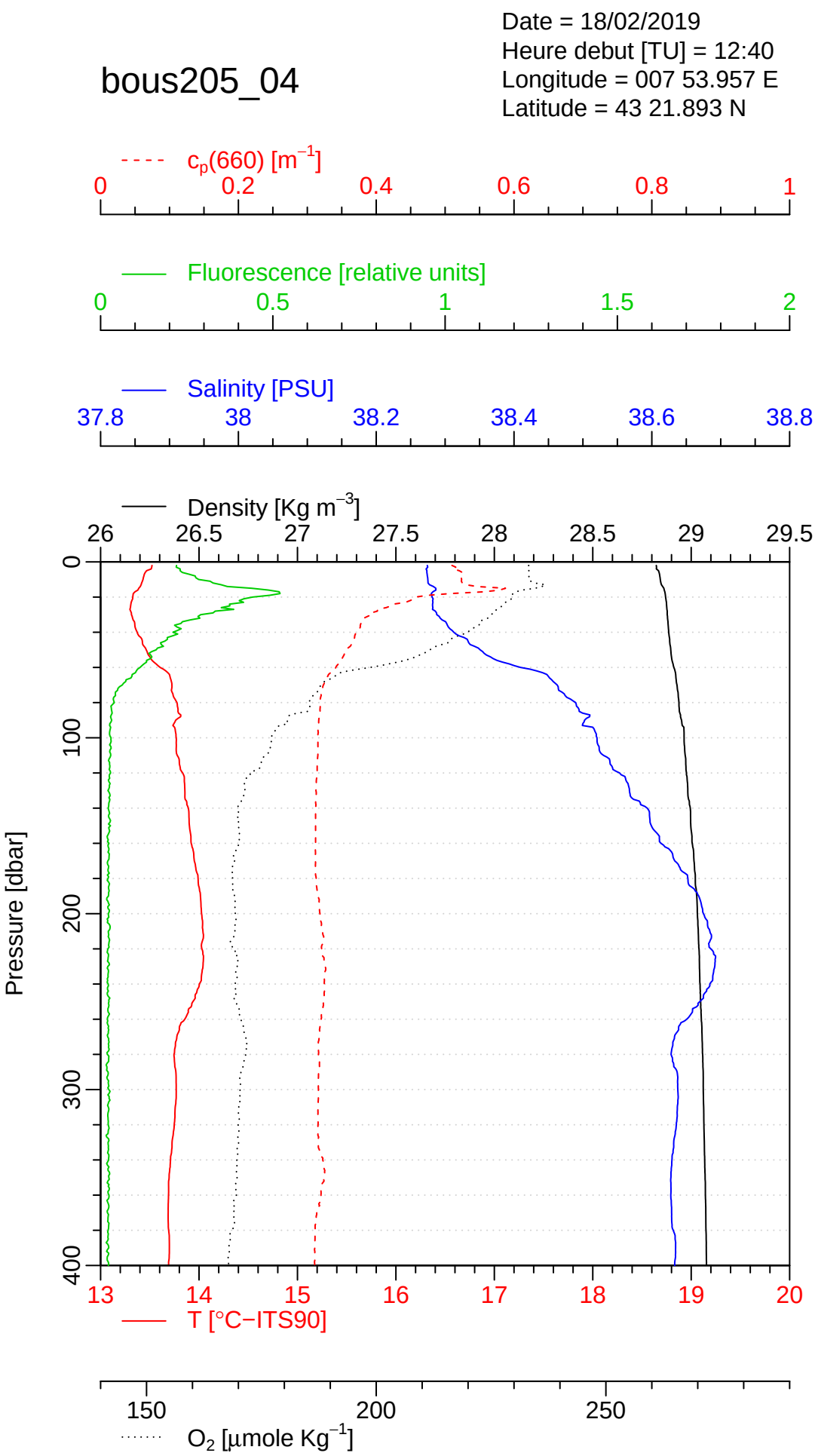
Institut de la Mer de Villefranche, France


BOUSSOLE #205
February 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS205_07
BOUS205_06
BOUS205_05
BOUS205_04
BOUS205_03
BOUS205_02
BOUS205_01
19 02 2019
18 02 2019
17 02 2019
19 02
18 02
17 02
GMT 2019 Apr 11 03:47:28


bous205_01
Date = 17/02/2019
Heure debut [TU] = 10:50
Longitude = 007 54.194 E
Latitude = 43 22.270 N
c_p(660) [m^-1]
0
0.2
0.4
0.6
0.8
1
Fluorescence [relative units]
0
0.5
1
1.5
2
Salinity [PSU]
37.8
38
38.2
38.4
38.6
38.8
Density [Kg m^-3]
26
26.5
27
27.5
28
28.5
29
29.5
Pressure [dbar]
0
100
200
300
400
13
14
15
16
17
18
19
20
T [°C−ITS90]
150
200
250
O2 [µmole Kg^-1]

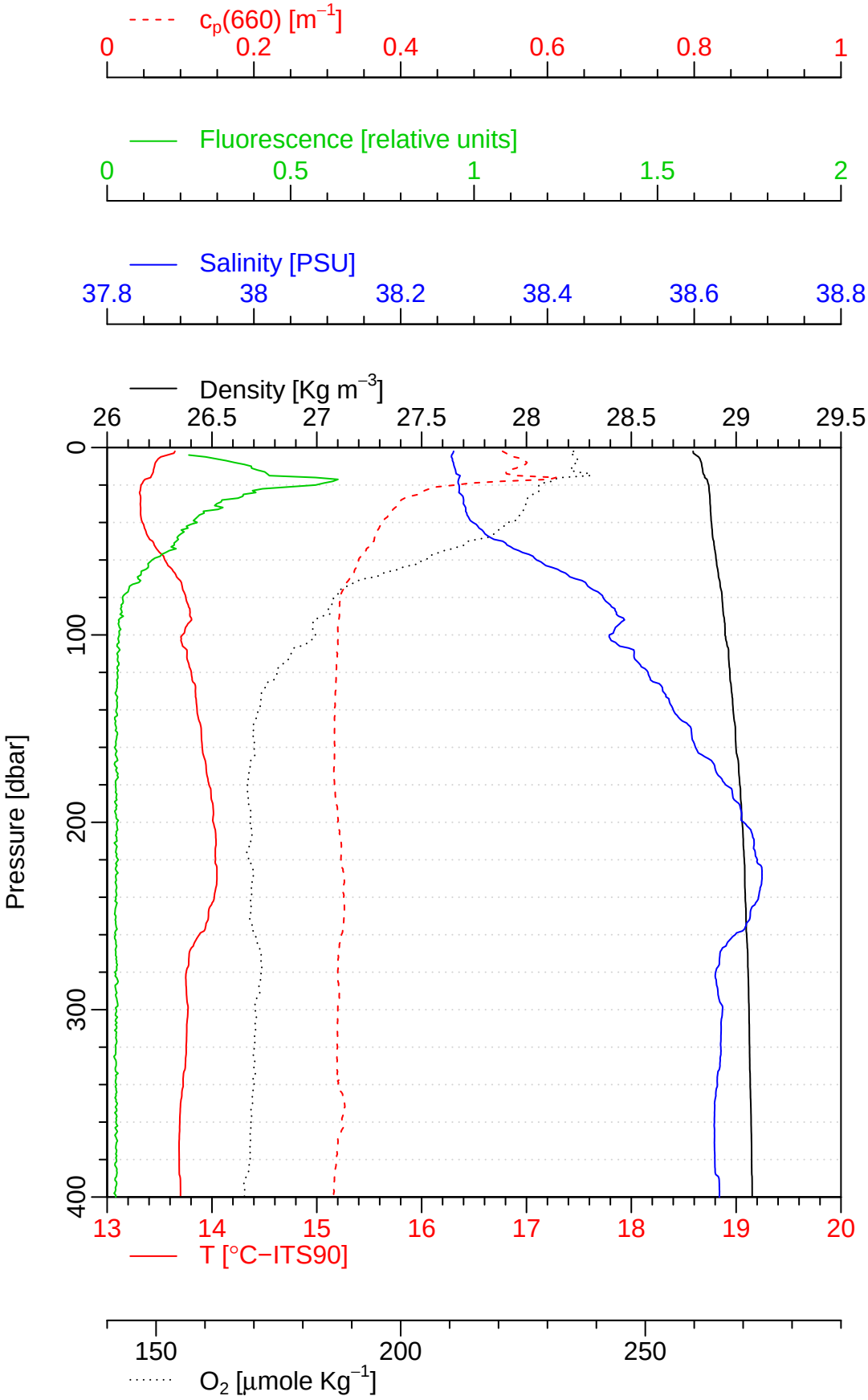

bous205_02
Date = 17/02/2019
Heure debut [TU] = 11:36
Longitude = 007 54.256 E
Latitude = 43 22.168 N
c_p(660) [m^-1]
0 0.2 0.4 0.6 0.8 1
Fluorescence [relative units]
0 0.5 1 1.5 2
Salinity [PSU]
37.8 38 38.2 38.4 38.6 38.8
Density [Kg m^-3]
26 26.5 27 27.5 28 28.5 29 29.5
Pressure [dbar]
0 100 200 300 400
13 14 15 16 17 18 19 20
T [°C−ITS90]
150 200 250
O2 [µmole Kg^-1]


bous205_03
Date = 17/02/2019
Heure debut [TU] = 14:12
Longitude = 007 54.266 E
Latitude = 43 22.174 N
c_p(660) [m^-1]
0 0.2 0.4 0.6 0.8 1
Fluorescence [relative units]
0 0.5 1 1.5 2
Salinity [PSU]
37.8 38 38.2 38.4 38.6 38.8
Density [Kg m^-3]
26 26.5 27 27.5 28 28.5 29 29.5
Pressure [dbar]
0 100 200 300 400
13 14 15 16 17 18 19 20
T [°C−ITS90]
150 200 250
O2 [µmole Kg^-1]


bous205_04
Date = 18/02/2019
Heure debut [TU] = 12:40
Longitude = 007 53.957 E
Latitude = 43 21.893 N
c_p(660) [m^-1]
0 0.2 0.4 0.6 0.8 1
Fluorescence [relative units]
0 0.5 1 1.5 2
Salinity [PSU]
37.8 38 38.2 38.4 38.6 38.8
Density [Kg m^-3]
26 26.5 27 27.5 28 28.5 29 29.5
Pressure [dbar]
0 100 200 300 400
13 14 15 16 17 18 19 20
T [°C−ITS90]
150 200 250
O2 [µmole Kg^-1]

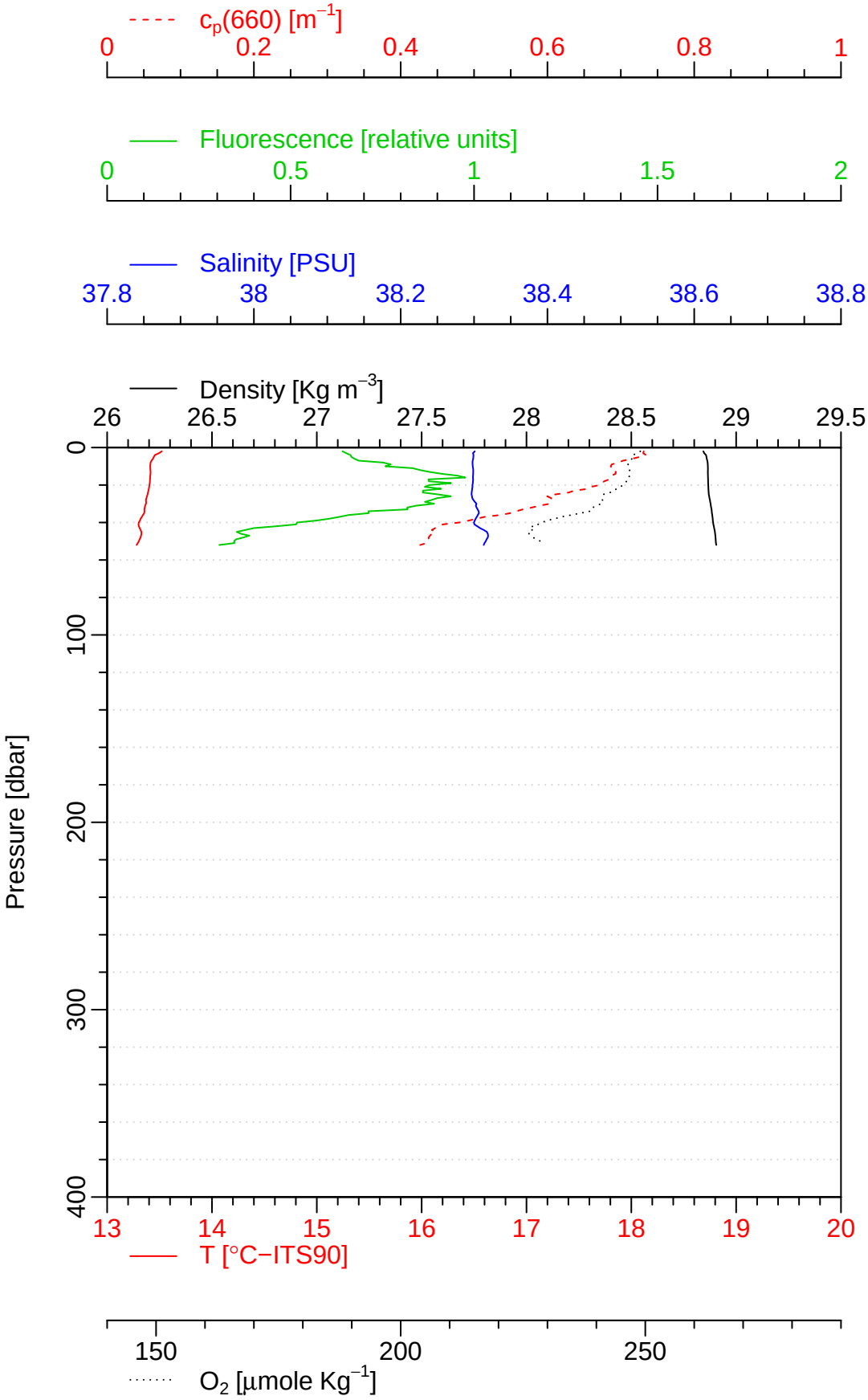
bous205_05

Date = 18/02/2019
Heure debut [TU] = 13:53
Longitude = 007 53.874 E
Latitude = 43 21.832 N



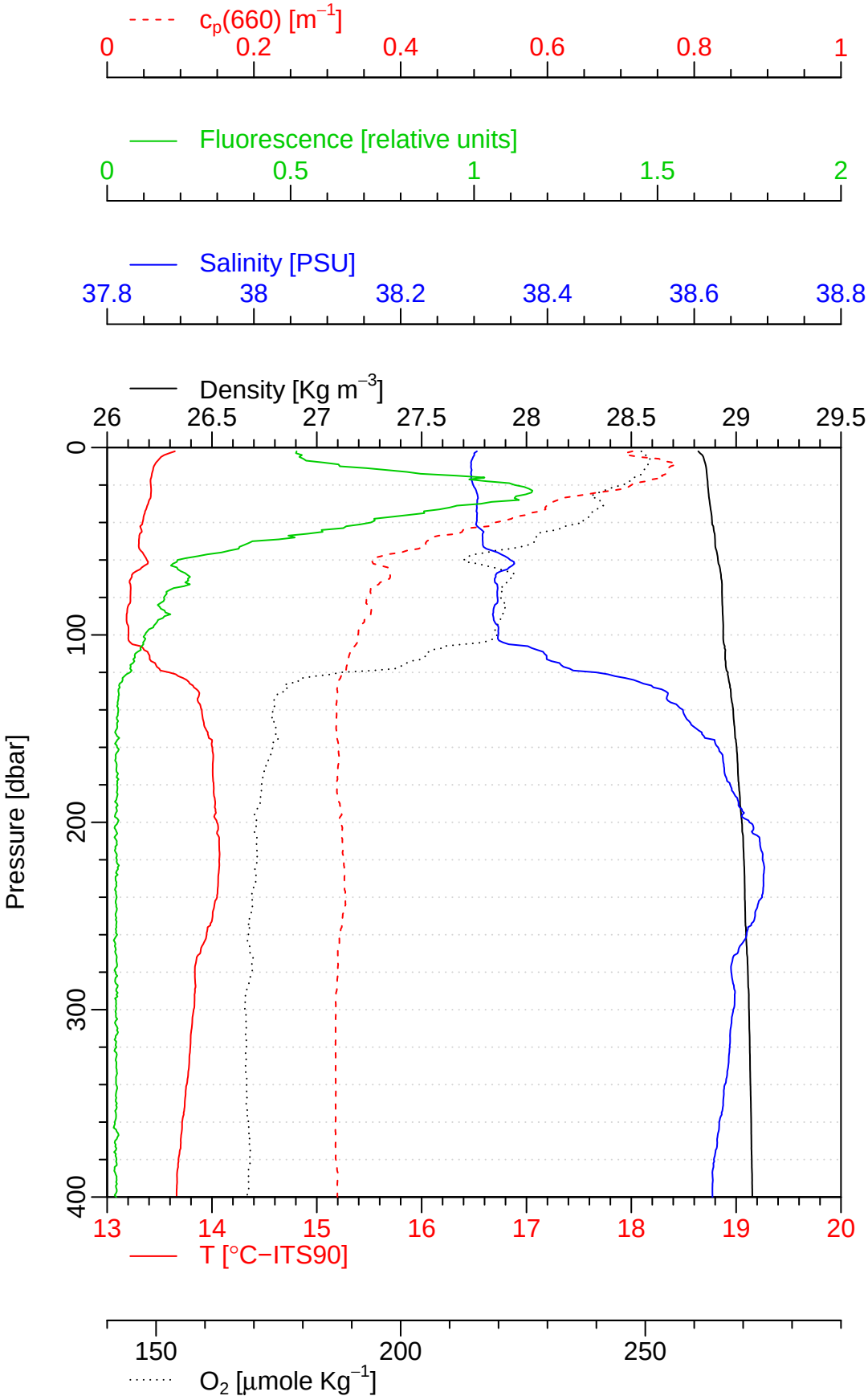
bous205_06

Date = 19/02/2019
Heure debut [TU] = 11:54
Longitude = 007 54.228 E
Latitude = 43 22.002 N



bous205_07

Date = 19/02/2019
Heure debut [TU] = 12:19
Longitude = 007 54.278 E
Latitude = 43 21.922 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B205\raw\BOUS 205_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 1313
   Calibrated on : 15-Feb-18
   G             : -3.93898414e+000
   H             : 4.71340485e-001
   I             : -1.98155782e-004
   J             : 3.77528476e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

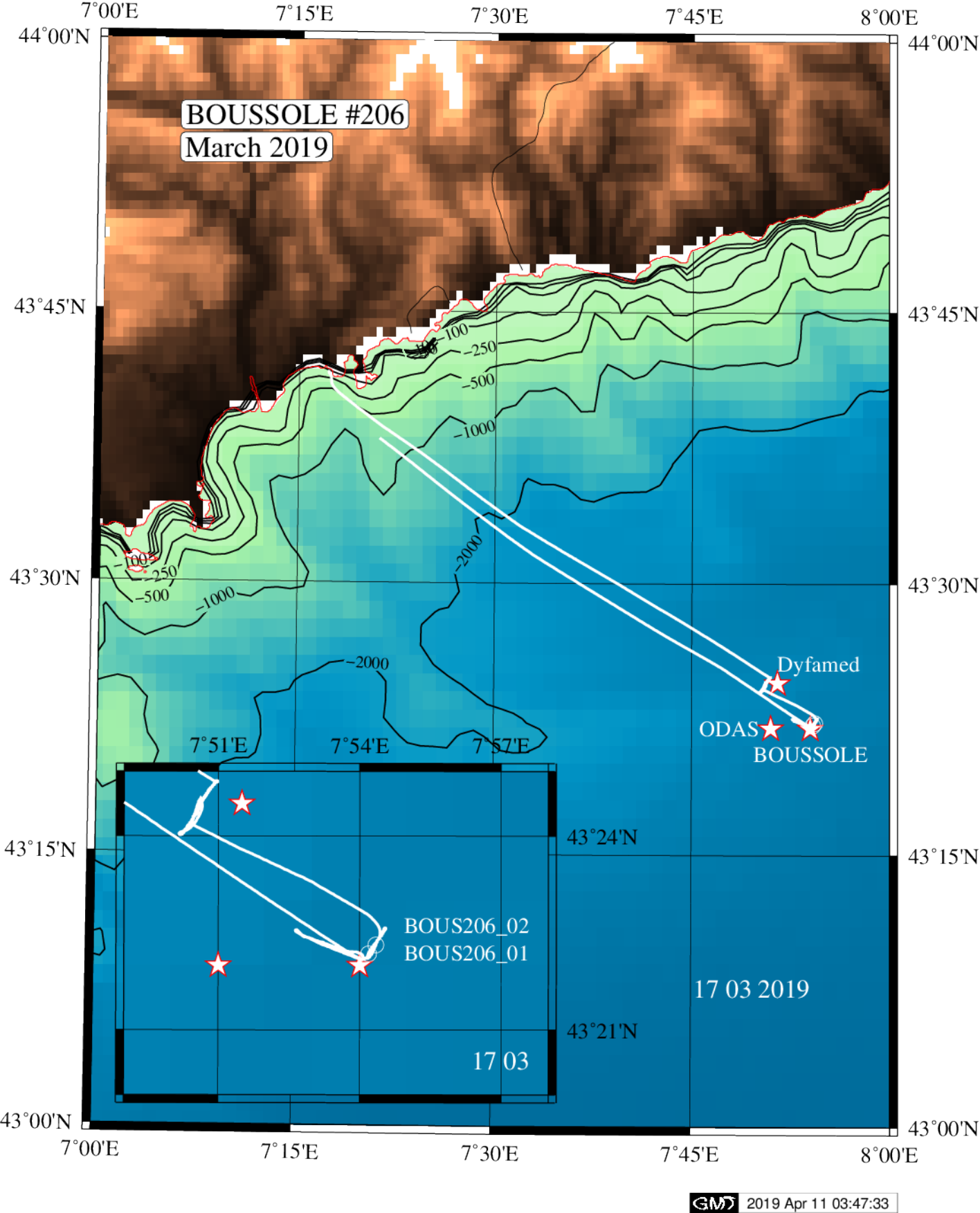
3) Frequency 2, Pressure, Digiquartz with TC

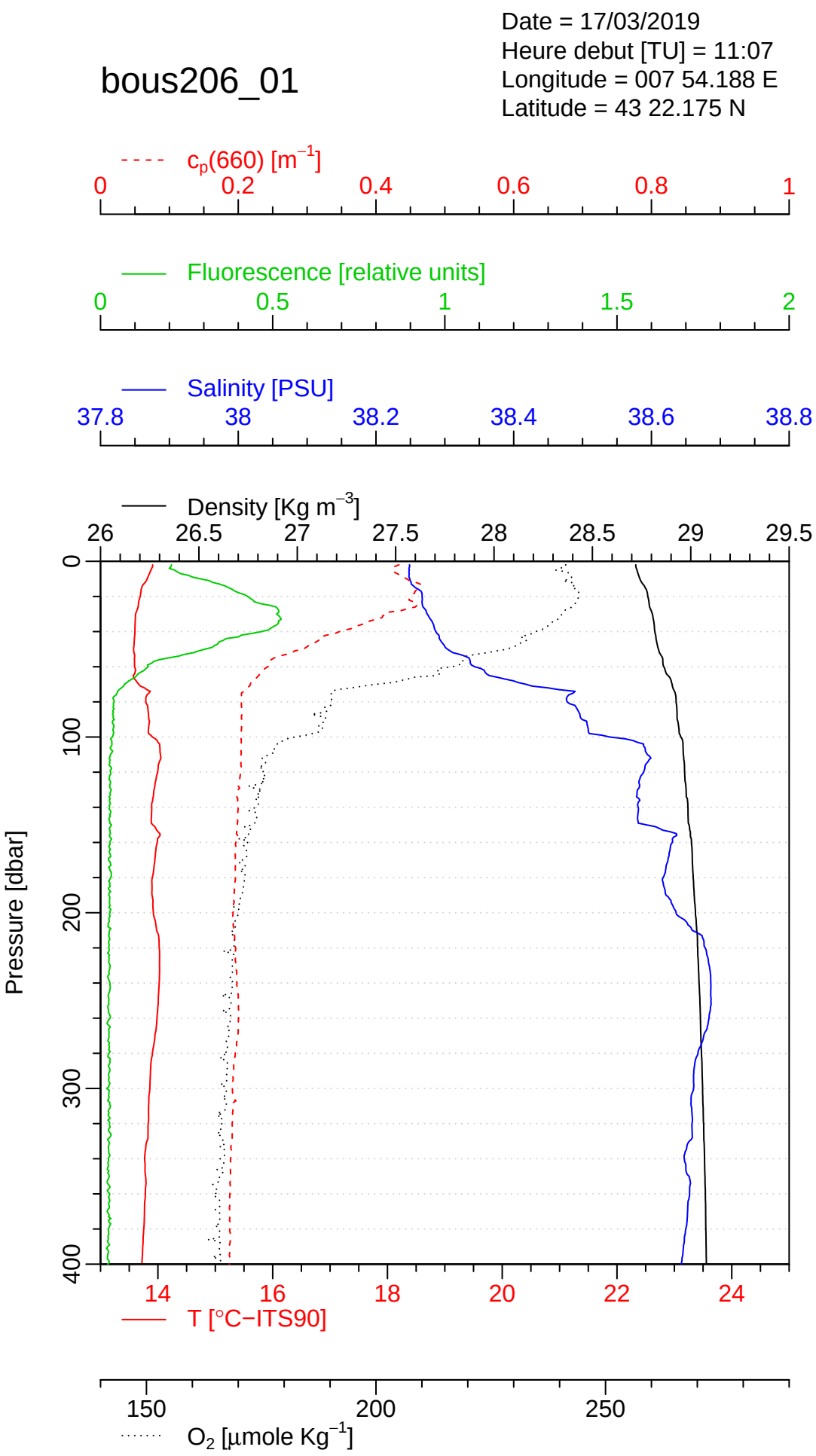
```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

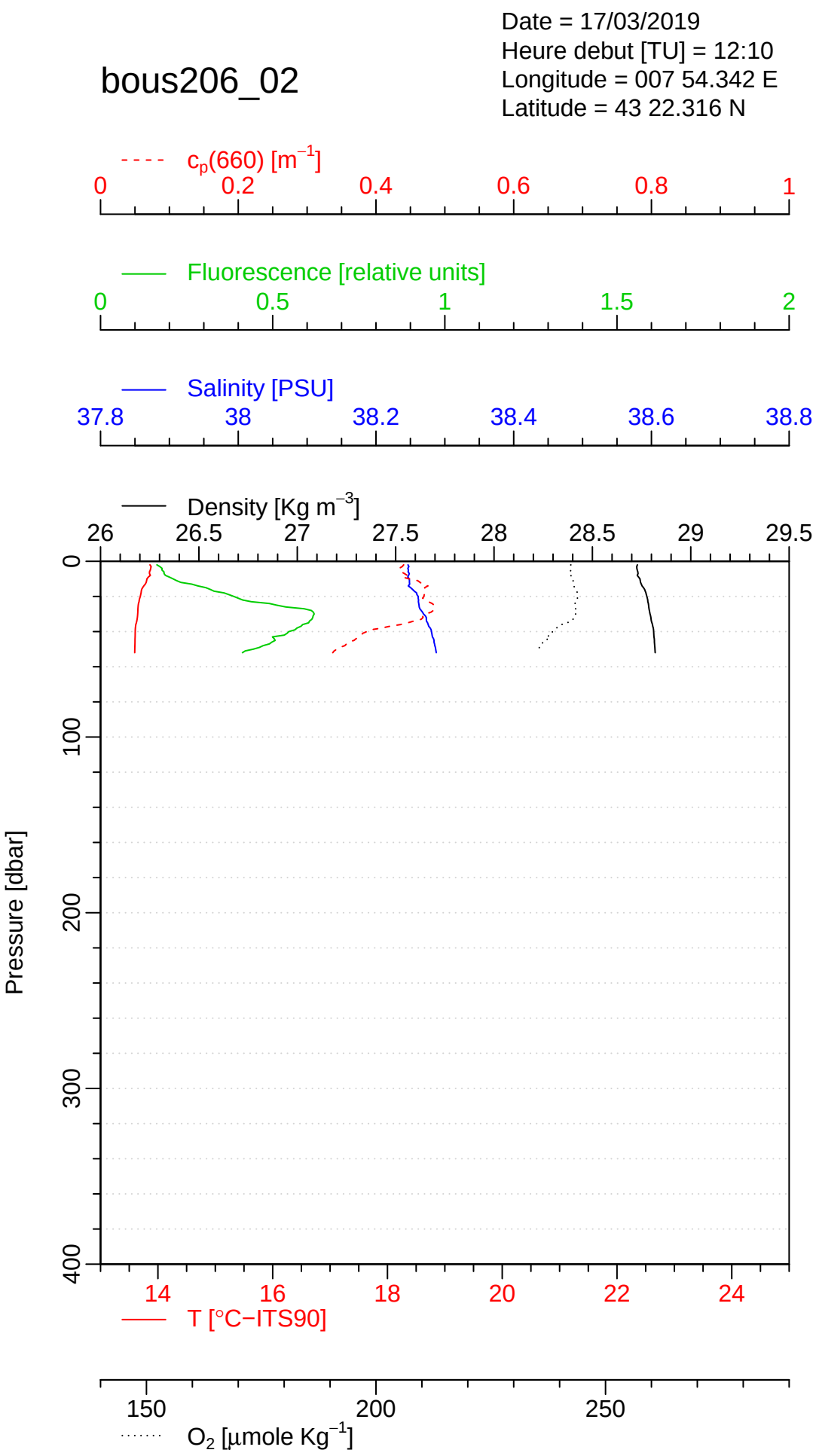
4) A/D voltage 0, Oxygen, SBE 43

```
   Serial number : 0378
   Calibrated on : 27-Dec-18
   Equation      : Sea-Bird
   Soc           : 3.62050e-001
   Offset        : -6.61600e-001
   A             : -3.75580e-003
   B             : 1.30860e-004
   C             : -1.88360e-006
   E             : 3.60000e-002
   Tau20         : 1.21000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

7) A/D voltage 3, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

8) A/D voltage 4, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

9) A/D voltage 5, Transmissometer, WET Labs C-Star

   Serial number : CST-887DR
   Calibrated on : 07112017
   M             : 21.3038
   B             : -0.1065
   Path length   : 0.250

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #206
March 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS206_02
BOUS206_01
17 03 2019
17 03
GMT 2019 Apr 11 03:47:33


bous206_01
Date = 17/03/2019
Heure debut [TU] = 11:07
Longitude = 007 54.188 E
Latitude = 43 22.175 N
c_p(660) [m^-1]
0
0.2
0.4
0.6
0.8
1
Fluorescence [relative units]
0
0.5
1
1.5
2
Salinity [PSU]
37.8
38
38.2
38.4
38.6
38.8
Density [Kg m^-3]
26
26.5
27
27.5
28
28.5
29
29.5
Pressure [dbar]
0
100
200
300
400
14
16
18
20
22
24
T [°C−ITS90]
150
200
250
O2 [µmole Kg^-1]


bous206_02
Date = 17/03/2019
Heure debut [TU] = 12:10
Longitude = 007 54.342 E
Latitude = 43 22.316 N
c_p(660) [m^-1]
0
0.2
0.4
0.6
0.8
1
Fluorescence [relative units]
0
0.5
1
1.5
2
Salinity [PSU]
37.8
38
38.2
38.4
38.6
38.8
Density [Kg m^-3]
26
26.5
27
27.5
28
28.5
29
29.5
Pressure [dbar]
0
100
200
300
400
14
16
18
20
22
24
T [°C−ITS90]
150
200
250
O2 [µmole Kg^-1]

Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B206\raw\BOUS 206_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 1313
   Calibrated on : 15-Feb-18
   G             : -3.93898414e+000
   H             : 4.71340485e-001
   I             : -1.98155782e-004
   J             : 3.77528476e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

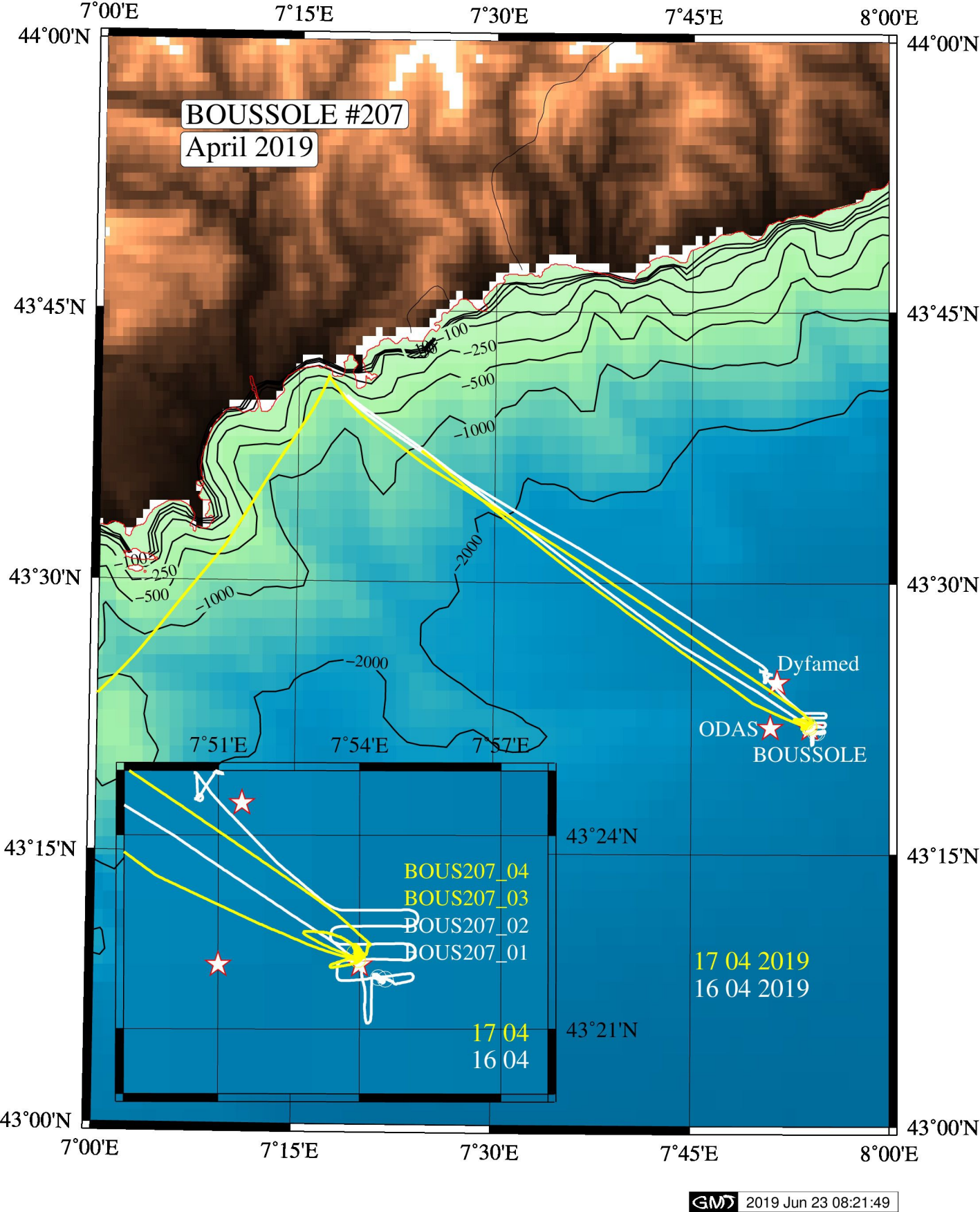
3) Frequency 2, Pressure, Digiquartz with TC

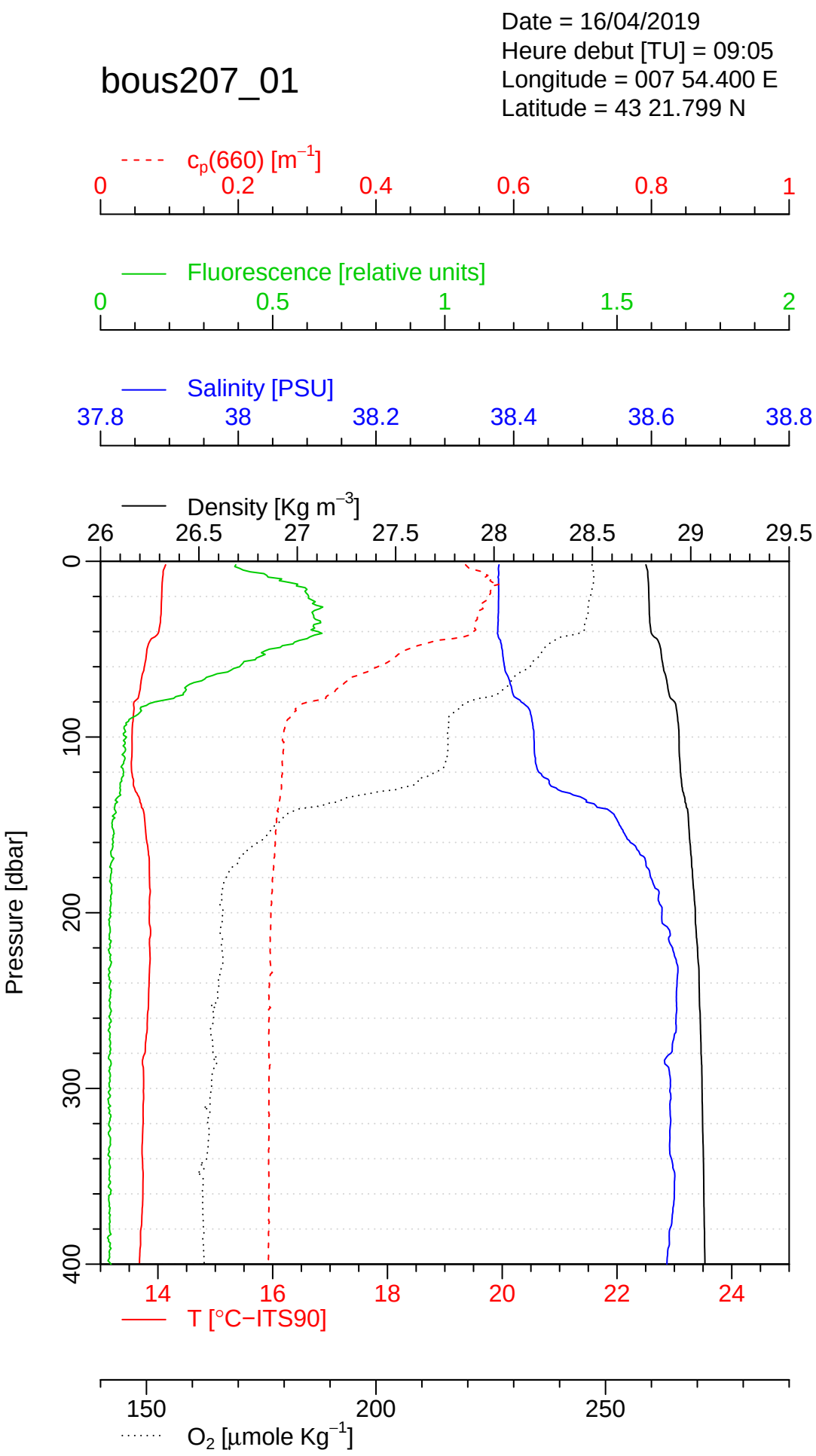
```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

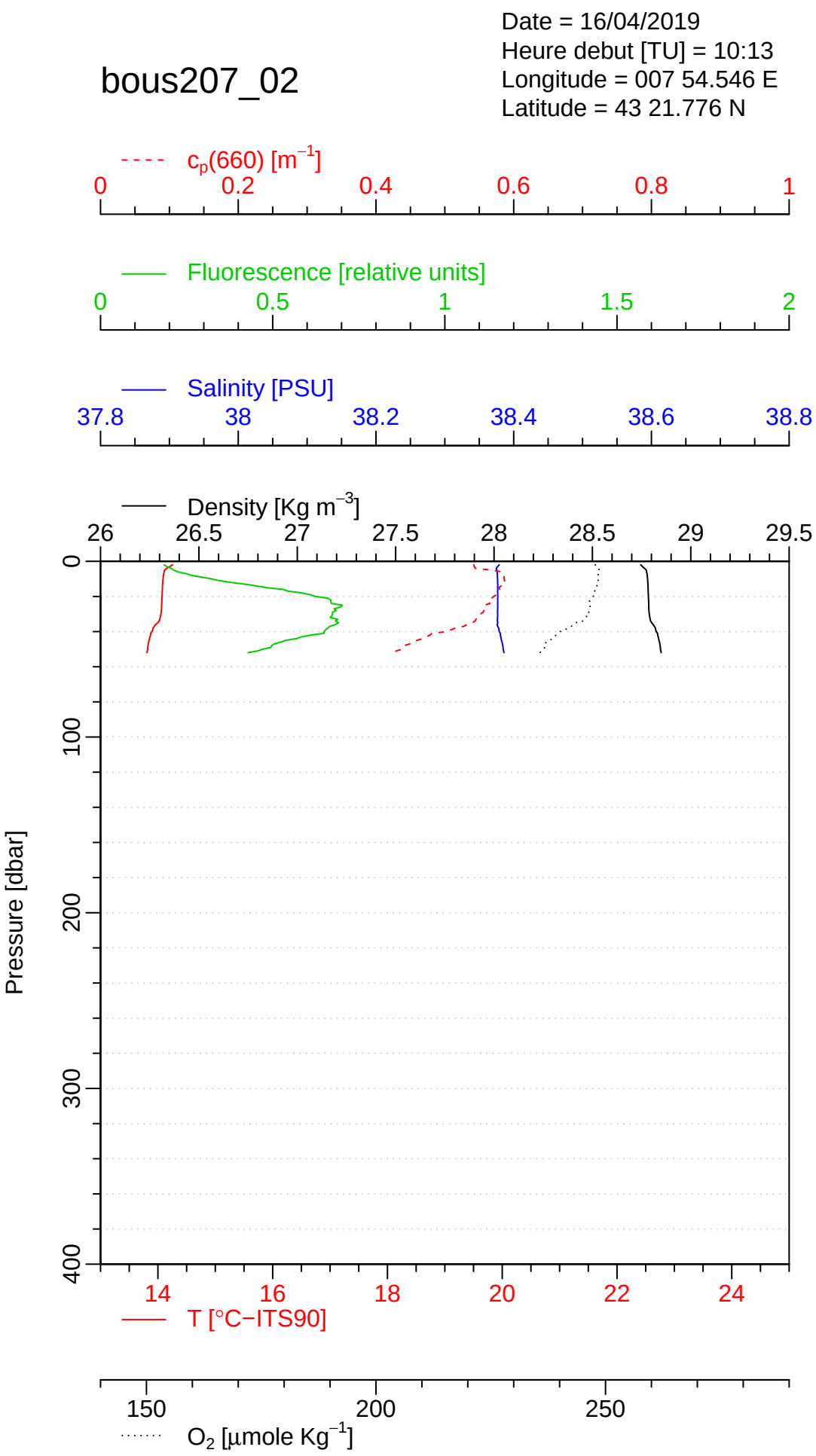
4) A/D voltage 0, Oxygen, SBE 43

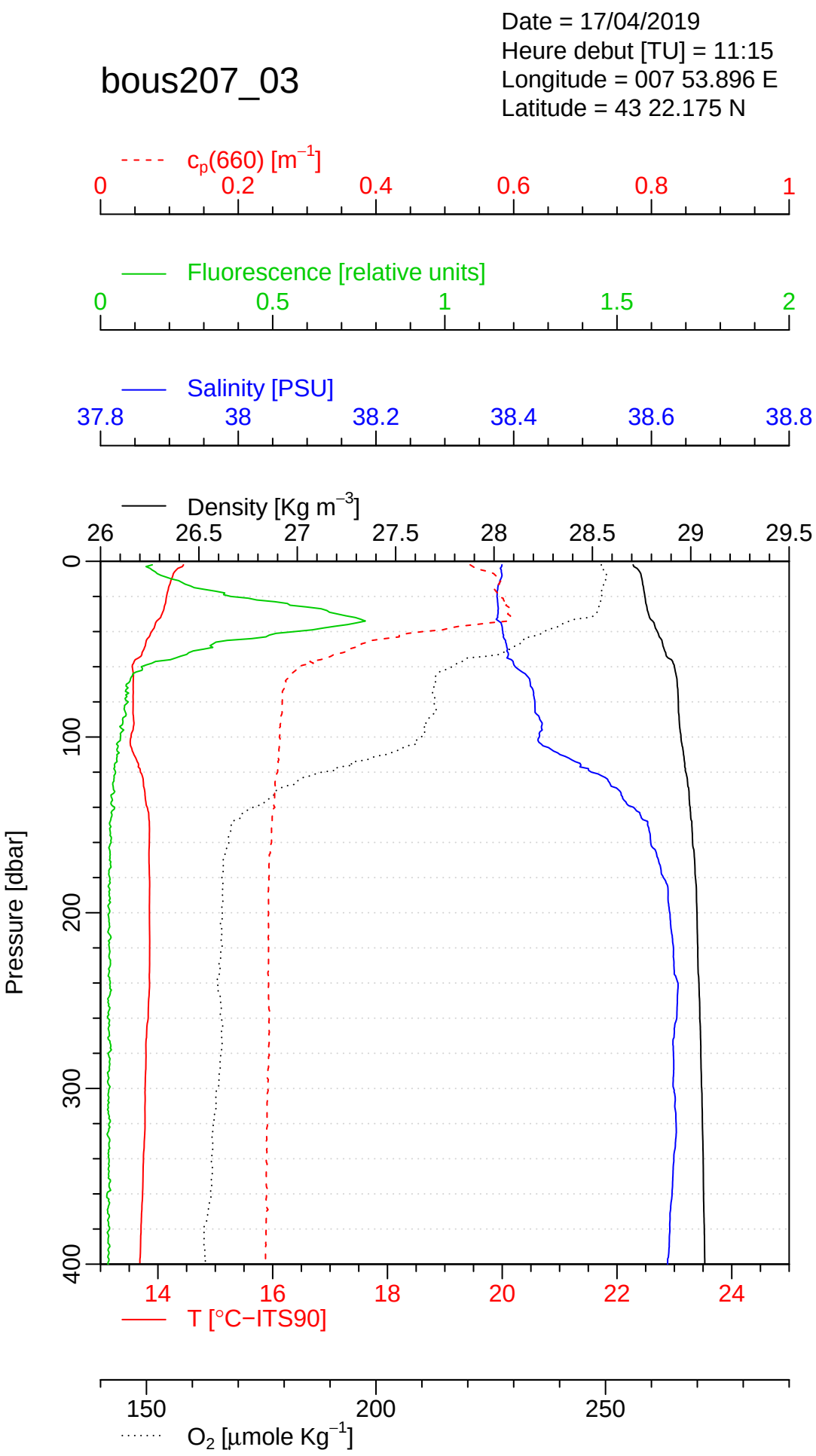
```
   Serial number : 0378
   Calibrated on : 27-Dec-18
   Equation      : Sea-Bird
   Soc           : 3.62050e-001
   Offset        : -6.61600e-001
   A             : -3.75580e-003
   B             : 1.30860e-004
   C             : -1.88360e-006
   E             : 3.60000e-002
   Tau20         : 1.21000e+000
```

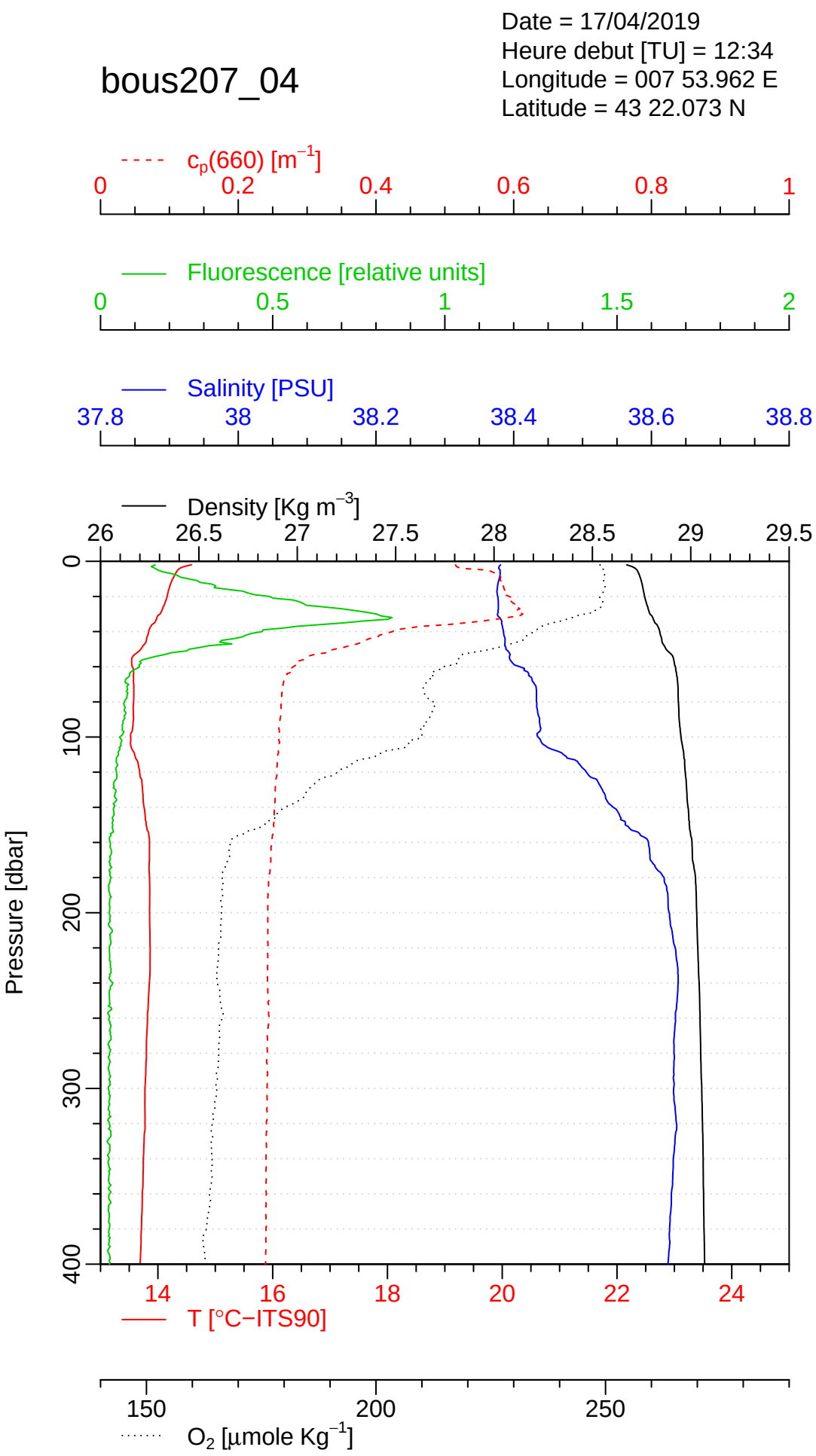
```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

7) A/D voltage 3, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

8) A/D voltage 4, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

9) A/D voltage 5, Transmissometer, WET Labs C-Star

   Serial number : CST-887DR
   Calibrated on : 07112017
   M             : 21.3038
   B             : -0.1065
   Path length   : 0.250

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #207
April 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS207_04
BOUS207_03
BOUS207_02
BOUS207_01
17 04 2019
16 04 2019
17 04
16 04
GMT 2019 Jun 23 08:21:49


bous207_01
Date = 16/04/2019
Heure debut [TU] = 09:05
Longitude = 007 54.400 E
Latitude = 43 21.799 N
c_p(660) [m^-1]
0 0.2 0.4 0.6 0.8 1
Fluorescence [relative units]
0 0.5 1 1.5 2
Salinity [PSU]
37.8 38 38.2 38.4 38.6 38.8
Density [Kg m^-3]
26 26.5 27 27.5 28 28.5 29 29.5
Pressure [dbar]
0 100 200 300 400
14 16 18 20 22 24
T [°C−ITS90]
150 200 250
O2 [µmole Kg^-1]


bous207_02
Date = 16/04/2019
Heure debut [TU] = 10:13
Longitude = 007 54.546 E
Latitude = 43 21.776 N
c_p(660) [m^-1]
0
0.2
0.4
0.6
0.8
1
Fluorescence [relative units]
0
0.5
1
1.5
2
Salinity [PSU]
37.8
38
38.2
38.4
38.6
38.8
Density [Kg m^-3]
26
26.5
27
27.5
28
28.5
29
29.5
Pressure [dbar]
0
100
200
300
400
14
16
18
20
22
24
T [°C−ITS90]
150
200
250
O2 [µmole Kg^-1]


bous207_03
Date = 17/04/2019
Heure debut [TU] = 11:15
Longitude = 007 53.896 E
Latitude = 43 22.175 N
c_p(660) [m^-1]
0
0.2
0.4
0.6
0.8
1
Fluorescence [relative units]
0
0.5
1
1.5
2
Salinity [PSU]
37.8
38
38.2
38.4
38.6
38.8
Density [Kg m^-3]
26
26.5
27
27.5
28
28.5
29
29.5
Pressure [dbar]
0
100
200
300
400
14
16
18
20
22
24
T [°C−ITS90]
150
200
250
O2 [µmole Kg^-1]


bous207_04
Date = 17/04/2019
Heure debut [TU] = 12:34
Longitude = 007 53.962 E
Latitude = 43 22.073 N
c_p(660) [m^-1]
0 0.2 0.4 0.6 0.8 1
Fluorescence [relative units]
0 0.5 1 1.5 2
Salinity [PSU]
37.8 38 38.2 38.4 38.6 38.8
Density [Kg m^-3]
26 26.5 27 27.5 28 28.5 29 29.5
Pressure [dbar]
0 100 200 300 400
14 16 18 20 22 24
T [°C−ITS90]
150 200 250
O2 [µmole Kg^-1]

Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B207\raw\BOUS 207_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 1313
   Calibrated on : 15-Feb-18
   G             : -3.93898414e+000
   H             : 4.71340485e-001
   I             : -1.98155782e-004
   J             : 3.77528476e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

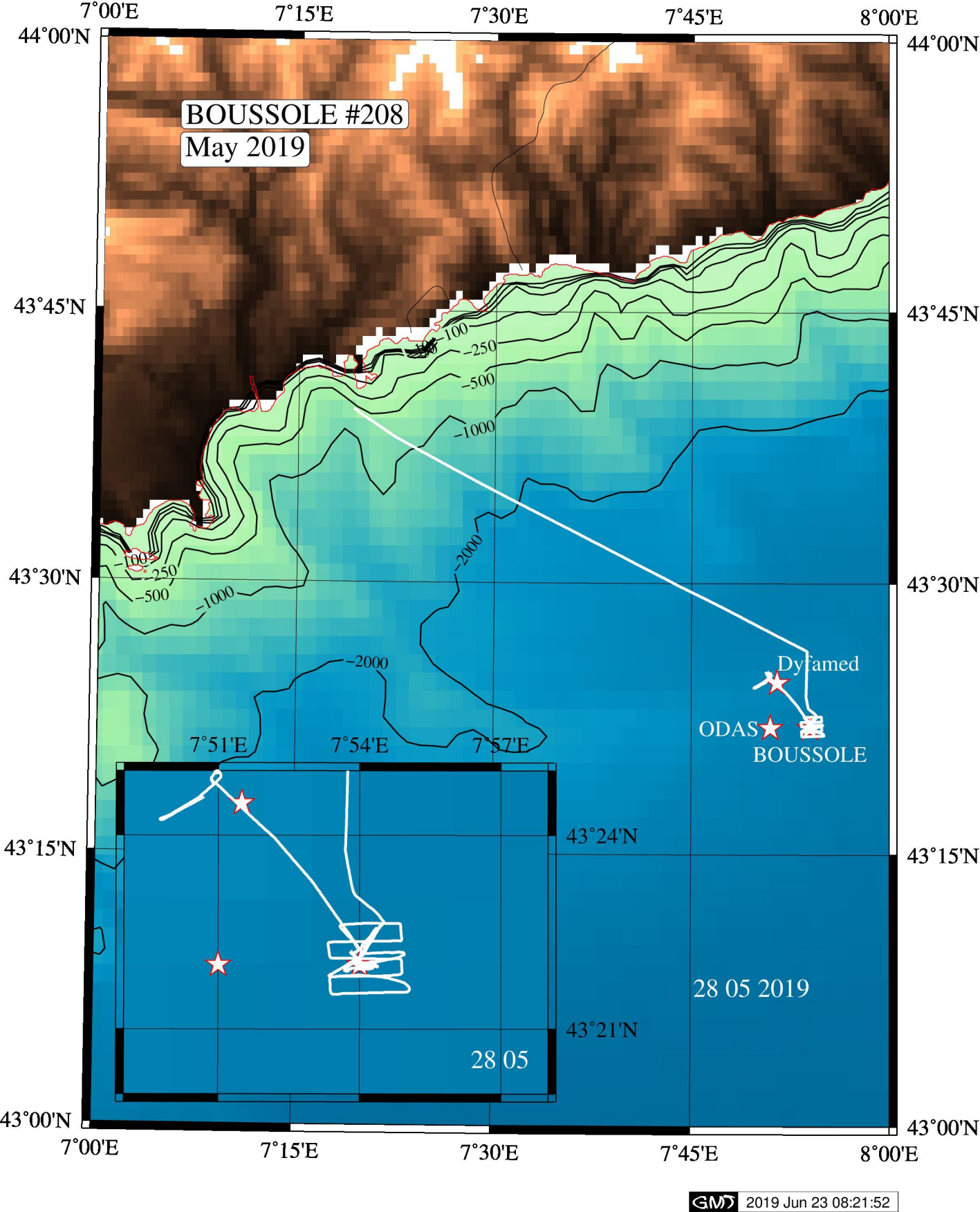
3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) A/D voltage 0, Oxygen, SBE 43

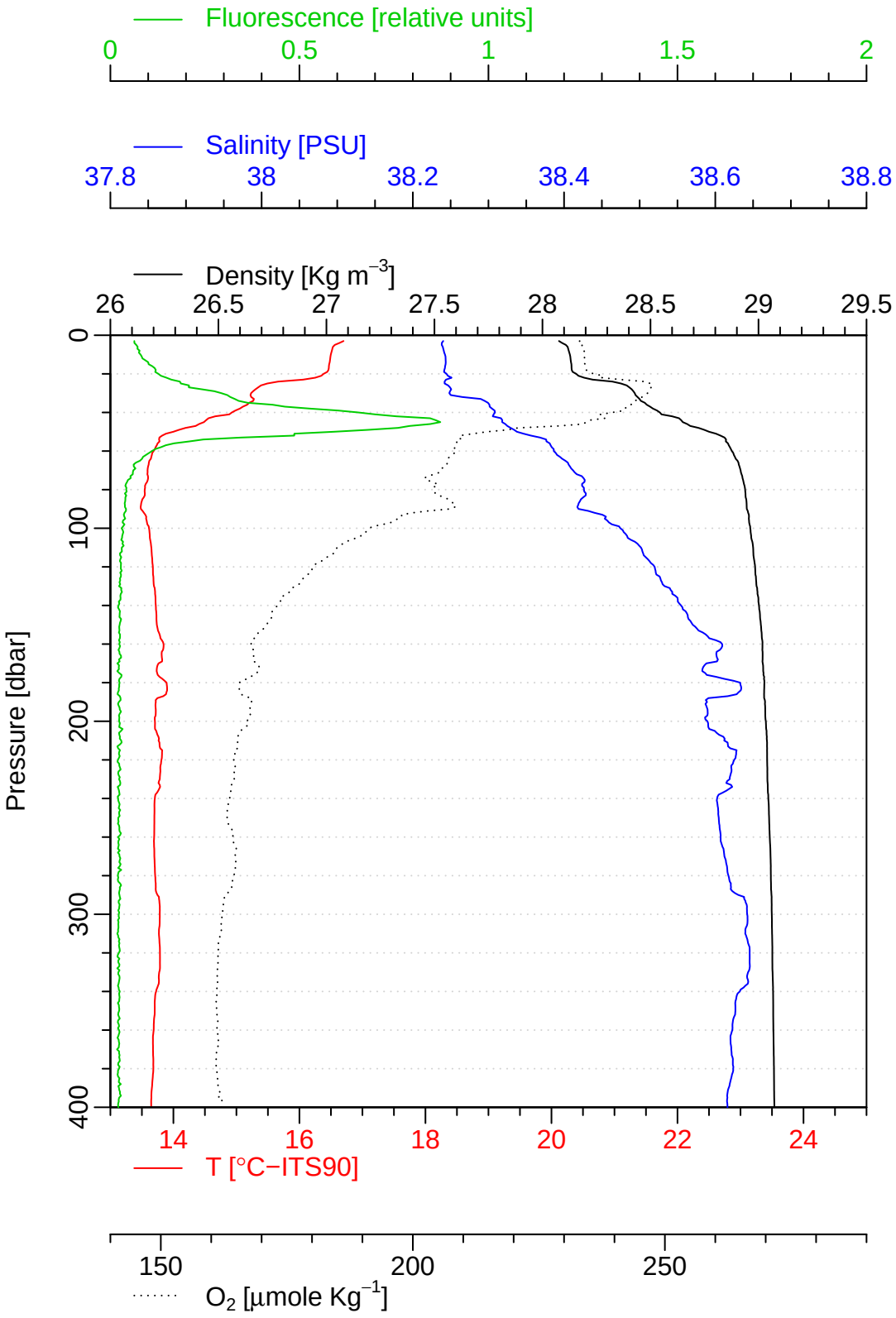
```
   Serial number : 0378
   Calibrated on : 27-Dec-18
   Equation      : Sea-Bird
   Soc           : 3.62050e-001
   Offset        : -6.61600e-001
   A             : -3.75580e-003
   B             : 1.30860e-004
   C             : -1.88360e-006
   E             : 3.60000e-002
   Tau20         : 1.21000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

7) A/D voltage 3, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

8) A/D voltage 4, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

9) A/D voltage 5, Transmissometer, WET Labs C-Star

   Serial number : CST-887DR
   Calibrated on : 07112017
   M             : 21.3038
   B             : -0.1065
   Path length   : 0.250

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #208
May 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
28 05
28 05 2019
GMT 2019 Jun 23 08:21:52

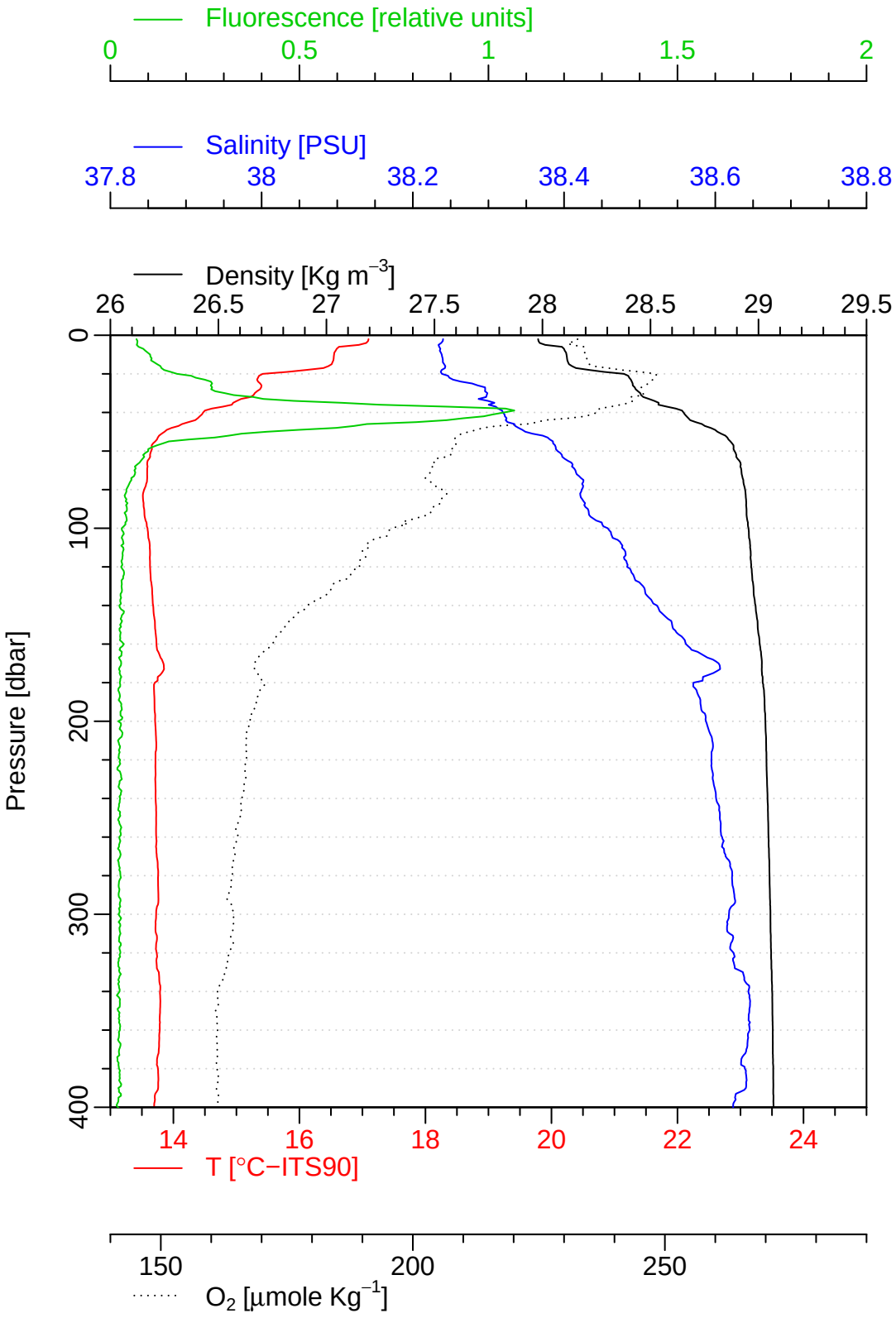
bous208_01

Date = 28/05/2019
Heure debut [TU] = 09:20
Longitude = 007 53.918 E
Latitude = 43 22.062 N



bous208_02

Date = 28/05/2019
Heure debut [TU] = 12:03
Longitude = 007 54.092 E
Latitude = 43 22.177 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B208\raw\BOUS 208_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 1313
   Calibrated on : 15-Feb-18
   G             : -3.93898414e+000
   H             : 4.71340485e-001
   I             : -1.98155782e-004
   J             : 3.77528476e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

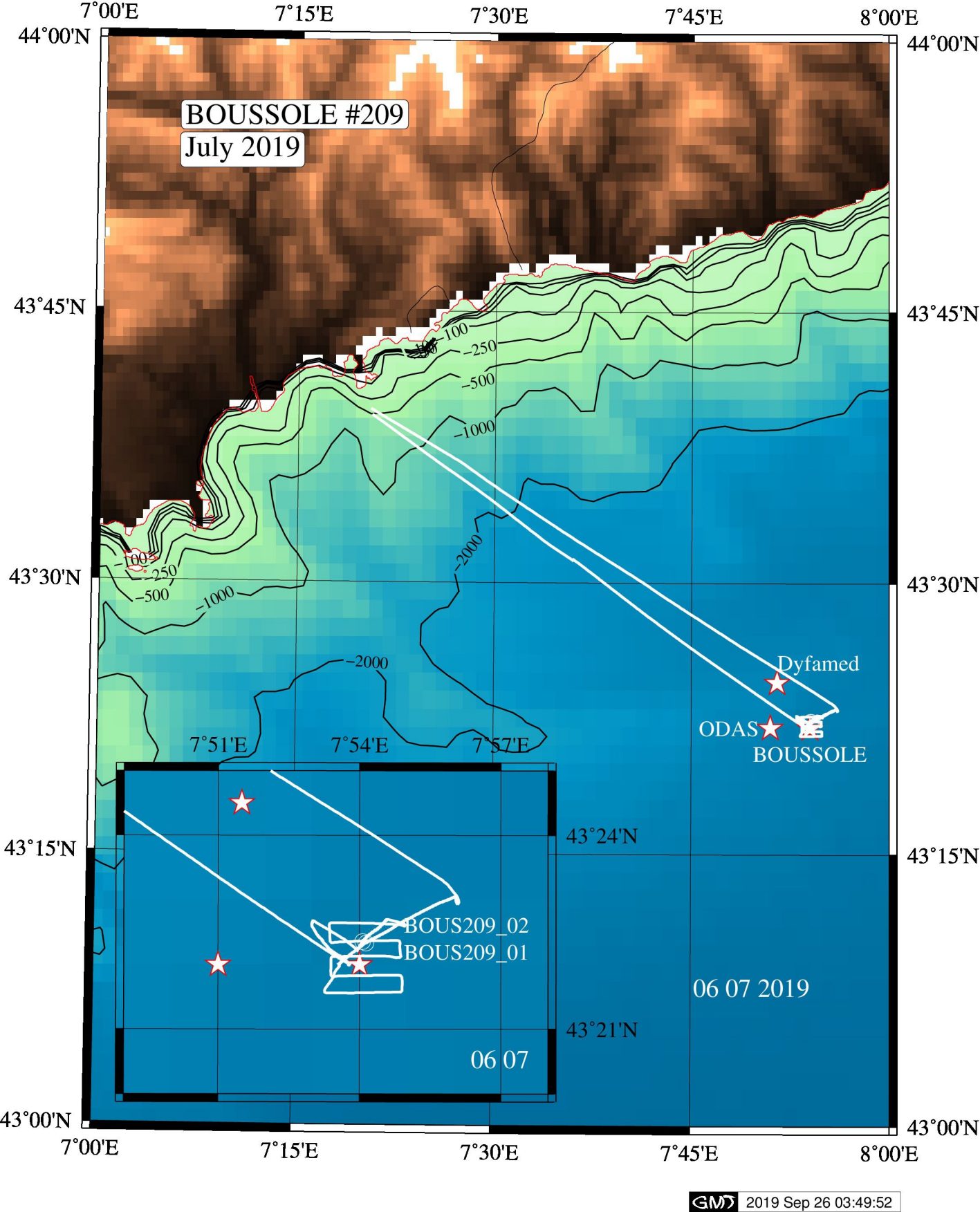
3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) A/D voltage 0, Oxygen, SBE 43

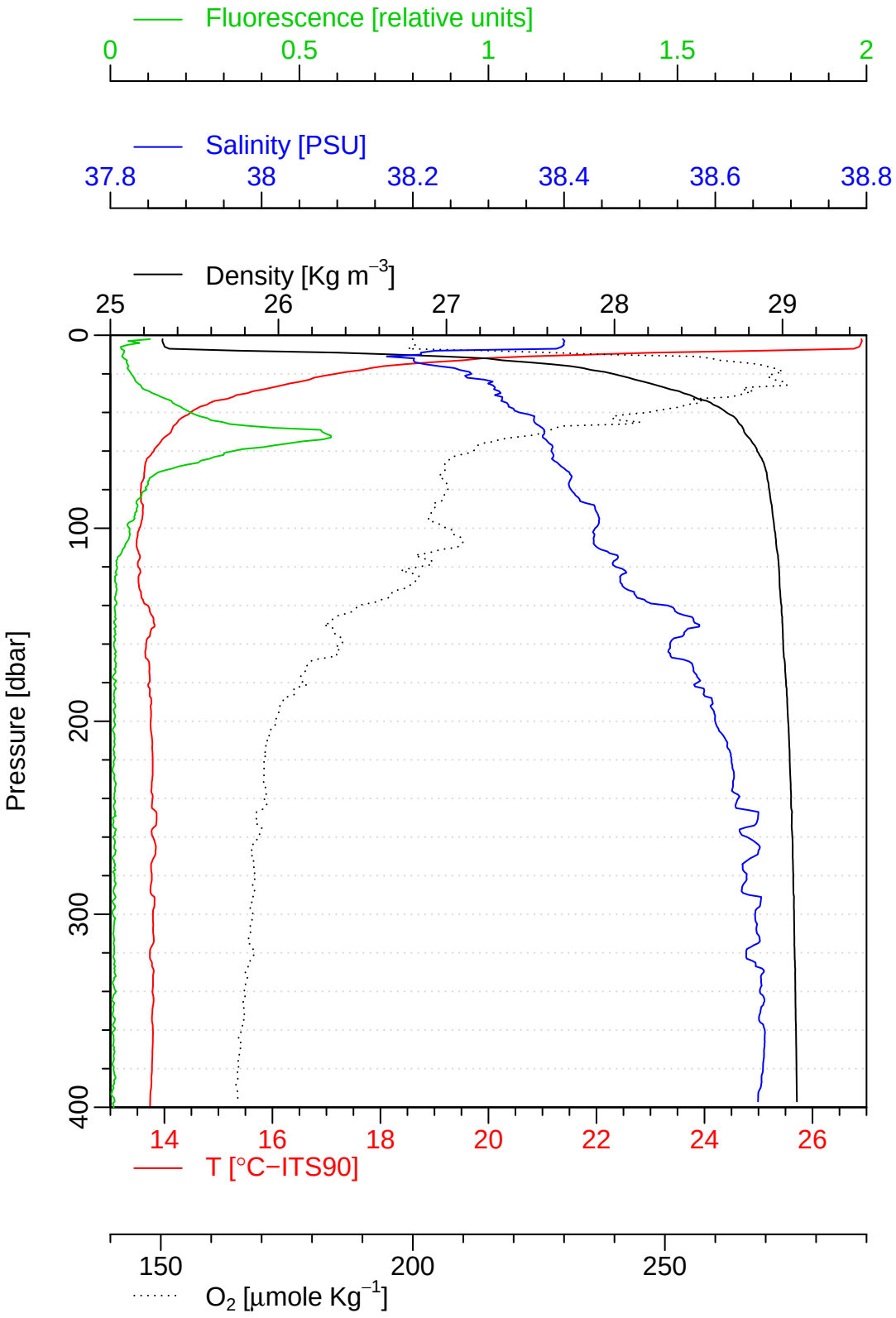
```
   Serial number : 0378
   Calibrated on : 27-Dec-18
   Equation      : Sea-Bird
   Soc           : 3.62050e-001
   Offset        : -6.61600e-001
   A             : -3.75580e-003
   B             : 1.30860e-004
   C             : -1.88360e-006
   E             : 3.60000e-002
   Tau20         : 1.21000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

7) A/D voltage 3, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

8) A/D voltage 4, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

9) A/D voltage 5, Free

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #209
July 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS209_02
BOUS209_01
06 07 2019
06 07
GMT 2019 Sep 26 03:49:52

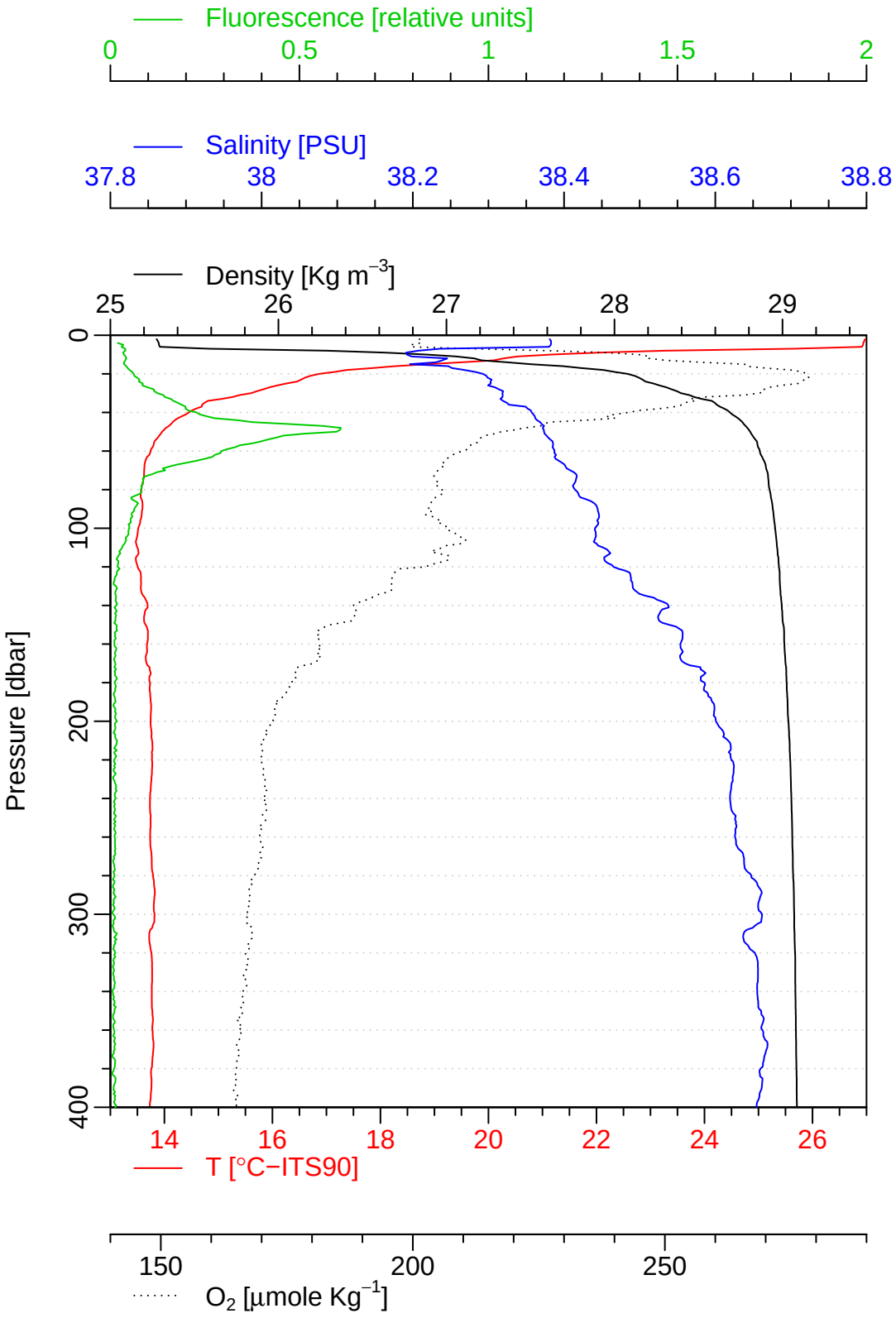
bous209_01

Date = 06/07/2019
Heure debut [TU] = 10:07
Longitude = 007 54.067 E
Latitude = 43 22.357 N



bous209_02

Date = 06/07/2019
Heure debut [TU] = 12:21
Longitude = 007 54.138 E
Latitude = 43 22.333 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B209\raw\BOUS 209_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 4097
   Calibrated on : 17-Jul-18
   G             : -9.94239521e+000
   H             : 1.22578429e+000
   I             : -2.24017117e-003
   J             : 2.15802938e-004
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

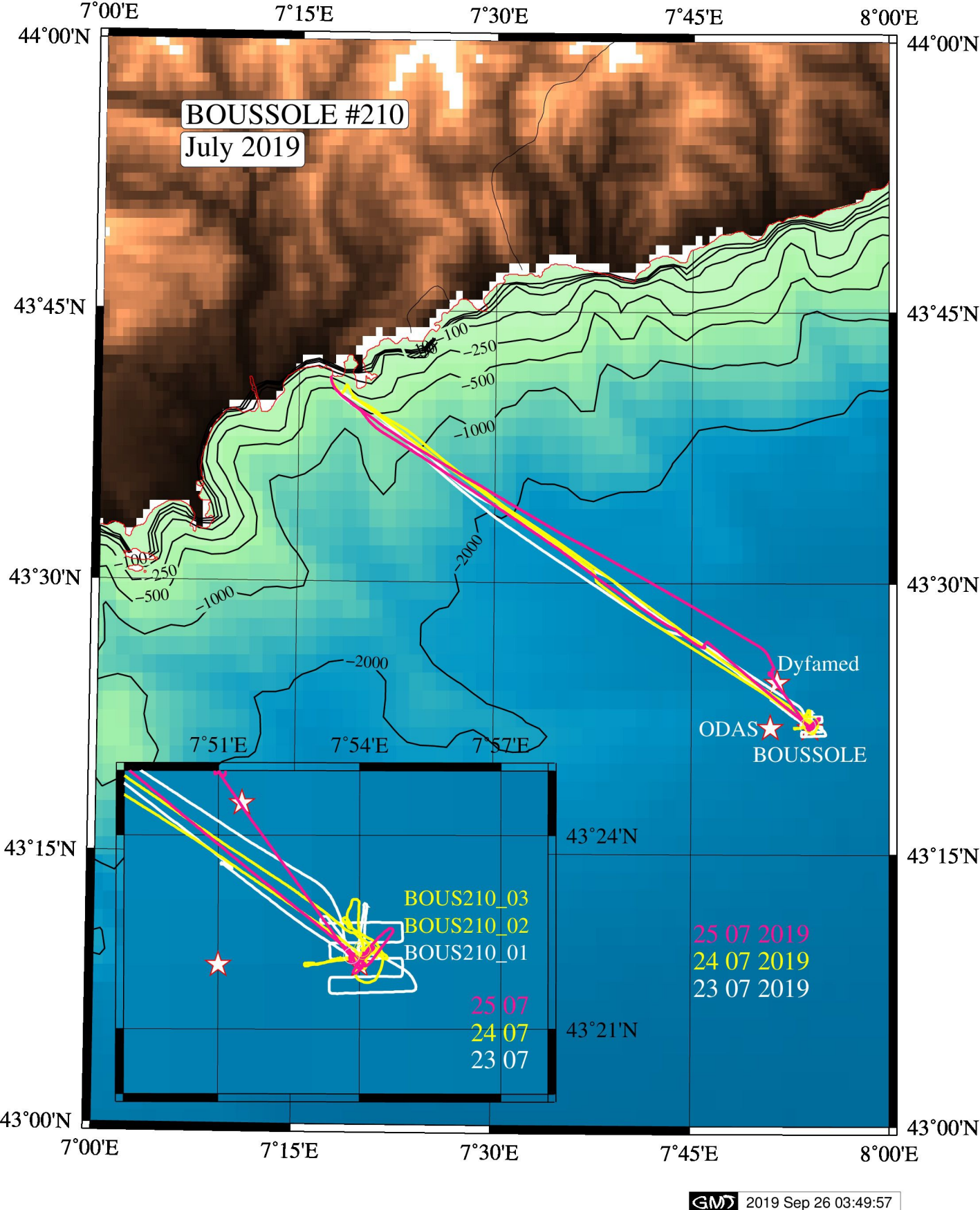
3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) A/D voltage 0, Oxygen, SBE 43

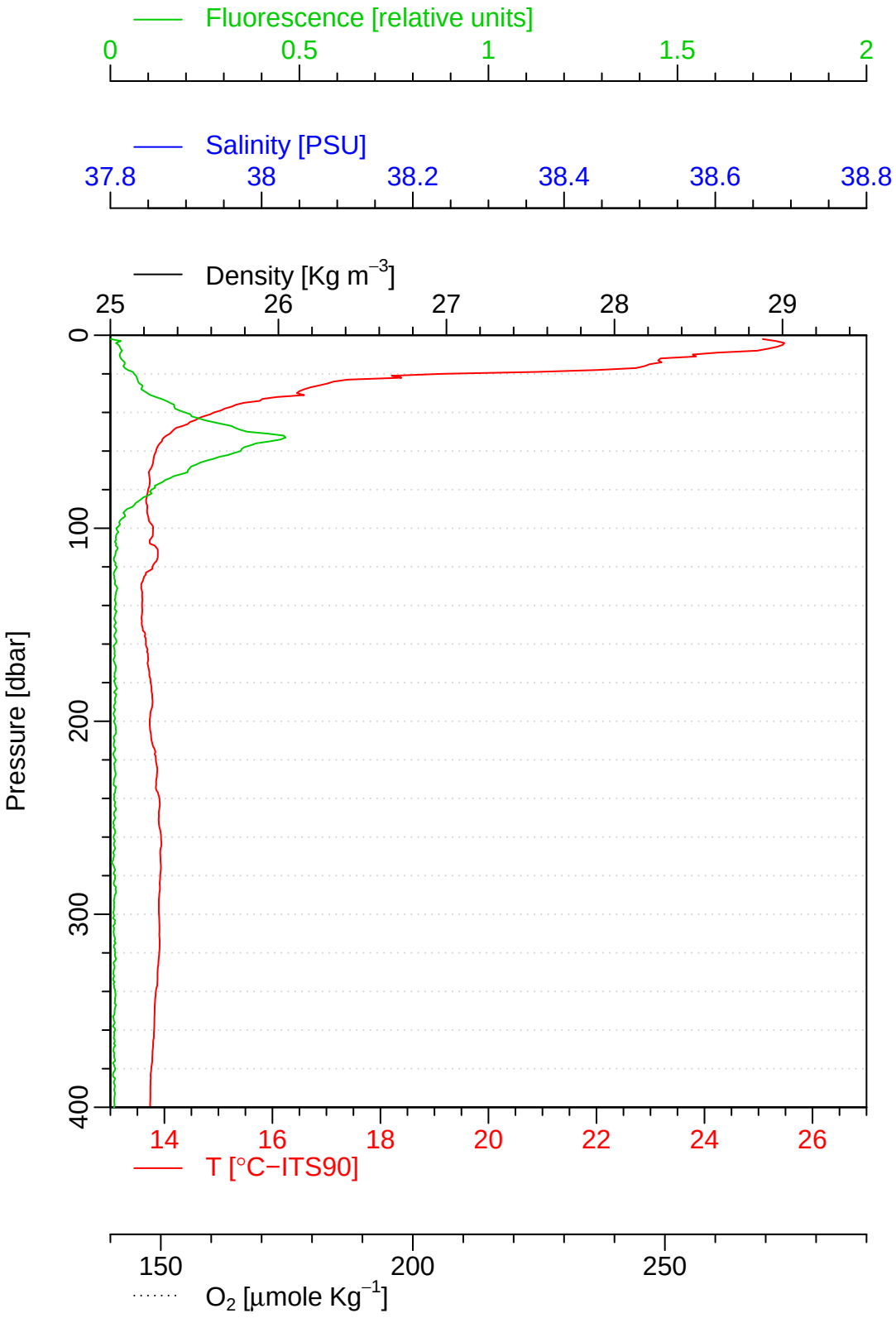
```
   Serial number : 0378
   Calibrated on : 27-Dec-18
   Equation      : Sea-Bird
   Soc           : 3.62050e-001
   Offset        : -6.61600e-001
   A             : -3.75580e-003
   B             : 1.30860e-004
   C             : -1.88360e-006
   E             : 3.60000e-002
   Tau20         : 1.21000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, Free

7) A/D voltage 3, Free

8) A/D voltage 4, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

9) A/D voltage 5, Free

10) A/D voltage 6, Free

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #210
July 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS210_03
BOUS210_02
BOUS210_01
25 07
24 07
23 07
25 07 2019
24 07 2019
23 07 2019
GMT 2019 Sep 26 03:49:57

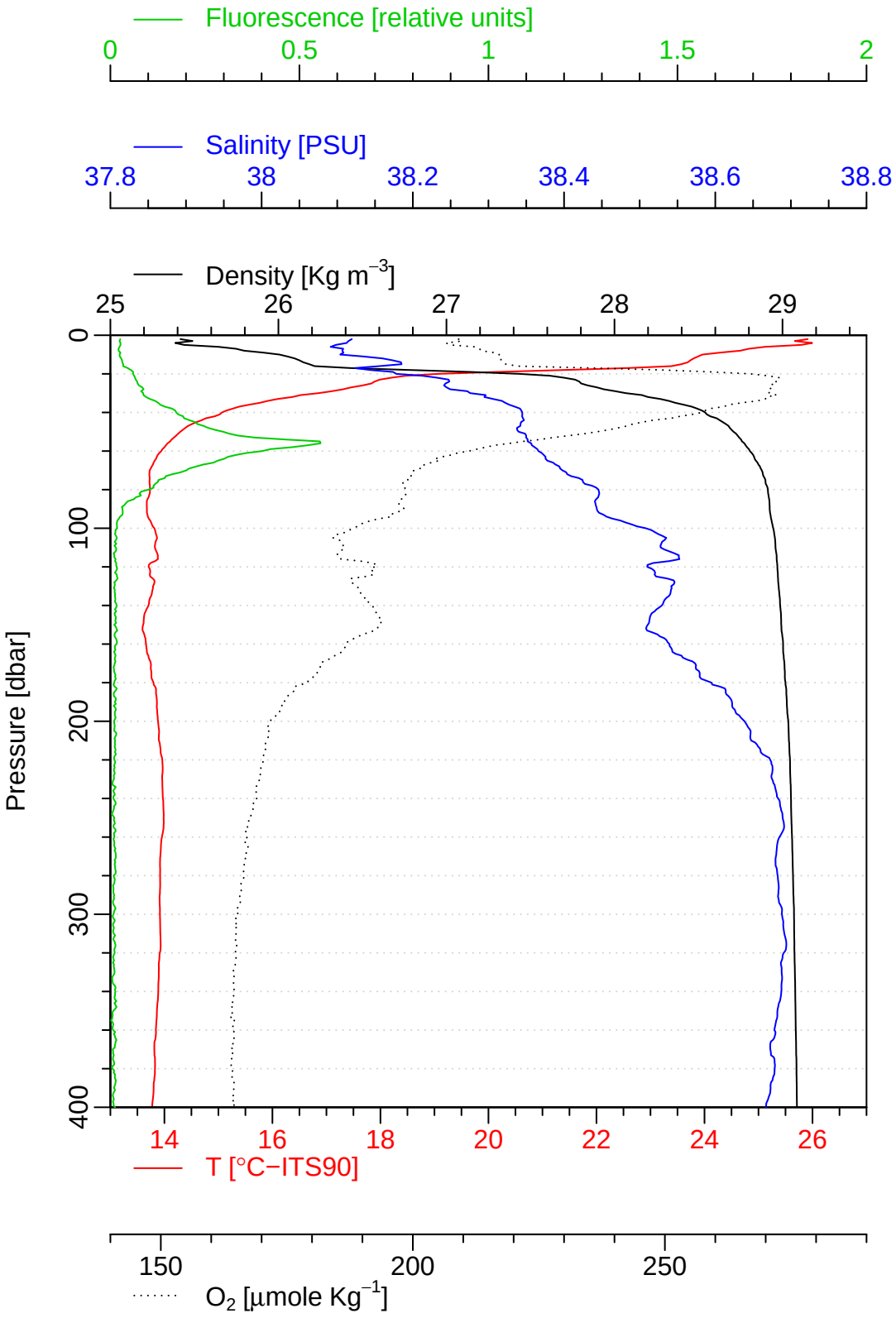
bous210_01

Date = 23/07/2019
Heure debut [TU] = 13:08
Longitude = 007 53.833 E
Latitude = 43 22.134 N



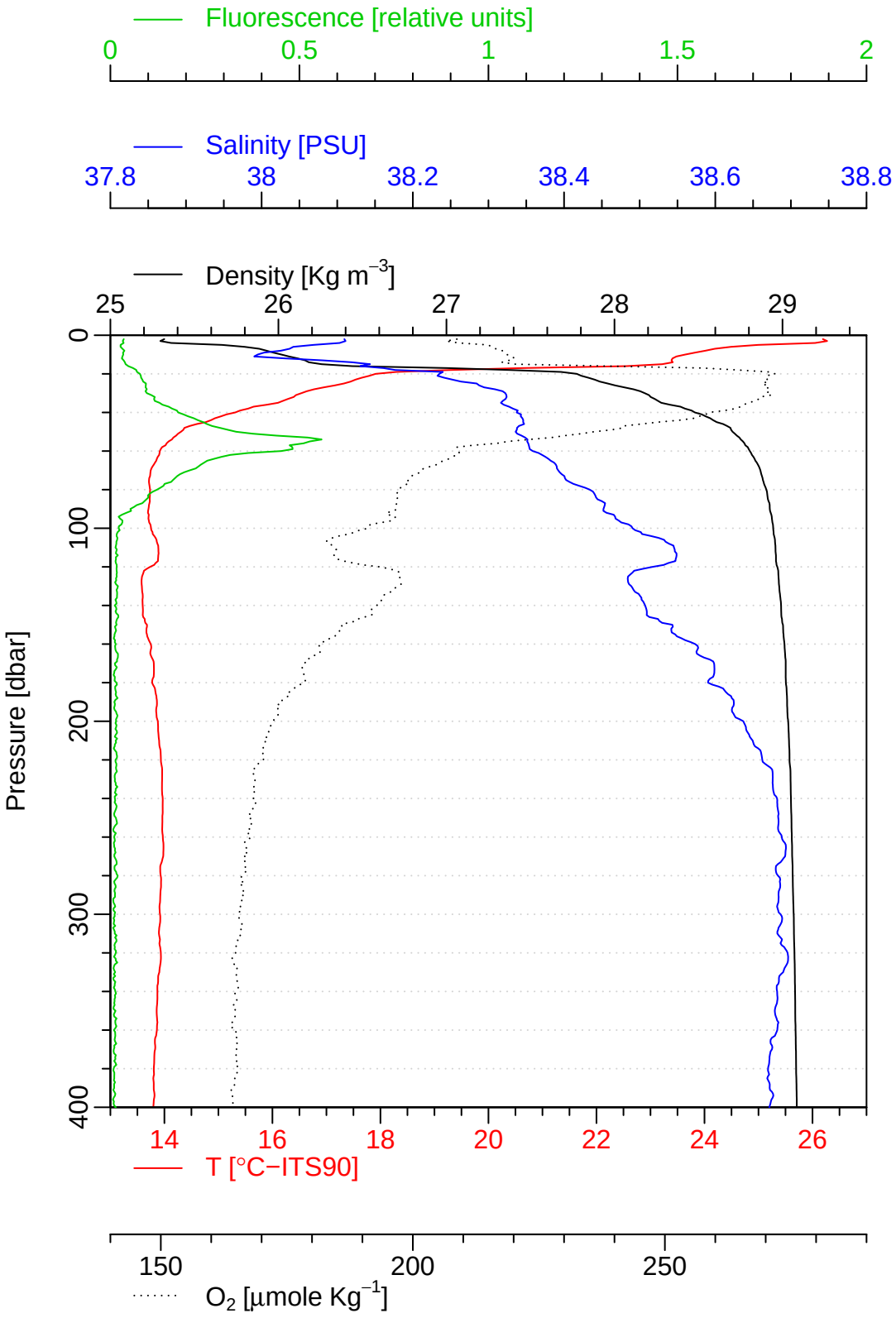
bous210_02

Date = 24/07/2019
Heure debut [TU] = 10:44
Longitude = 007 54.075 E
Latitude = 43 22.198 N



bous210_03

Date = 24/07/2019
Heure debut [TU] = 12:45
Longitude = 007 54.055 E
Latitude = 43 22.243 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B210\raw\BOUS 210_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 1539
   Calibrated on : 19-Apr-19
   G             : 4.83459939e-003
   H             : 6.68355356e-004
   I             : 2.37960006e-005
   J             : 1.75426415e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 2929
   Calibrated on : 17-Jul-18
   G             : -1.06004078e+001
   H             : 1.42062438e+000
   I             : 3.95075512e-004
   J             : 4.20648779e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0329
   Calibrated on : 04-Dec-09 (corr May-2017)
   C1            : -4.499631e+004
   C2            : 4.598757e-001
   C3            : 1.505020e-002
   D1            : 3.936600e-002
   D2            : 0.000000e+000
   T1            : 3.004570e+001
   T2            : -1.880753e-004
   T3            : 4.727060e-006
   T4            : -1.923520e-009
   T5            : 0.000000e+000
   Slope         : 0.99996509
   Offset        : -1.27039
   AD590M        : 1.280100e-002
   AD590B        : -9.240166e+000
```

4) A/D voltage 0, Oxygen, SBE 43

```
   Serial number : 0587
   Calibrated on : 22-May-19
   Equation      : Sea-Bird
   Soc           : 3.68480e-001
   Offset        : -6.77900e-001
   A             : -4.19030e-003
   B             : 1.84280e-004
   C             : -3.04220e-006
   E             : 3.60000e-002
   Tau20         : 1.11000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

7) A/D voltage 3, Free

8) A/D voltage 4, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

9) A/D voltage 5, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```

Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B210\raw\BOUS 210_02.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 1539
   Calibrated on : 19-Apr-19
   G             : 4.83459939e-003
   H             : 6.68355356e-004
   I             : 2.37960006e-005
   J             : 1.75426415e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 4097
   Calibrated on : 17-Jul-18
   G             : -9.94239521e+000
   H             : 1.22578429e+000
   I             : -2.24017117e-003
   J             : 2.15802938e-004
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

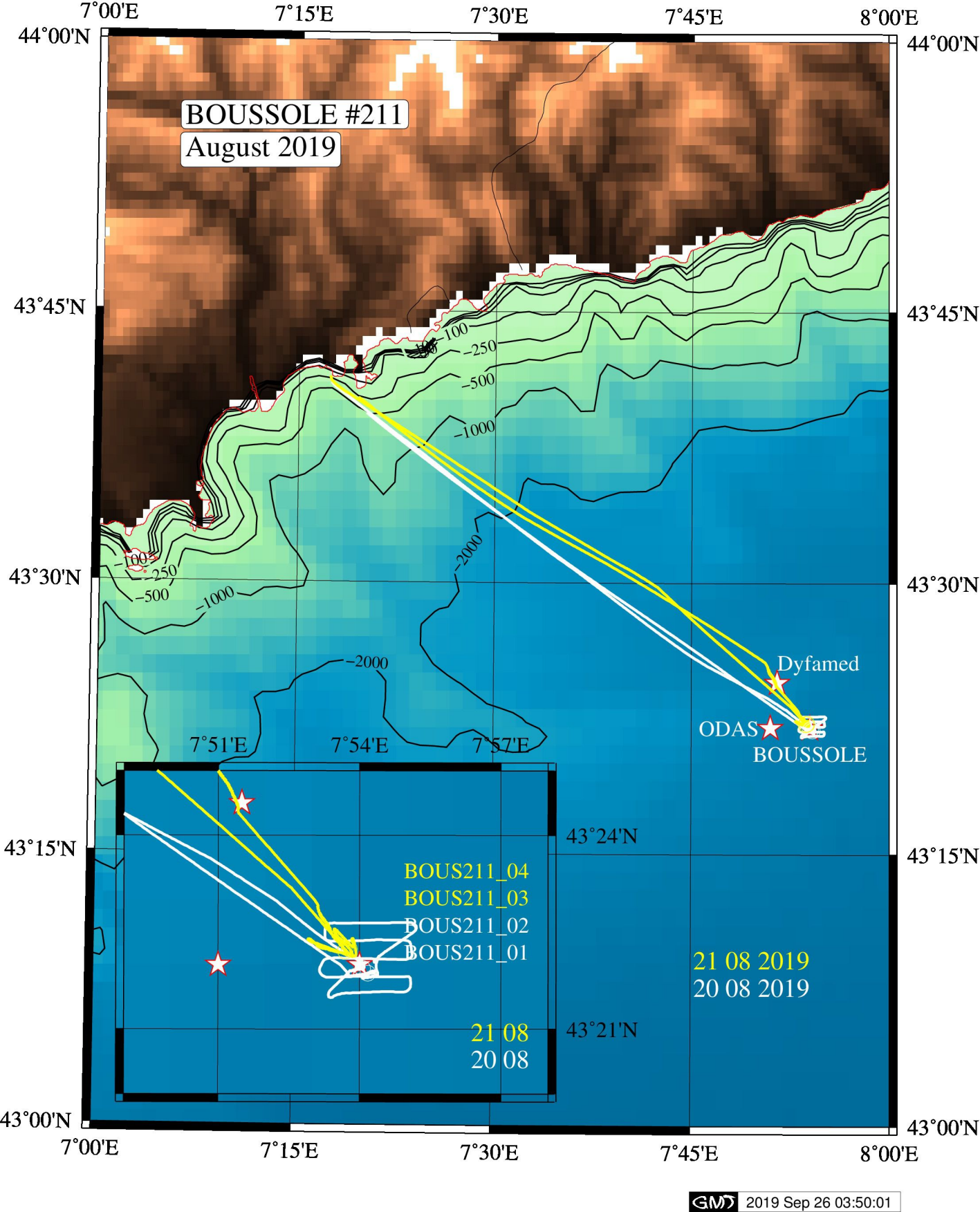
3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) A/D voltage 0, Oxygen, SBE 43

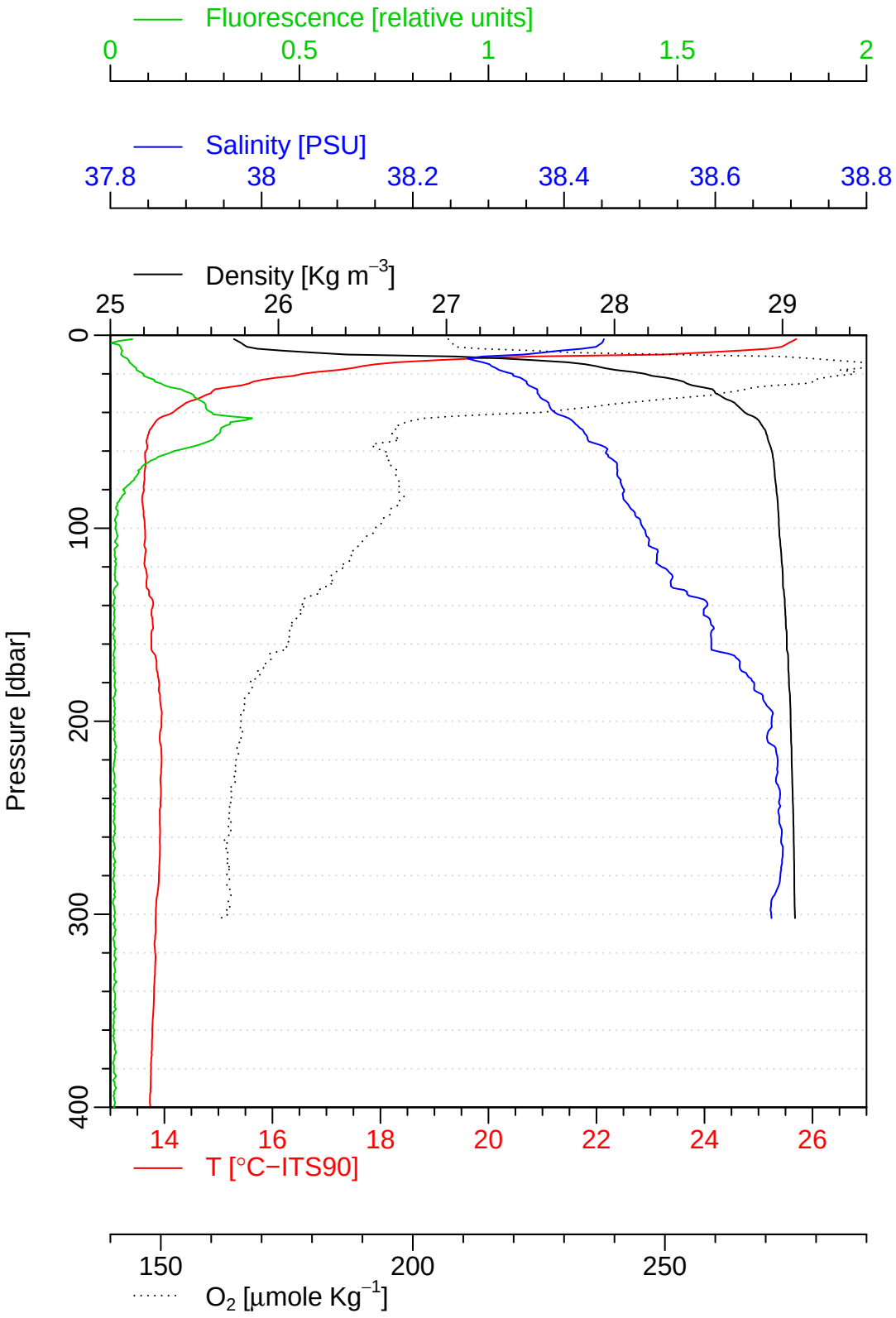
```
   Serial number : 0587
   Calibrated on : 22-May-19
   Equation      : Sea-Bird
   Soc           : 3.68480e-001
   Offset        : -6.77900e-001
   A             : -4.19030e-003
   B             : 1.84280e-004
   C             : -3.04220e-006
   E             : 3.60000e-002
   Tau20         : 1.11000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

7) A/D voltage 3, Free

8) A/D voltage 4, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

9) A/D voltage 5, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #211
August 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS211_04
BOUS211_03
BOUS211_02
BOUS211_01
21 08 2019
20 08 2019
21 08
20 08
GMT 2019 Sep 26 03:50:01

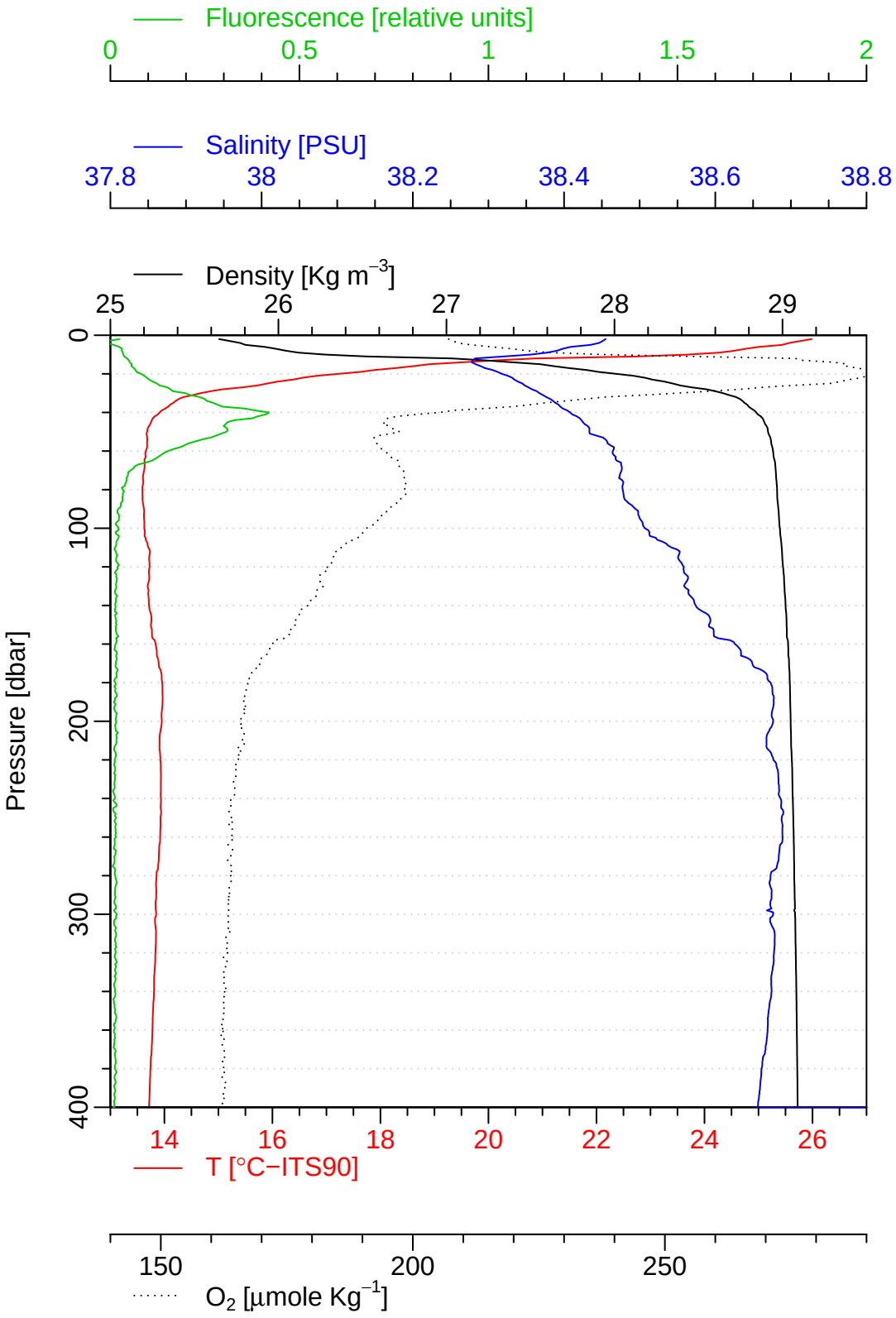
bous211_01

Date = 20/08/2019
Heure debut [TU] = 09:34
Longitude = 007 54.068 E
Latitude = 43 21.934 N



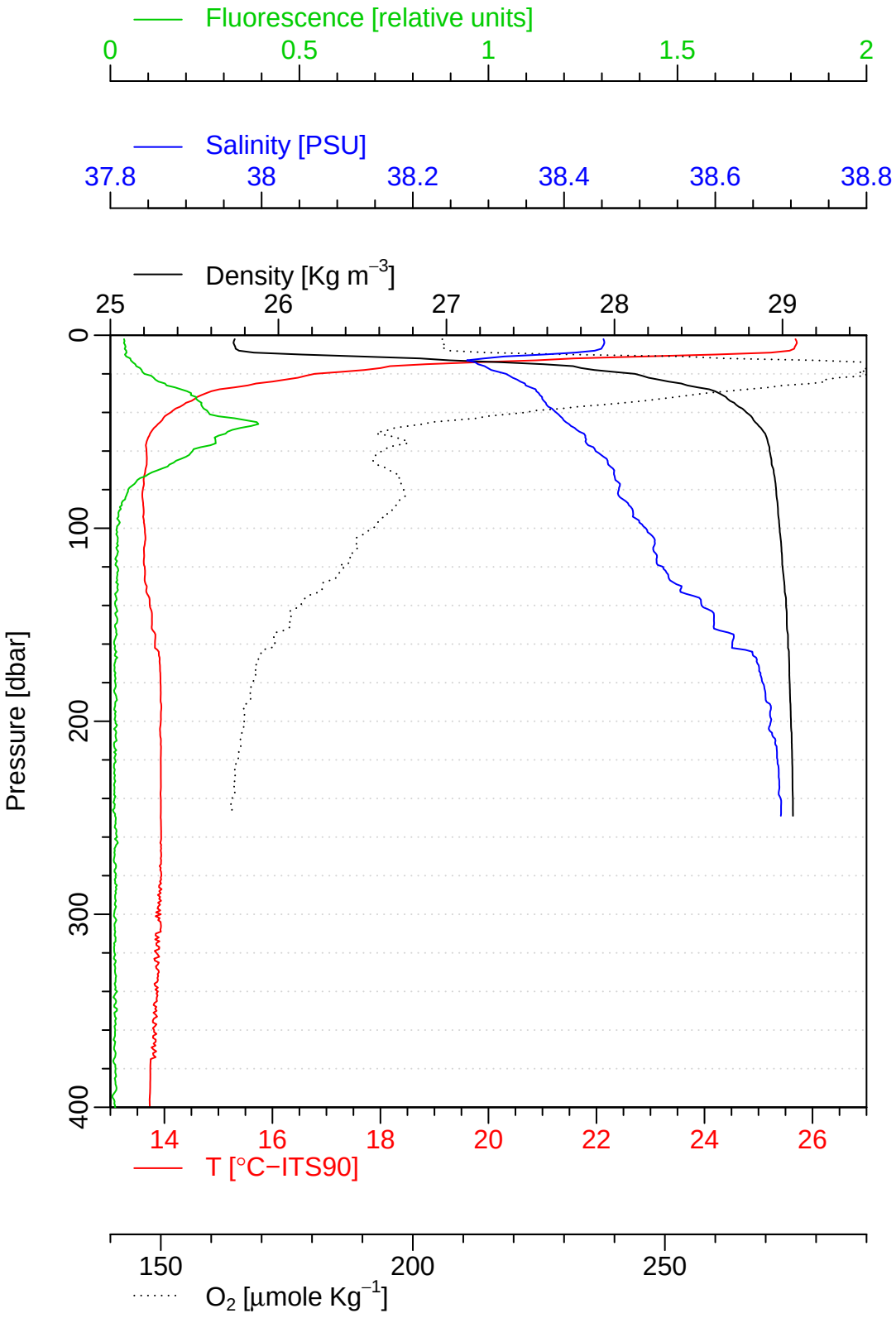
bous211_02

Date = 20/08/2019
Heure debut [TU] = 12:14
Longitude = 007 54.176 E
Latitude = 43 21.865 N



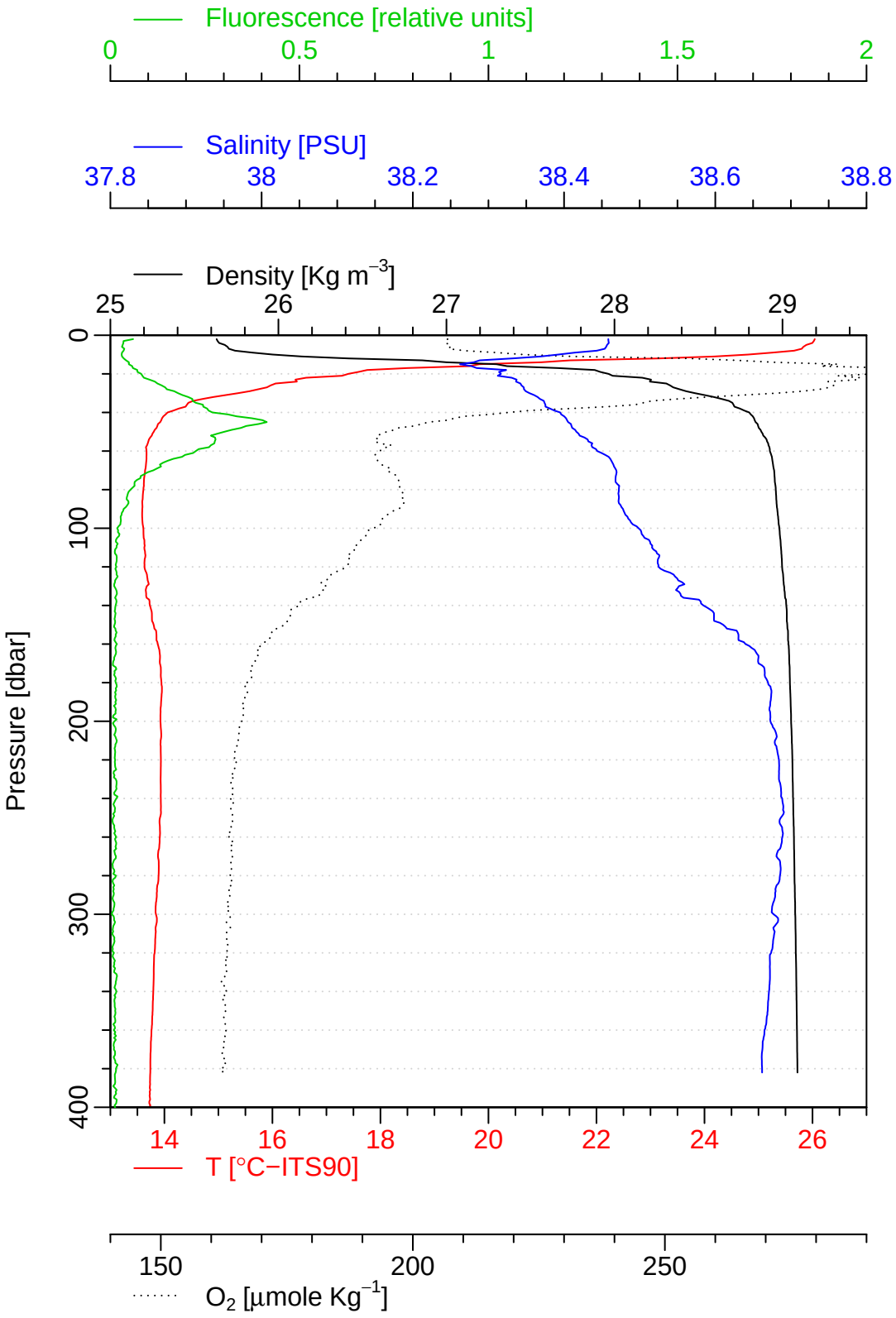
bous211_03

Date = 21/08/2019
Heure debut [TU] = 08:22
Longitude = 007 53.786 E
Latitude = 43 22.244 N



bous211_04

Date = 21/08/2019
Heure debut [TU] = 10:09
Longitude = 007 53.701 E
Latitude = 43 22.214 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B211\raw\BOUS 211_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 1539
   Calibrated on : 19-Apr-19
   G             : 4.83459939e-003
   H             : 6.68355356e-004
   I             : 2.37960006e-005
   J             : 1.75426415e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 4097
   Calibrated on : 17-Jul-18
   G             : -9.94239521e+000
   H             : 1.22578429e+000
   I             : -2.24017117e-003
   J             : 2.15802938e-004
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

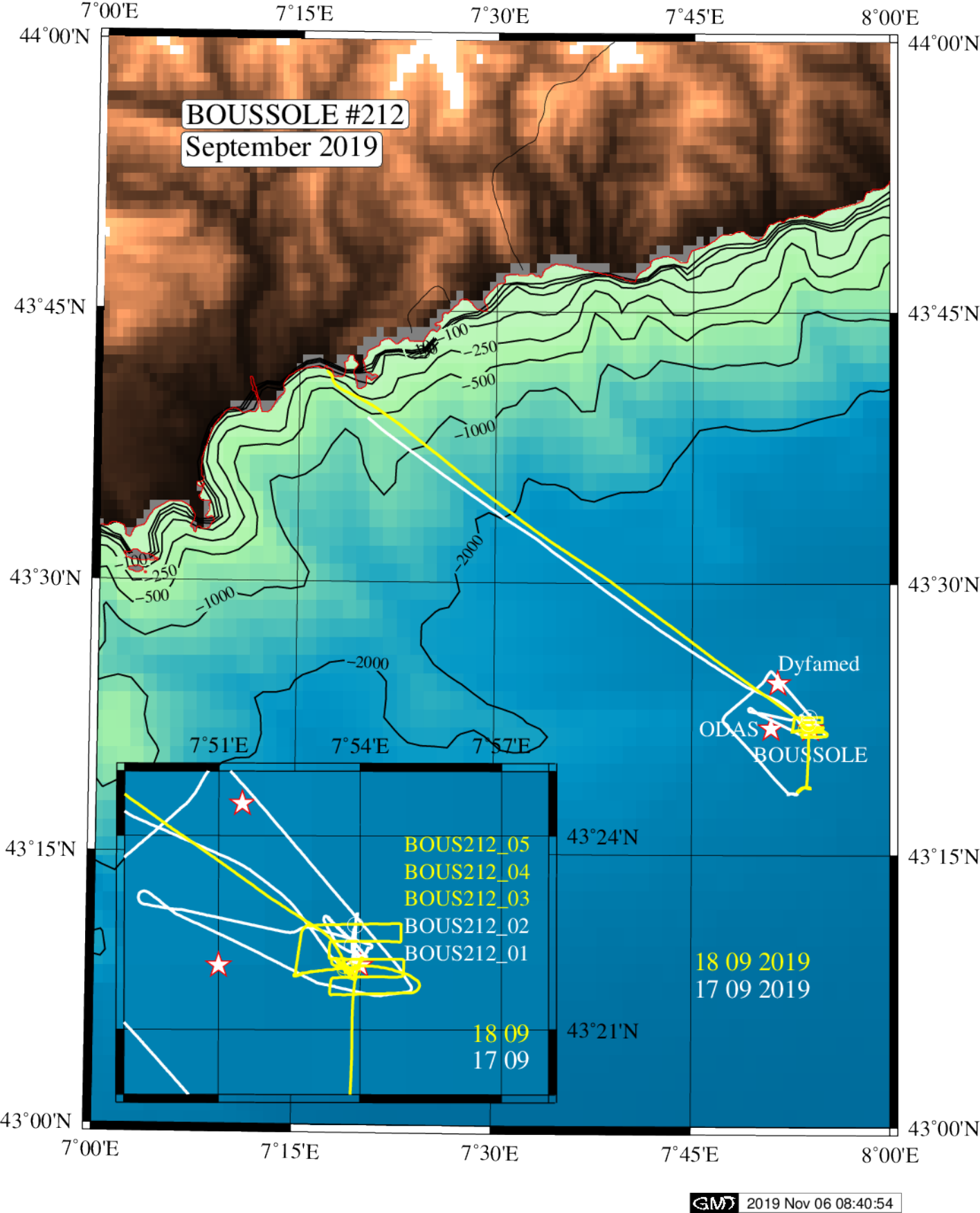
3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) A/D voltage 0, Oxygen, SBE 43

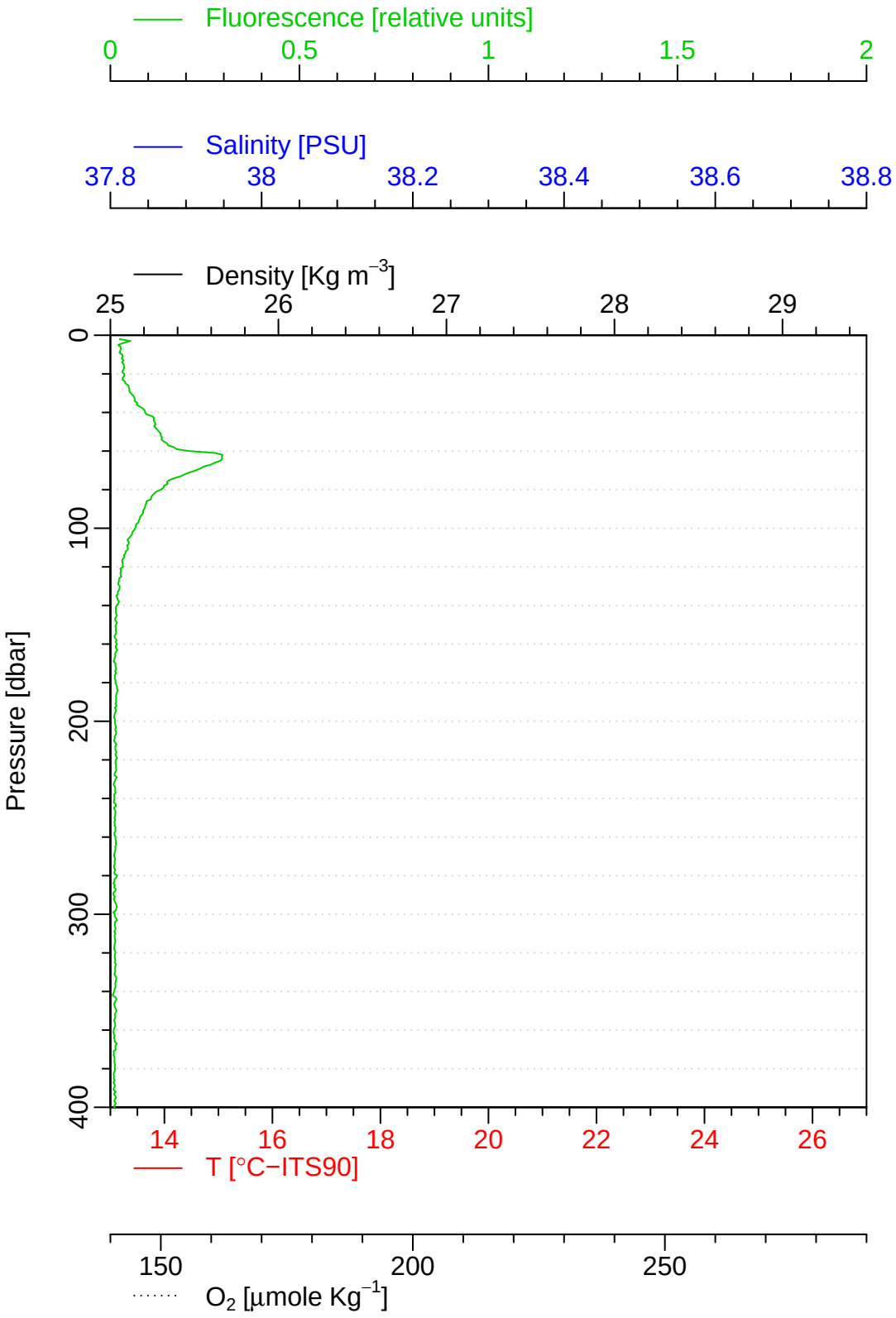
```
   Serial number : 0587
   Calibrated on : 22-May-19
   Equation      : Sea-Bird
   Soc           : 3.68480e-001
   Offset        : -6.77900e-001
   A             : -4.19030e-003
   B             : 1.84280e-004
   C             : -3.04220e-006
   E             : 3.60000e-002
   Tau20         : 1.11000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, Fluorometer, Chelsea Aqua 3

   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000

7) A/D voltage 3, Free

8) A/D voltage 4, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

9) A/D voltage 5, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #212
September 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS212_05
BOUS212_04
BOUS212_03
BOUS212_02
BOUS212_01
18 09 2019
17 09 2019
18 09
17 09
GMT 2019 Nov 06 08:40:54

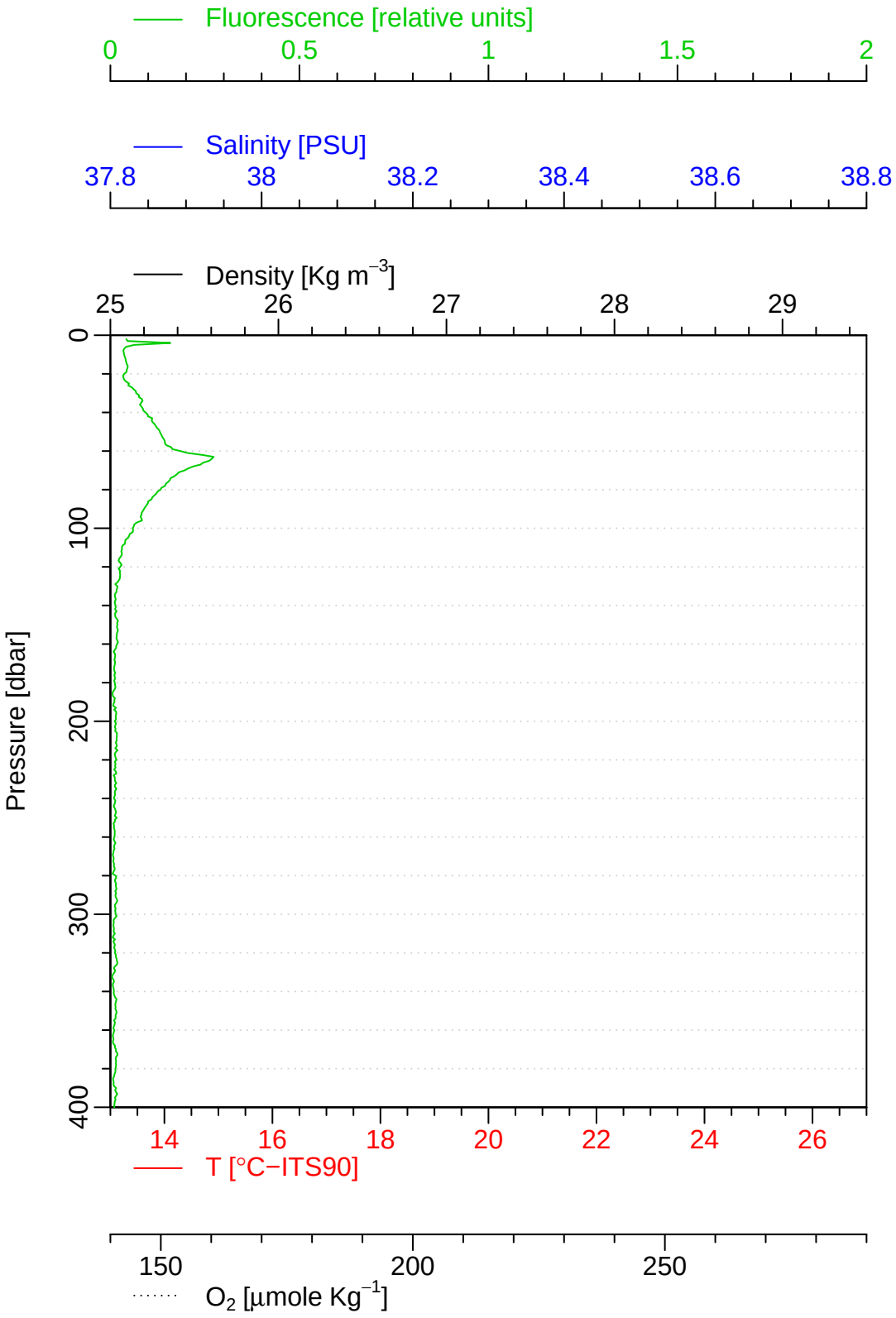
bous212_01

Date = 17/09/2019
Heure debut [TU] = 12:29
Longitude = 007 53.836 E
Latitude = 43 22.308 N



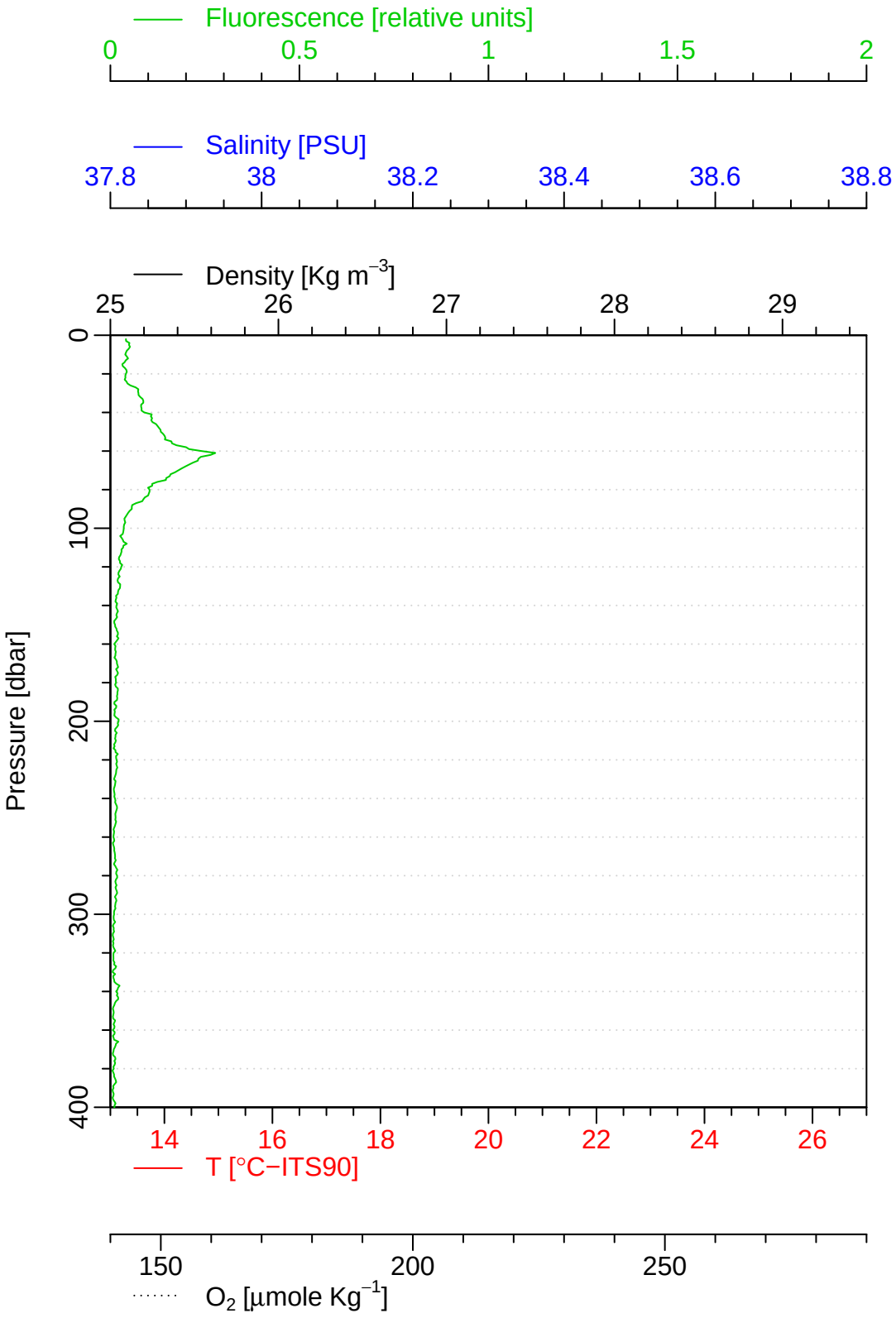
bous212_02

Date = 17/09/2019
Heure debut [TU] = 13:45
Longitude = 007 53.902 E
Latitude = 43 22.621 N



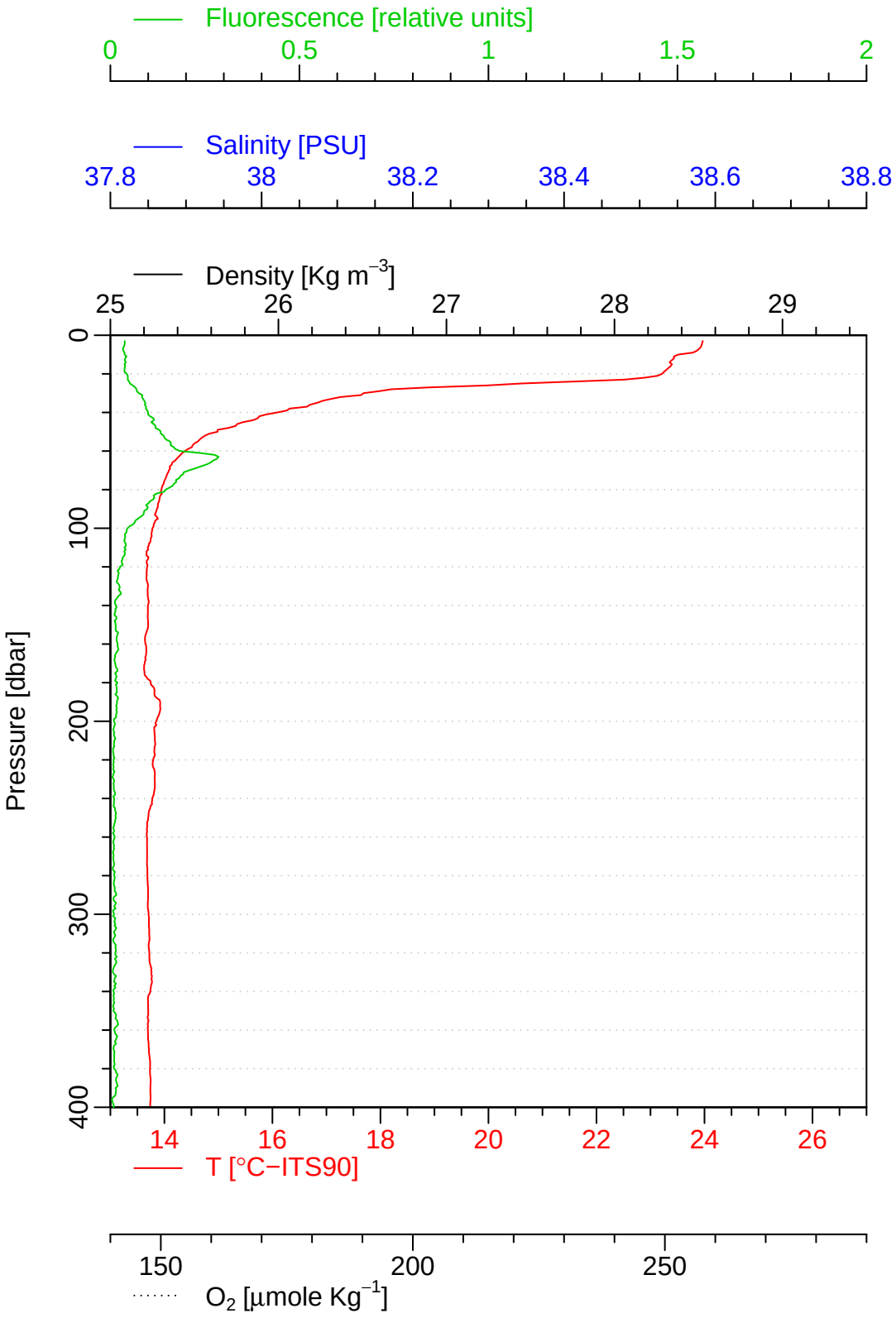
bous212_03

Date = 18/09/2019
Heure debut [TU] = 06:21
Longitude = 007 53.678 E
Latitude = 43 21.946 N



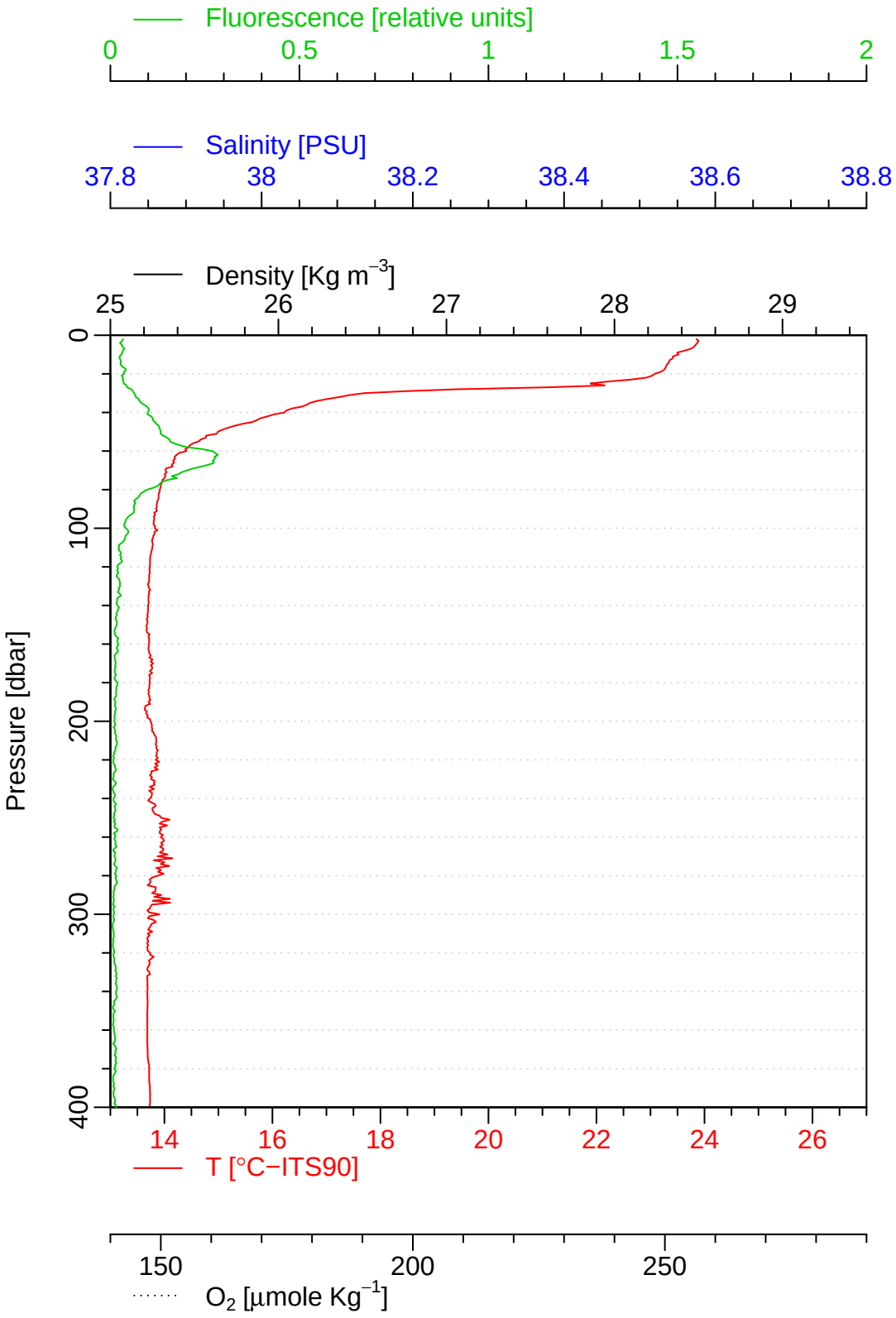
bous212_04

Date = 18/09/2019
Heure debut [TU] = 08:23
Longitude = 007 53.668 E
Latitude = 43 21.994 N



bous212_05

Date = 18/09/2019
Heure debut [TU] = 11:29
Longitude = 007 53.836 E
Latitude = 43 21.898 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B212\raw\BOUS 212_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 0
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 1539
   Calibrated on : 19-Apr-19
   G             : 4.83459939e-003
   H             : 6.68355356e-004
   I             : 2.37960006e-005
   J             : 1.75426415e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 4097
   Calibrated on : 17-Jul-18
   G             : -9.94239521e+000
   H             : 1.22578429e+000
   I             : -2.24017117e-003
   J             : 2.15802938e-004
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) Frequency 3, Temperature, 2

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

5) Frequency 4, Conductivity, 2

```
   Serial number : 2929
   Calibrated on : 17-Jul-18
   G             : -1.06004078e+001
   H             : 1.42062438e+000
   I             : 3.95075512e-004
   J             : 4.20648779e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

6) A/D voltage 0, Oxygen, SBE 43

```
   Serial number : 0587
   Calibrated on : 22-May-19
   Equation      : Sea-Bird
   Soc           : 3.68480e-001
   Offset        : -6.77900e-001
   A             : -4.19030e-003
   B             : 1.84280e-004
   C             : -3.04220e-006
   E             : 3.60000e-002
   Tau20         : 1.11000e+000
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003
```

7) A/D voltage 1, Free

8) A/D voltage 2, Fluorometer, Chelsea Aqua 3

```
   Serial number : 088-094
   Calibrated on : 12-Nov-2015
   VB            : 0.311200
   V1            : 2.082900
   Vacetone      : 0.434600
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : 0.000000
```

9) A/D voltage 3, Free

10) A/D voltage 4, User Polynomial

```
    Serial number : 171
    Calibrated on : 19May2014
    Sensor name   : RINKOIII_DO
    A0            : 0.00000000
    A1            : 1.00000000
    A2            : 0.00000000
    A3            : 0.00000000
```

11) A/D voltage 5, User Polynomial, 2

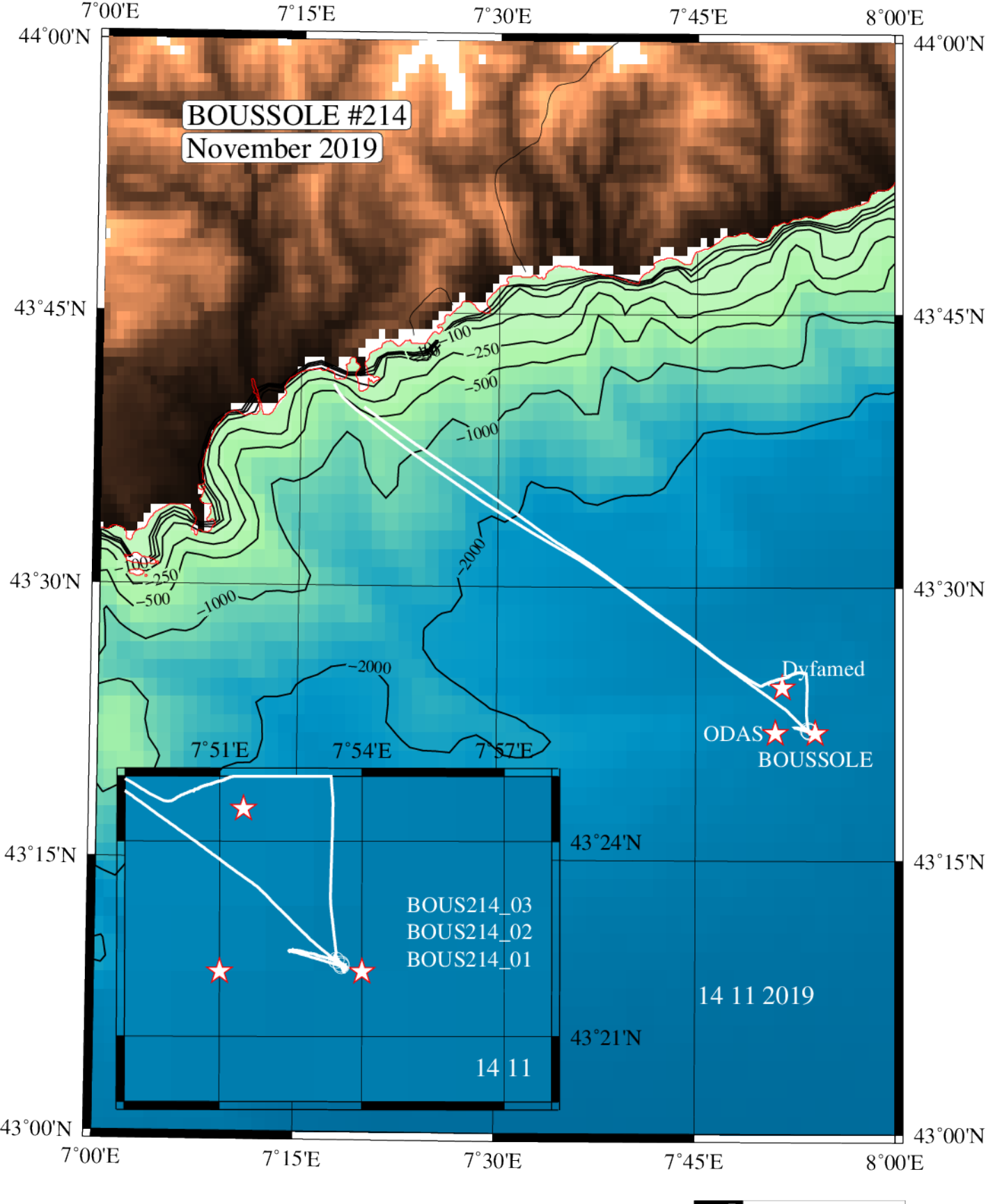
```
    Serial number : 171
    Calibrated on : 12May2014
    Sensor name   : RINKOIII_Temp
    A0            : -5.25367500
    A1            : 16.66254000
    A2            : -2.13105300
    A3            : 0.45564880
```

12) A/D voltage 6, Altimeter

```
    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000
```

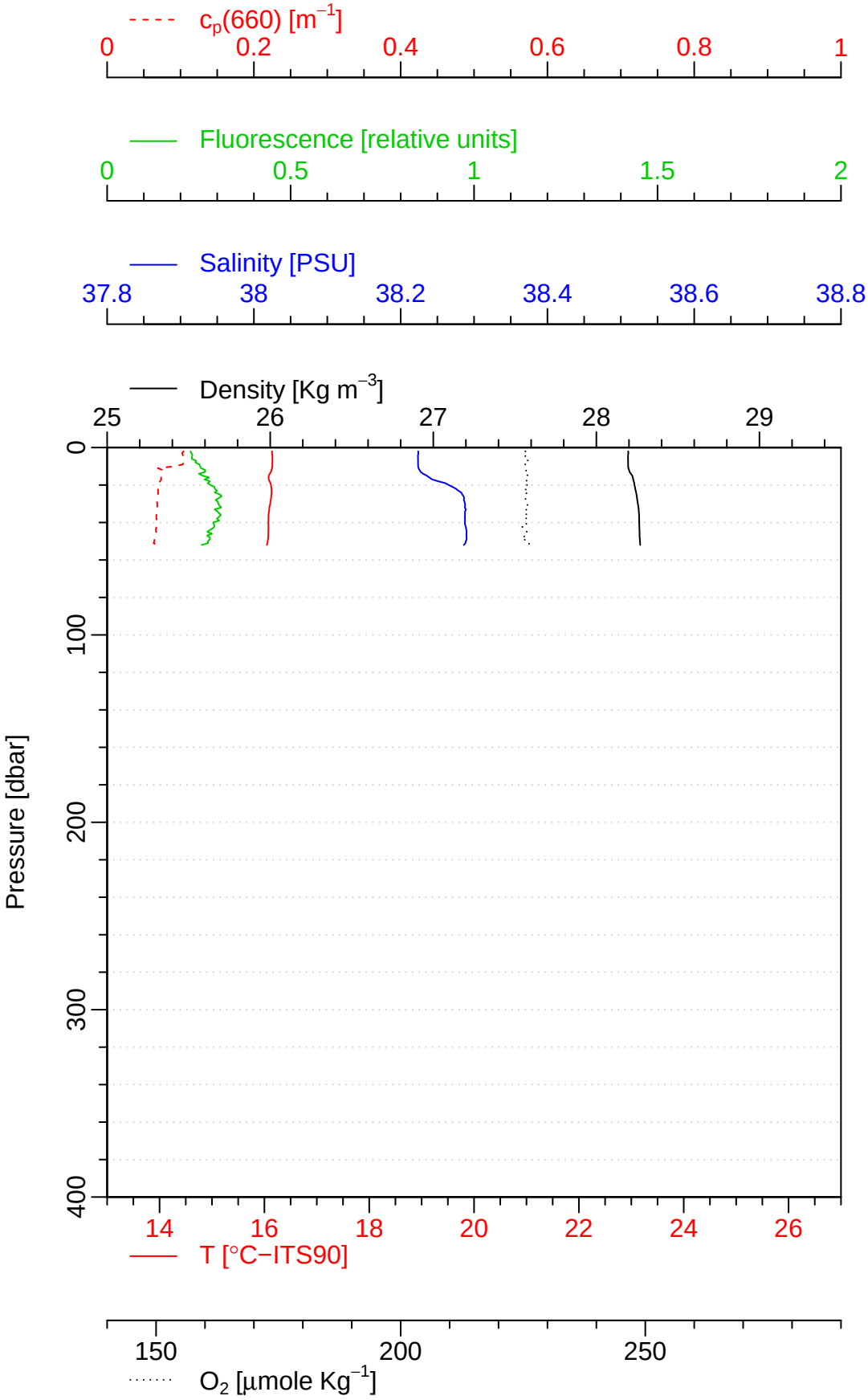
13) A/D voltage 7, Free

Scan length : 37


BOUSSOLE #214
November 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS214_03
BOUS214_02
BOUS214_01
14 11
14 11 2019
GMT 2020 Feb 05 01:34:02

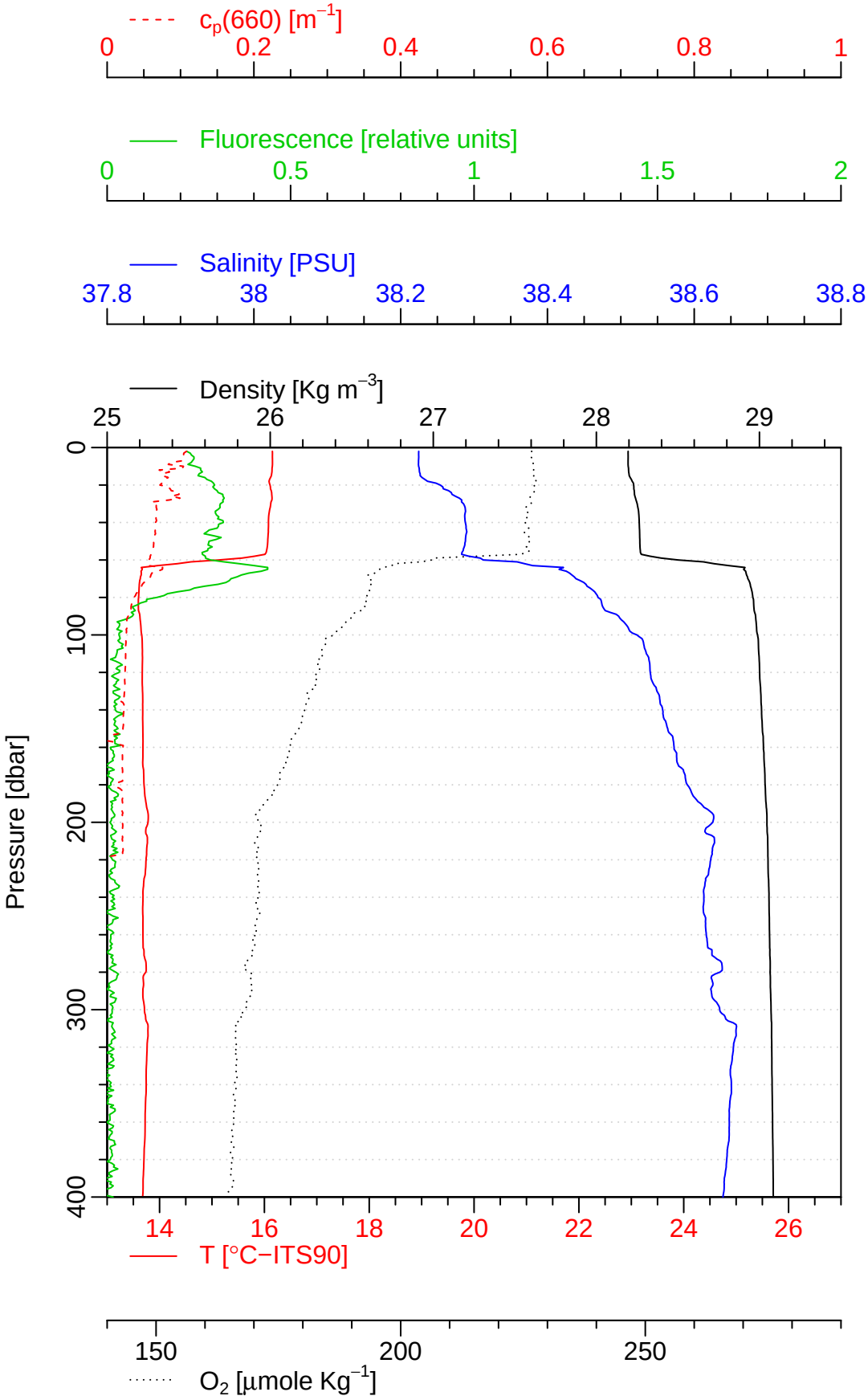
bous214_01

Date = 14/11/2019
Heure debut [TU] = 09:41
Longitude = 007 53.561 E
Latitude = 43 22.114 N



bous214_03

Date = 14/11/2019
Heure debut [TU] = 10:17
Longitude = 007 53.567 E
Latitude = 43 22.087 N



Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B214\raw\BOUS 214_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 2929
   Calibrated on : 17-Jul-18
   G             : -1.06004078e+001
   H             : 1.42062438e+000
   I             : 3.95075512e-004
   J             : 4.20648779e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

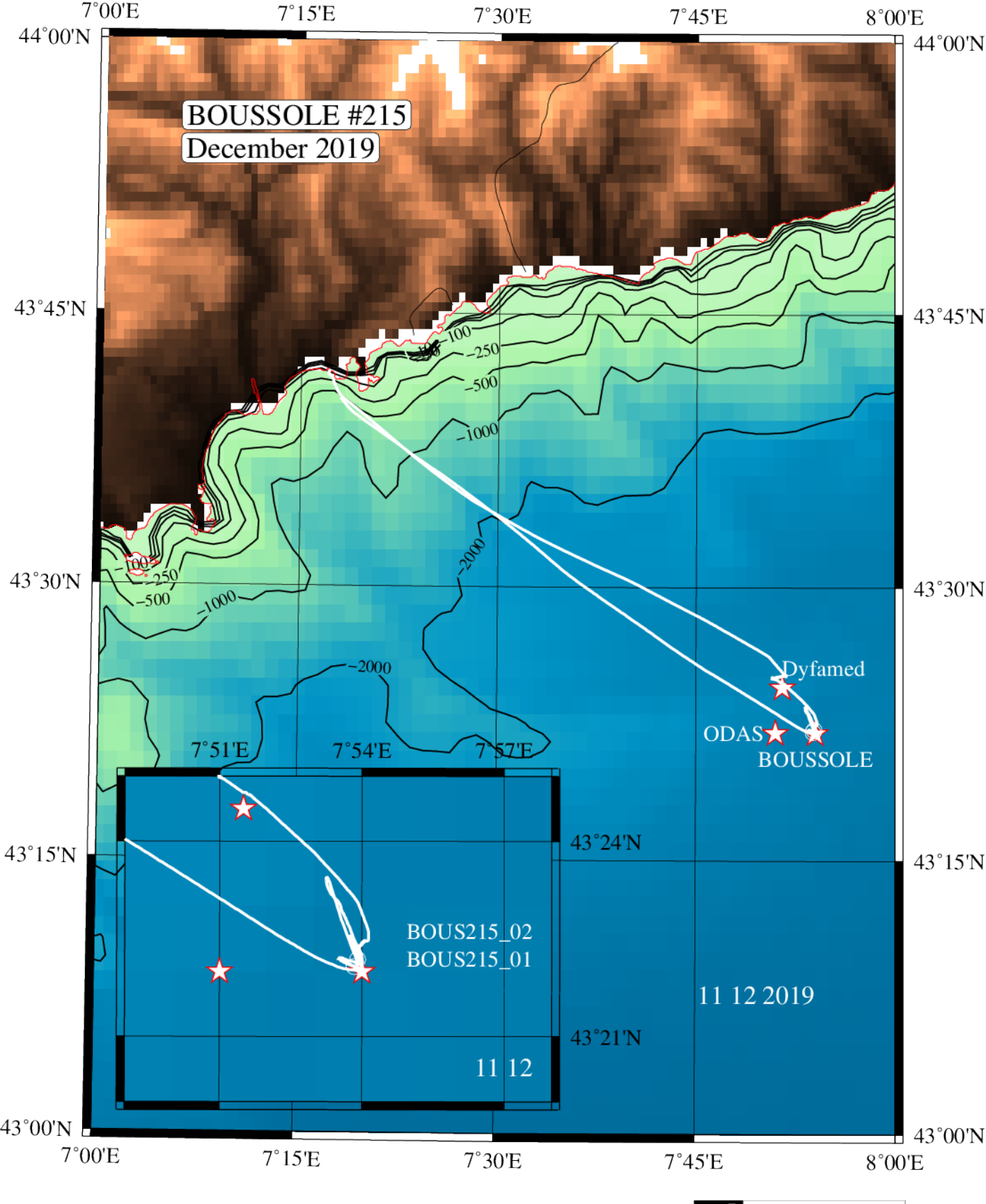
3) Frequency 2, Pressure, Digiquartz with TC

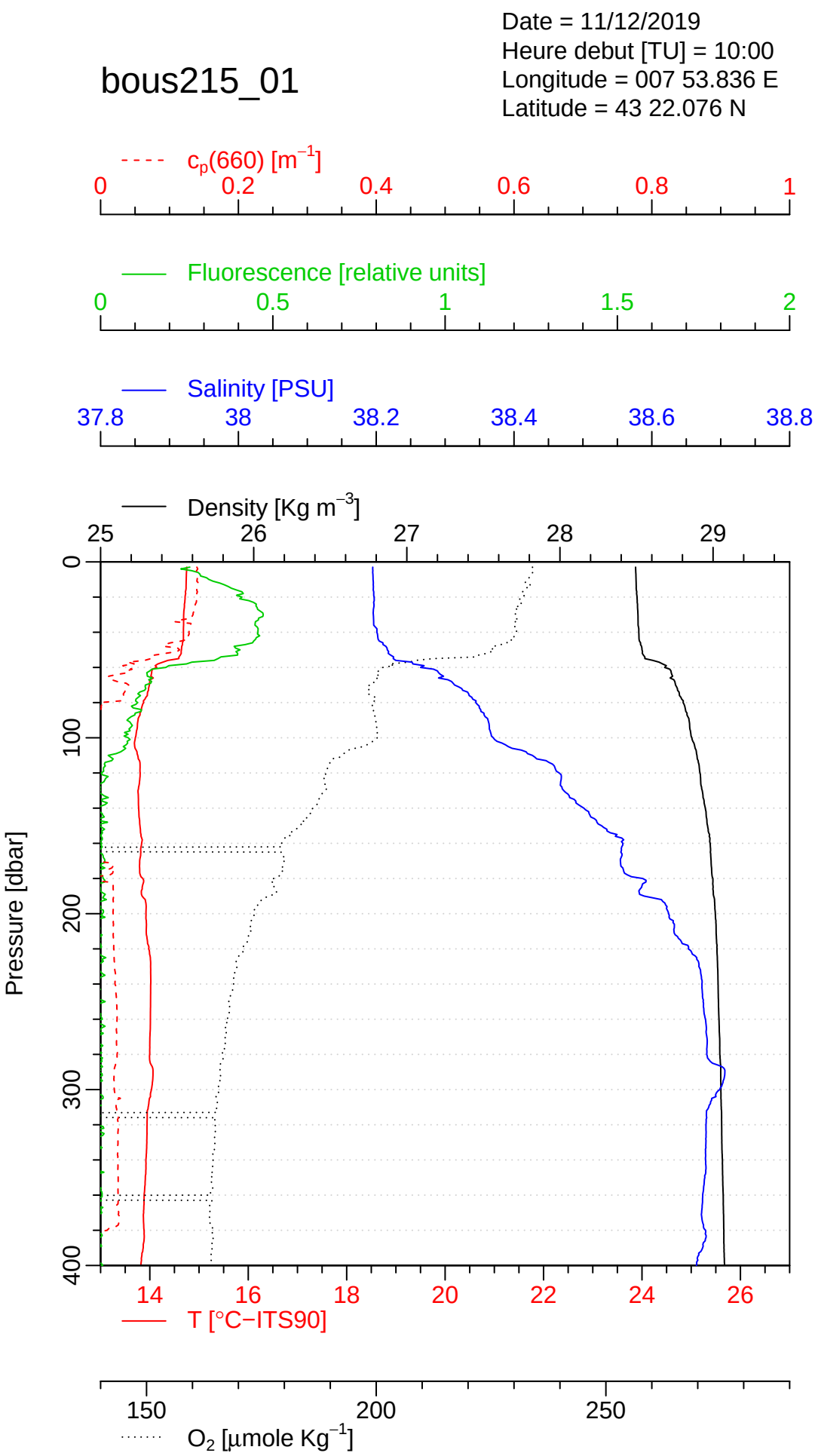
```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

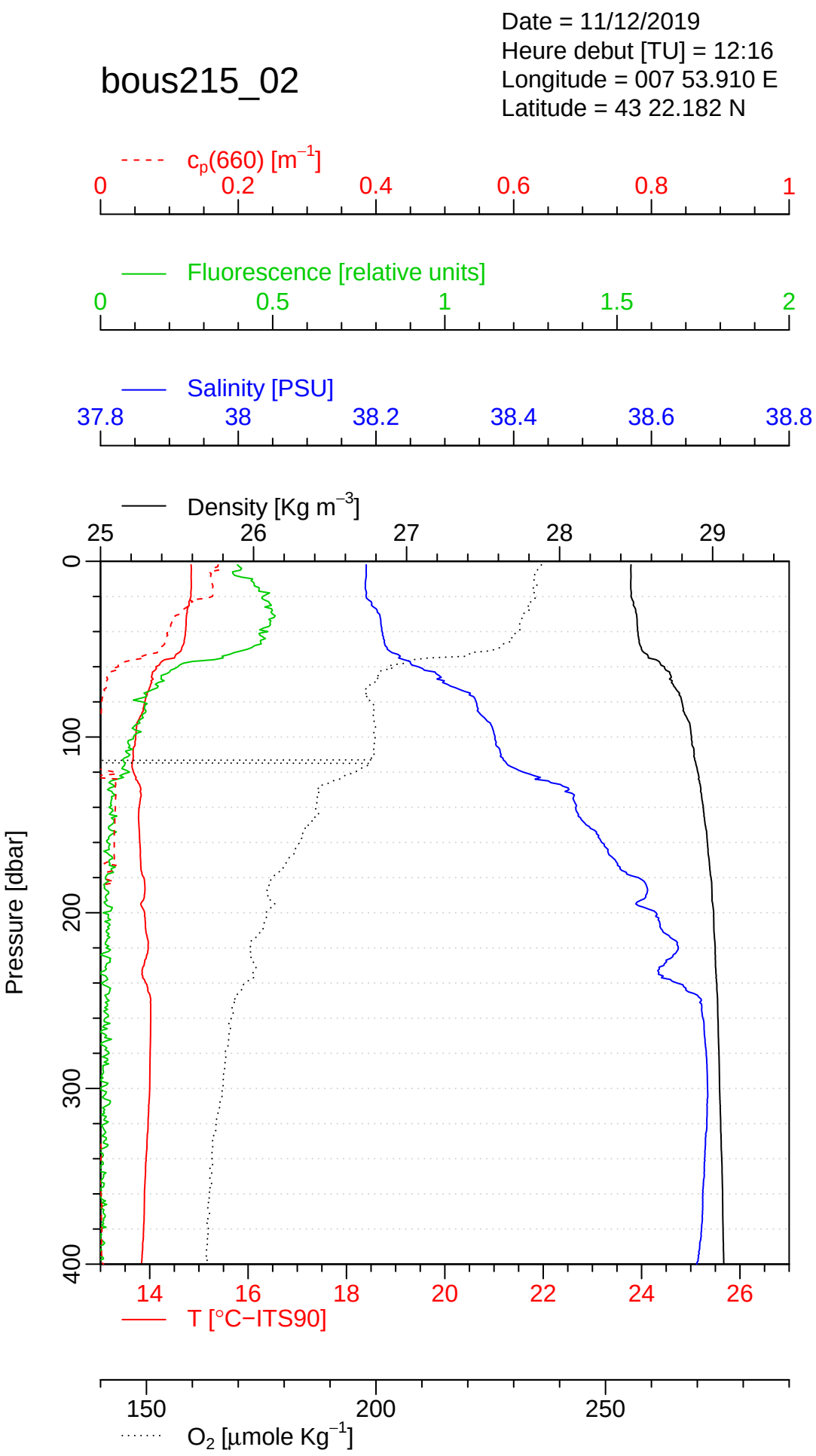
4) A/D voltage 0, Oxygen, SBE 43

```
   Serial number : 0587
   Calibrated on : 22-May-19
   Equation      : Sea-Bird
   Soc           : 3.68480e-001
   Offset        : -6.77900e-001
   A             : -4.19030e-003
   B             : 1.84280e-004
   C             : -3.04220e-006
   E             : 3.60000e-002
   Tau20         : 1.11000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, Fluorometer, Chelsea Aqua 3

   Serial number : 088-193
   Calibrated on : 11-jul-2019
   VB            : 0.406700
   V1            : 1.761800
   Vacetone      : 0.683330
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : -0.320000

7) A/D voltage 3, Transmissometer, WET Labs C-Star

   Serial number : CST-887DR
   Calibrated on : oct2019
   M             : 21.0426
   B             : -0.2946
   Path length   : 0.250

8) A/D voltage 4, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

9) A/D voltage 5, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```


BOUSSOLE #215
December 2019
7°00'E
7°15'E
7°30'E
7°45'E
8°00'E
44°00'N
43°45'N
43°30'N
43°15'N
43°00'N
-100
-250
-500
-1000
-2000
Dyfamed
ODAS
BOUSSOLE
7°51'E
7°54'E
7°57'E
43°24'N
43°21'N
BOUS215_02
BOUS215_01
11 12 2019
11 12
GMT 2020 Feb 01 04:47:50


bous215_01
Date = 11/12/2019
Heure debut [TU] = 10:00
Longitude = 007 53.836 E
Latitude = 43 22.076 N
c_p(660) [m^-1]
0
0.2
0.4
0.6
0.8
1
Fluorescence [relative units]
0
0.5
1
1.5
2
Salinity [PSU]
37.8
38
38.2
38.4
38.6
38.8
Density [Kg m^-3]
25
26
27
28
29
Pressure [dbar]
0
100
200
300
400
14
16
18
20
22
24
26
T [°C−ITS90]
150
200
250
O2 [µmole Kg^-1]


bous215_02
Date = 11/12/2019
Heure debut [TU] = 12:16
Longitude = 007 53.910 E
Latitude = 43 22.182 N
c_p(660) [m^-1]
0 0.2 0.4 0.6 0.8 1
Fluorescence [relative units]
0 0.5 1 1.5 2
Salinity [PSU]
37.8 38 38.2 38.4 38.6 38.8
Density [Kg m^-3]
25 26 27 28 29
Pressure [dbar]
0 100 200 300 400
14 16 18 20 22 24 26
T [°C−ITS90]
150 200 250
O2 [µmole Kg^-1]

Date: 02/21/2020

Instrument configuration file: C:\boussole\Data\CTD\data&process\2019\B215\raw\BOUS 215_01.XMLCON

Configuration report for SBE 911plus/917plus CTD

```
Frequency channels suppressed : 2
Voltage words suppressed      : 0
Computer interface            : RS-232C
Deck unit                     : SBE11plus Firmware Version >= 5.0
Scans to average              : 1
NMEA position data added      : Yes
NMEA depth data added         : No
NMEA time added               : No
NMEA device connected to      : deck unit
Surface PAR voltage added     : No
Scan time added               : No
```

1) Frequency 0, Temperature

```
   Serial number : 2473
   Calibrated on : 15-Mar-18
   G             : 4.36735292e-003
   H             : 6.43354202e-004
   I             : 2.35222608e-005
   J             : 2.26240163e-006
   F0            : 1000.000
   Slope         : 1.00000000
   Offset        : 0.0000
```

2) Frequency 1, Conductivity

```
   Serial number : 2929
   Calibrated on : 17-Jul-18
   G             : -1.06004078e+001
   H             : 1.42062438e+000
   I             : 3.95075512e-004
   J             : 4.20648779e-005
   CTcor         : 3.2500e-006
   CPcor         : -9.57000000e-008
   Slope         : 1.00000000
   Offset        : 0.00000
```

3) Frequency 2, Pressure, Digiquartz with TC

```
   Serial number : 0294
   Calibrated on : 22-Feb-13
   C1            : -4.258473e+004
   C2            : 1.874931e-001
   C3            : 1.368020e-002
   D1            : 3.936700e-002
   D2            : 0.000000e+000
   T1            : 3.021404e+001
   T2            : -2.815189e-004
   T3            : 4.591050e-006
   T4            : 1.633320e-009
   T5            : 0.000000e+000
   Slope         : 0.99982000
   Offset        : -1.63630
   AD590M        : 1.145000e-002
   AD590B        : -8.133300e+000
```

4) A/D voltage 0, Oxygen, SBE 43

```
   Serial number : 0587
   Calibrated on : 22-May-19
   Equation      : Sea-Bird
   Soc           : 3.68480e-001
   Offset        : -6.77900e-001
   A             : -4.19030e-003
   B             : 1.84280e-004
   C             : -3.04220e-006
   E             : 3.60000e-002
   Tau20         : 1.11000e+000
```

```
   D1            : 1.92634e-004
   D2            : -4.64803e-002
   H1            : -3.30000e-002
   H2            : 5.00000e+003
   H3            : 1.45000e+003

5) A/D voltage 1, Free

6) A/D voltage 2, Fluorometer, Chelsea Aqua 3

   Serial number : 088-193
   Calibrated on : 11-jul-2019
   VB            : 0.406700
   V1            : 1.761800
   Vacetone      : 0.683330
   Scale factor  : 1.000000
   Slope         : 1.000000
   Offset        : -0.320000

7) A/D voltage 3, Transmissometer, WET Labs C-Star

   Serial number : CST-887DR
   Calibrated on : oct2019
   M             : 21.0426
   B             : -0.2946
   Path length   : 0.250

8) A/D voltage 4, User Polynomial

   Serial number : 171
   Calibrated on : 19May2014
   Sensor name   : RINKOIII_DO
   A0            : 0.00000000
   A1            : 1.00000000
   A2            : 0.00000000
   A3            : 0.00000000

9) A/D voltage 5, User Polynomial, 2

   Serial number : 171
   Calibrated on : 12May2014
   Sensor name   : RINKOIII_Temp
   A0            : -5.25367500
   A1            : 16.66254000
   A2            : -2.13105300
   A3            : 0.45564880

10) A/D voltage 6, Altimeter

    Serial number : 310799
    Calibrated on : 19-Oct-16
    Scale factor  : 15.000
    Offset        : 0.000

11) A/D voltage 7, Free

Scan length                   : 31
```

Problems identified during the cruises

BOUSSOLE #204
The cruise was cancelled because of a mechanical failure on the R/V *Téthys II*. Repairs could not be completed in time for our cruise to be carried out. Therefore, the cruise was postponed to February 2nd and 3rd. At that time, the *Téthys II* was eventually back on duty. The cruise was unfortunately cancelled again because of bad weather.

BOUSSOLE #205
The first day, during the CTD 02 cast, the IOP package was unfortunately not turned on. So, it was decided to perform a third CTD cast with water sampling by ensuring that the IOP package is turned on.

BOUSSOLE #206
During the CTD 02 cast, the IOP package was unfortunately not turned on. It was the cast with a cap on the HS-6. So there will not be dark measurements of the backscattering meter acquired during this cruise.

BOUSSOLE #207
CTD03: The HPLC & a_p filtrations for the surface samples took a long time because there was a leak in the filtration system. The leak was found and the system repaired.

BOUSSOLE #208
No problems.

BOUSSOLE#209
CTD 01: During the ascent of the CTD, the pump functioned incorrectly between 400 and 250 m.

CTD 01: 2 Niskin bottles were inadvertently closed at 30 m, so there was not enough Niskin to sample at 5 m depth. Nevertheless, water sample at 5 m depth was collected during CTD 02.

The C-Star transmissometer of the CTD package was not available because the instrument was sent to Seabird – WET Labs for calibration. The instrument was not returned in time for this cruise.

BOUSSOLE#210
Failure of the conductivity sensor and pump of the CTD was detected for all the CTD casts:

The first day, a CTD cast was attempted but failed because the conductivity sensor was not functioning. Many tests were performed. First, the cable and connections between the conductivity sensor and the CTD were checked and cleaned, then the cable was replaced. The conductivity sensor was changed with another one. Unfortunately failure appeared also using this second conductivity sensor. However, the other CTD sensors functioned correctly (pressure, temperature, fluorimeter sensor and carousel of the Niskin), we decided to perform and to keep the CTD 01 cast. Therefore, we suspected a failure on the CTD, we returned to the lab after the first day in order to bring our spare CTD and we used it for the CTD 02 and CTD 03 cast. Another conductivity sensor was used. These casts were better than the CTD 01 cast but the problem was not solved entirely: the downcasts were ok but during the upcasts, the conductivity sensor functioned incorrectly between 400 m and 300 m depth. As the previous day, the other sensors functioned correctly. We then suspected a failure on the pump: the pump and its cable were replaced the last day before the DYFAMED deep cast, but the same issue was detected during the ascent of the CTD.
So the problem could originate from the electrocarrier cable of the ship. We will ask the crew for testing it during the next cruise.

The C-Star transmissometer of the CTD package was not available because the instrument was sent to *Seabird – WET Labs* for calibration. The instrument was not returned in time for this cruise.

BOUSSOLE#211
For all CTD casts, failure on the conductivity sensor and pump were detected between 200 and 400 m depth, as during the previous cruise. We did not solve this problem for the moment. It seems to be an obvious power issue, but we could not find its origin or how to address it. A technical report was written by Eduardo Soto, the engineer

responsible for the CTDs of BOUSSOLE cruises, and was sent to Seabird for assistance. This document is attached to this cruise report.

CTD 02: the Niskin bottle#4 was not closed, so there was no sample at 80 m depth.

CTD 03: 2 superimposed filters were used inadvertently for the HPLC filtration of the 150 m sample. The two filters were kept for the lab analyses.

The TSM sampling container was forgotten in the lab. So the triplicates were sampled directly in the 3 polycarbonate bottles after homogenization of the sample in the Niskin bottle.

The C-Star transmissometer of the CTD package was not available because the instrument was sent to Seabird – WET Labs for calibration. The instrument was not returned in time for this cruise.

BOUSSOLE #212

For all CTD casts, failures on the conductivity sensors and the pump were detected all along the profiles as during the previous cruises. However, one of the conductivity sensor seemed to work better than the other. After the cruise, all the conductivity sensors were tested in the bay of Villefranche and it appeared that only one of our three sensors is functioning. This sensor (S/N 2929) was installed on the CTD and used a few days after this BOUSSOLE cruise during a teaching mission on the *Téthys II*. For all the casts, the CTD functioned correctly and no failures were detected. The two faulty sensors were sent to Seabird for diagnostic and repair.

However, the IOP package, which is deployed simultaneously to the CTD-rosette, includes a SBE 49 FastCat CTD, the T&S data of which could be used as an alternative solution.

The C-Star transmissometer of the CTD package was not available because the instrument was sent to *Seabird – WET Labs* for calibration. The instrument was not returned in time for this cruise.

BOUSSOLE #213

The BOUSSOLE cruise was cancelled due to the passing of Didier Le Meur, member of the ship crew. Didier had joined the DT INSU - CNRS in 2014 as a ship's cook. We have a special thought for him and his family and for all the colleagues who have worked with him during oceanographic cruises.

BOUSSOLE #214

There were problems of communication with the CTD. It was due to a bad contact between connections of the deck unit and the computer, so the communication with the CTD failed. The cables and connections were cleaned and the communication with the CTD restored.

Bad weather limited the time available for work, so that the CTD cast including a 0.2 µm filter on the inlet tube of the a-Sphere for the dissolved matter absorption measurements could not be performed during this cruise.

The weather station of the Téthys II did not function correctly. There were missing parameters (air temperature and hygrometry).

BOUSSOLE #215

CTD 01: The Niskin bottle #12 (5m) was empty so this depth was sampled again during CTD 02 cast

Because of a lack of time due to an unusually loaded program (BOUSSOLE and DYFAMED operations combined the same day), the CTD 02 cast was stopped only at 7 depths (400, 150, 80, 50, 30, 10 and 5m) during the ascent of the CTD.

The weather station of the *Téthys II* did not function correctly. There were missing parameters (air temperature and hygrometry).