Rapport interne LPO/13-08

UMR 6523 **Laboratoire de Physique des Océans**	**DELAYED MODE QUALITY CONTROL OF OVIDE ARGO DATA** **FLOAT WMO 5902299**	
Date : **28 mai 2013**	Auteurs : **Lagadec Catherine** **Thierry Virginie**	Archivage : **LPO**

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Carole Despinoy (ODE/LPO)

DELAYED MODE QUALITY CONTROL OF OVIDE ARGO DATA
FLOAT WMO 5902299
Internal Report LPO 13-08

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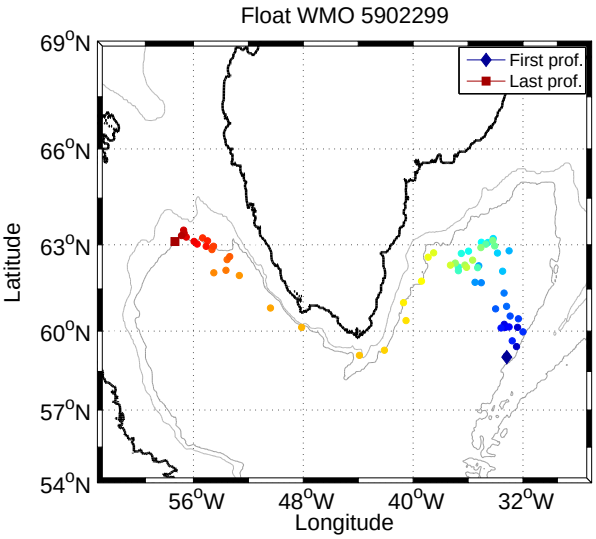
28 mai 2013



1 Presentation and DMQC summary

Number	Deployment (cycle OD) cycle OD	Last cycle 63A
Provor WMO 5902299	26/06/2010 17h25	
CTS3-DO 9	N 59.03825 W 33.185717	
Date of control	Float status	Last cycle
April 2013	DEAD	26/03/2012
Coriolis transmission		27/05/2013

Tab. 1: Status of the float

Warning : Note that all the figures are plotted with the latest QC flag values (the modifications mentionned table 2 are taken into account).

1.1 QC flag checks and interesting profiles

The resolution is equal to 10 dbar from the surface to 500 dbar, then 25 dbar from 500 to 2000 dbar. Salinity data between 0 and 6 dbar are suspicious because they are acquired when the pump of the CTD is turned off.

1.2 Salinity correction from the OW method

We cannot see any evidence of a drift or bias in the salinity measurements, only a potential bias of 0.005. We thus conclude that it is not necessary to correct the salinity data. Errors bars are maximum value between 0.01 and those determined from the OW method with parameters from the OW configuration 127 (selected data within 2 years of Argo profile date).

2 Data

Cycle	Parameter	Vertical level	Old flag	New flag	Comments	Coriolis transmission
26A	PSAL	1789 to 2015 dbar	4	1		07/01/2013
47A	TEMP	1,2,5,6,7,12,13	4	1		30/04/2013
	PSAL	5,6,7,12,13	4	1		30/04/2013
48A	TEMP	1,2	4	1		30/04/2013
49A	TEMP,PSAL	156,166 dbar	4	1		30/04/2013
52A	TEMP	66,77 dbar	4	1		30/04/2013
	PSAL	77 dbar	4	1		
53A	TEMP	76,86,96 dbar	4	1		30/04/2013
	PSAL	66 dbar	1	4	density	
	PSAL	96 dbar	4	1	inversion	
54A	TEMP	86,96 dbar	4	1		30/04/2013
	PSAL	96 dbar	4	1	density	
	PSAL	76 dbar	1	4	inversion	
55A	TEMP	96,106 dbar	4	1	density	30/04/2013
	PSAL	1066 dbar	4	1	inversion	
56A	TEMP	1,2	4	1		30/04/2013
57A	TEMP	1,2,9,10	4	1		30/04/2013
	PSAL	86 dbar	4	1	density	
	PSAL	66 dbar	1	4	inversion	
60A	TEMP	66,76 dbar	4	1	denstity	30/04/2013
	PSAL	76 dbar	4	1	inversion	
62A	TEMP	56 to 86 dbar	4	1		30/04/2013
	PSAL	86 dbar	4	1	density	
	PSAL	45 dbar	1	4	inversion	

TAB. 2: Float 5902299. Summary of the modifications of the real-time QC flags and of the interesting or suspicous data.

OW CONFIGURATION	1	3	127	371
CONFIG_MAX_CASTS	250	250	250	250
MAP_USE_PV	1	1	1	1
MAP_USE_PV_ELLIPSE	1	1	1	1
MAP_USE_FACTEUR	1	1	1	1
MAPSCALE_LONGITUDE_LARGE	3.2	3.2	3.2	0.8
MAPSCALE_LONGITUDE_SMALL	0.8	0.8	0.8	0.8
MAPSCALE_LATITUDE_LARGE	2	2	2	0.5
MAPSCALE_LATITUDE_SMALL	0.5	0.5	0.5	0.5
MAPSCALE_PHI_LARGE	0.5	0.5	0.5	0.5
MAPSCALE_PHI_SMALL	0.1	0.1	0.1	0.1
MAPSCALE_AGE	0.69	0.69	0.69	0.69
MAP_P_EXCLUDE	500	500	500	500
MAP_P_DELTA	250	250	250	250
Reference data base	CTD only	CTD only	CTD+ARGO	CTD
Comments		no break point	no break point	no break point

TAB. 3: Parameters of the OW method.

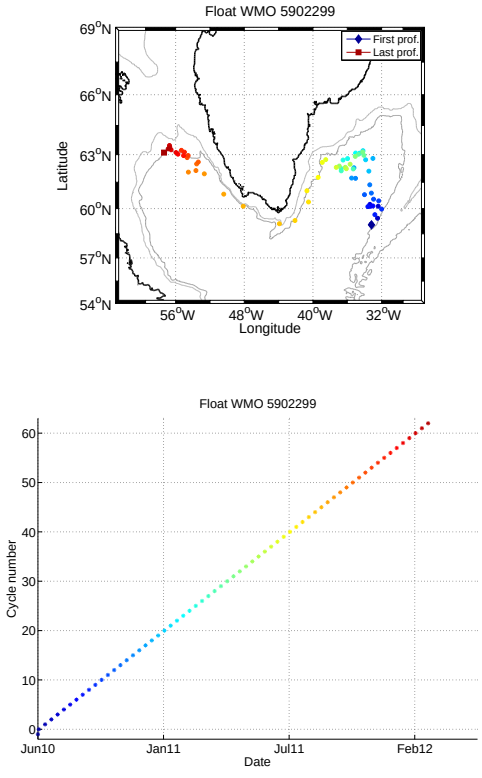


FIG. 1: Profiles position and relationship between cycle number, date and color.

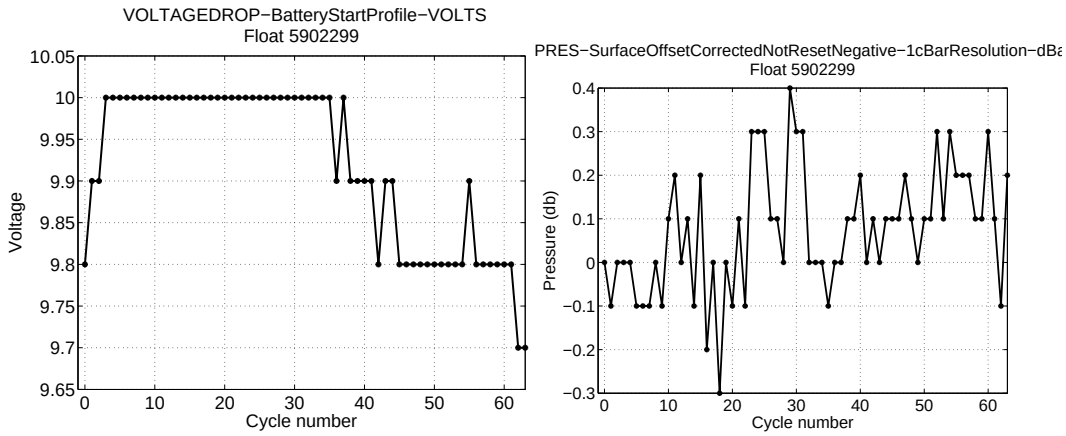


FIG. 2: Voltage battery - Surface pressure

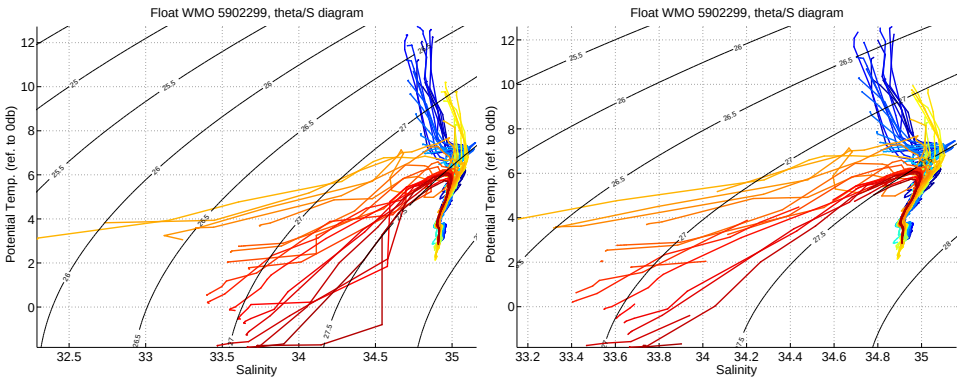


FIG. 3: θ/S diagrams. (Left panel) Flags are not taken into account. (Right panel) Quality flags are taken into account.

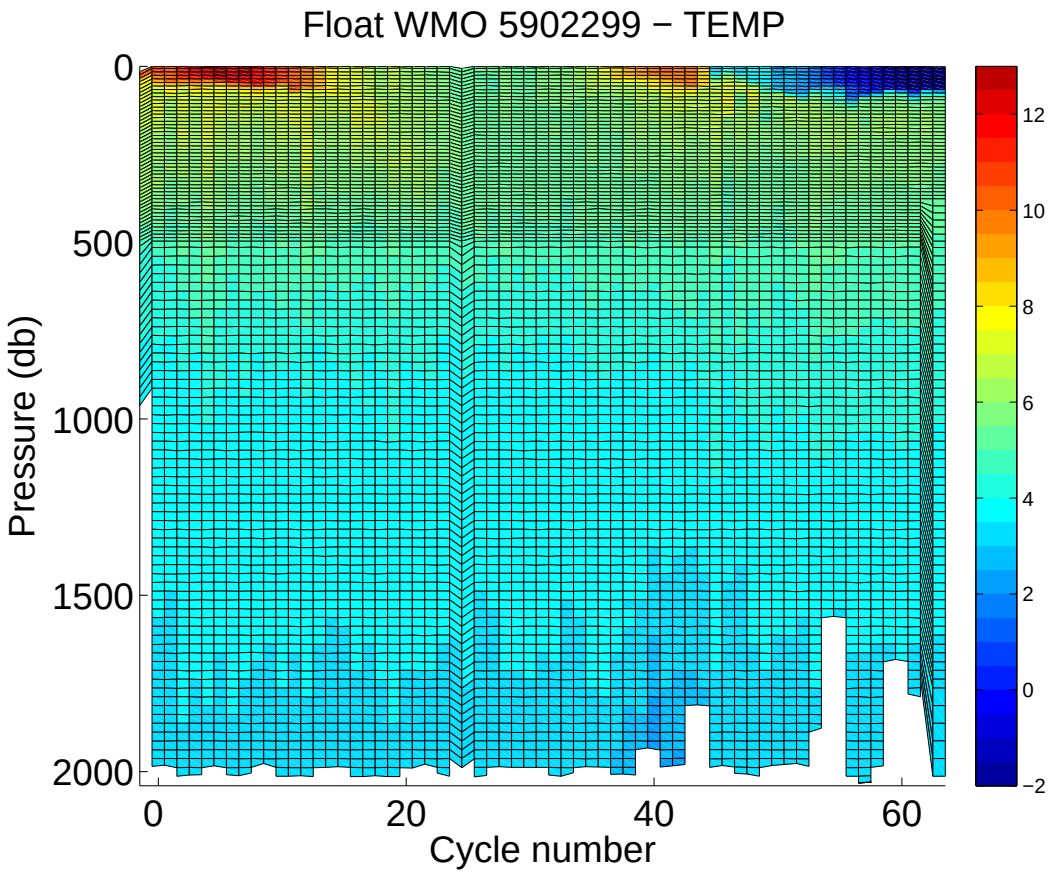


FIG. 4: Temperature section along the float trajectory. Quality flags are not taken into account.

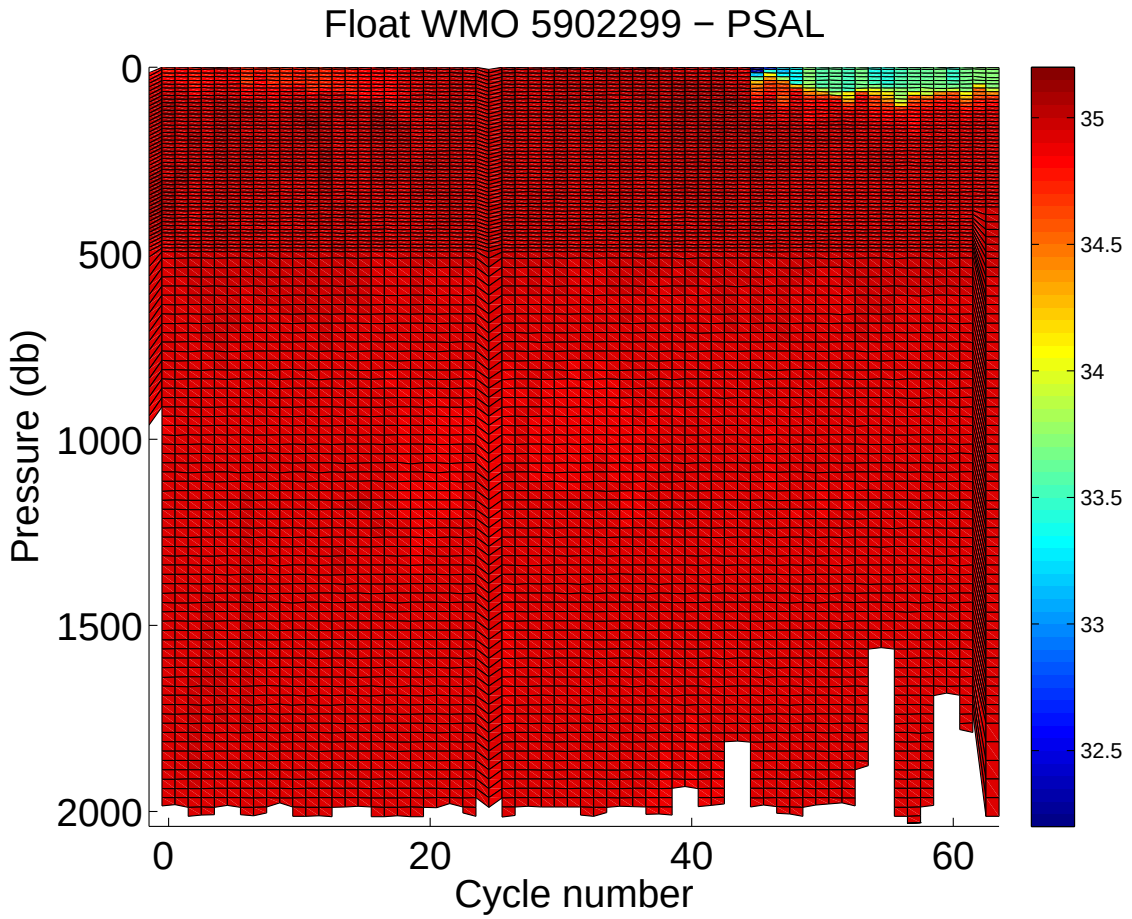


FIG. 5: Salinity section along the float trajectory. Quality flags are not taken into account.

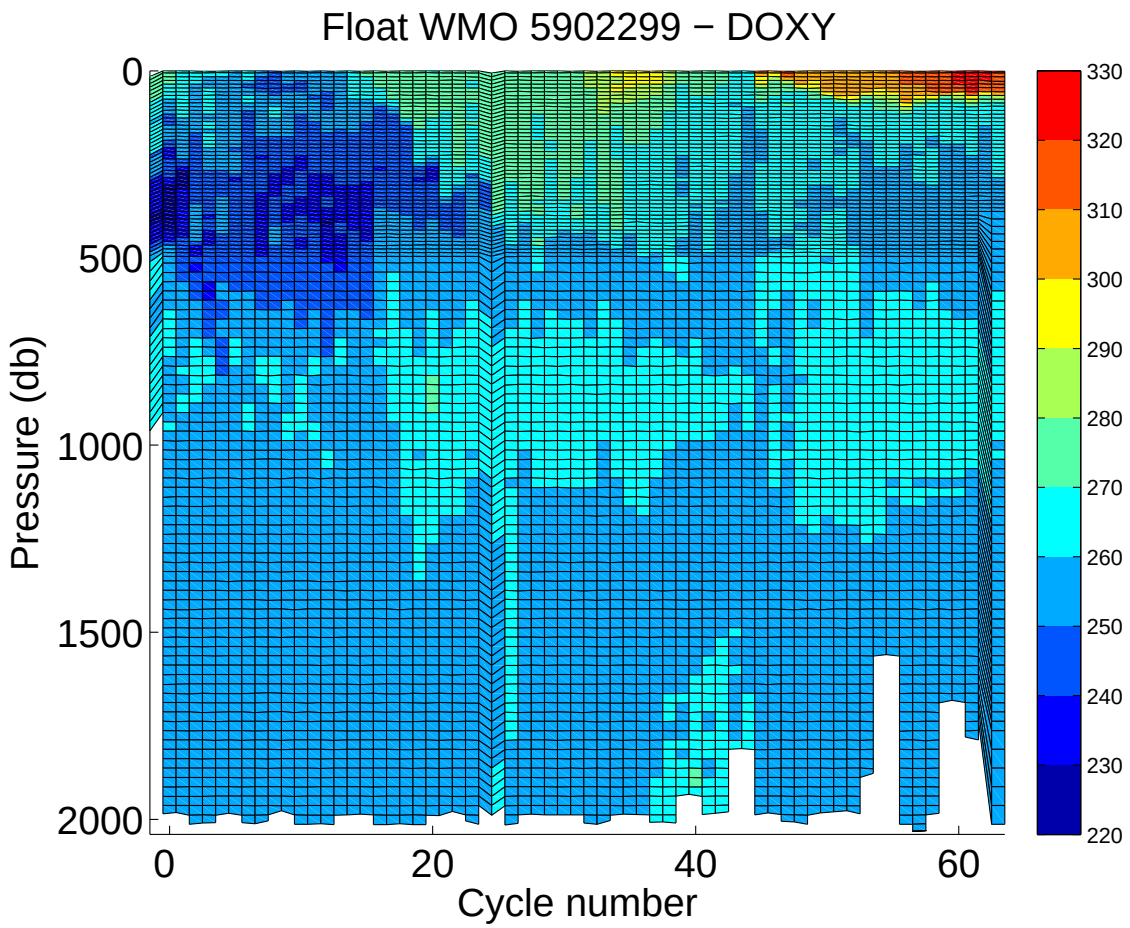


FIG. 6: Oxygen section along the float trajectory. Quality flags are not taken into account.

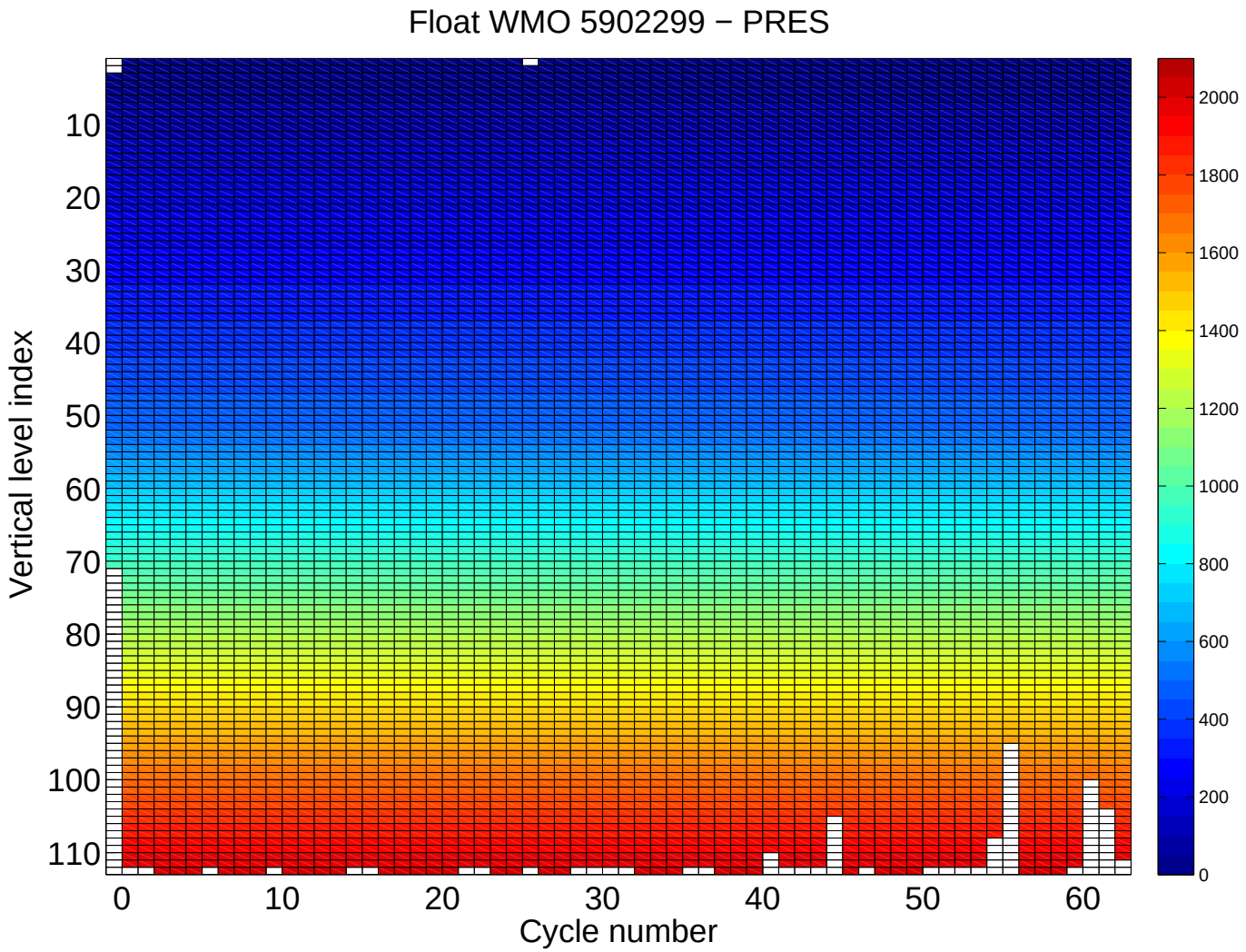


FIG. 7: Pression as fonction of cycle number and vertical level index along the float trajectory. Quality flags are taken into account.

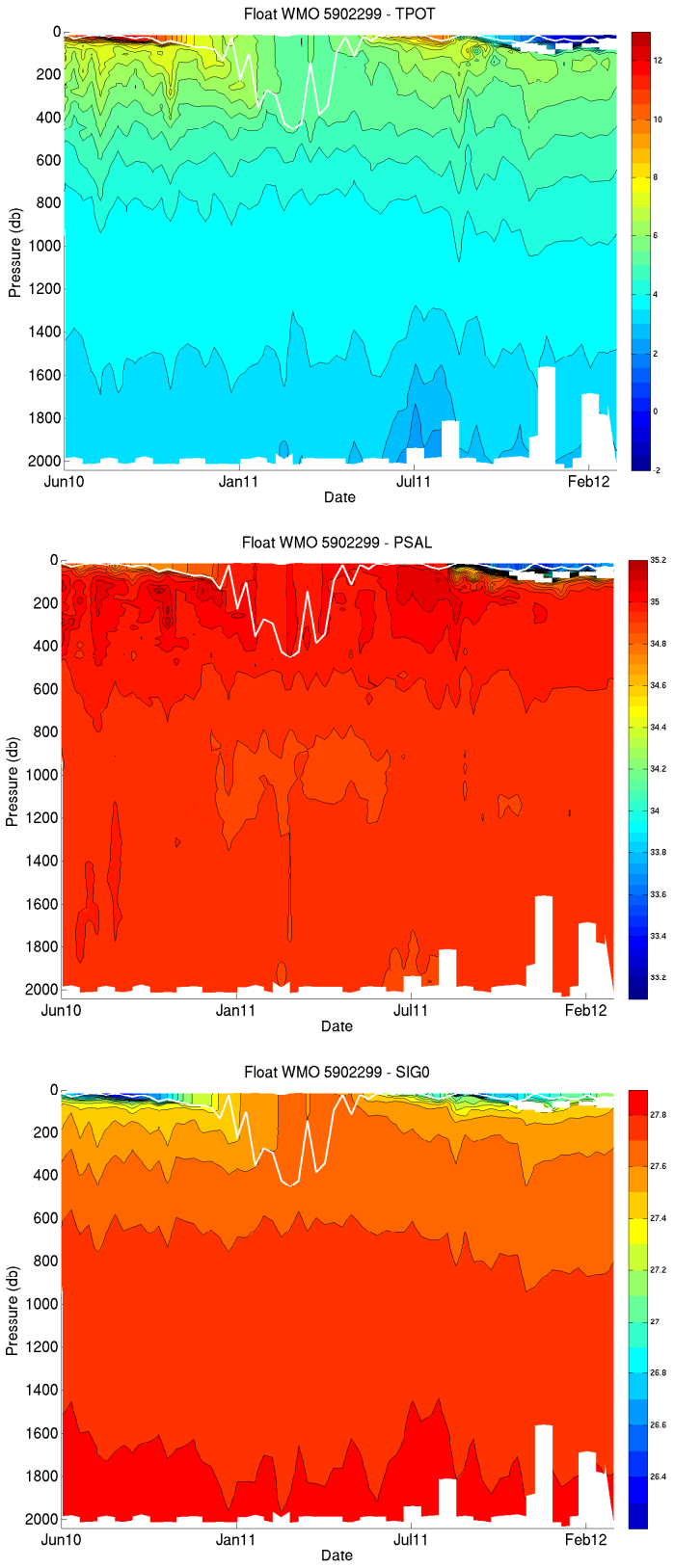


FIG. 8: Potential temperature, salinity and potential density sections along the float trajectory (interpolated on standard levels). Quality flags are taken into account.

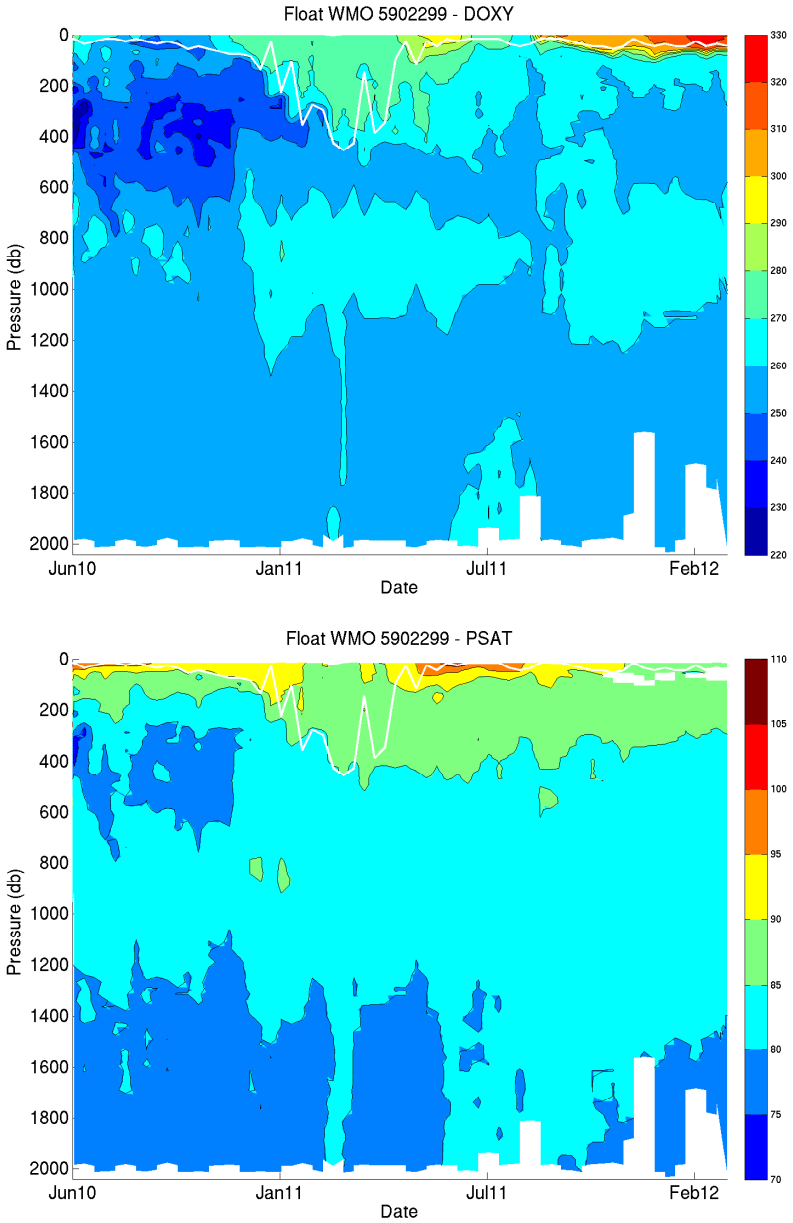


FIG. 9: Oxygen and Saturation Oxygen sections along the float trajectory (interpolated on standard levels). Quality flags are taken into account.

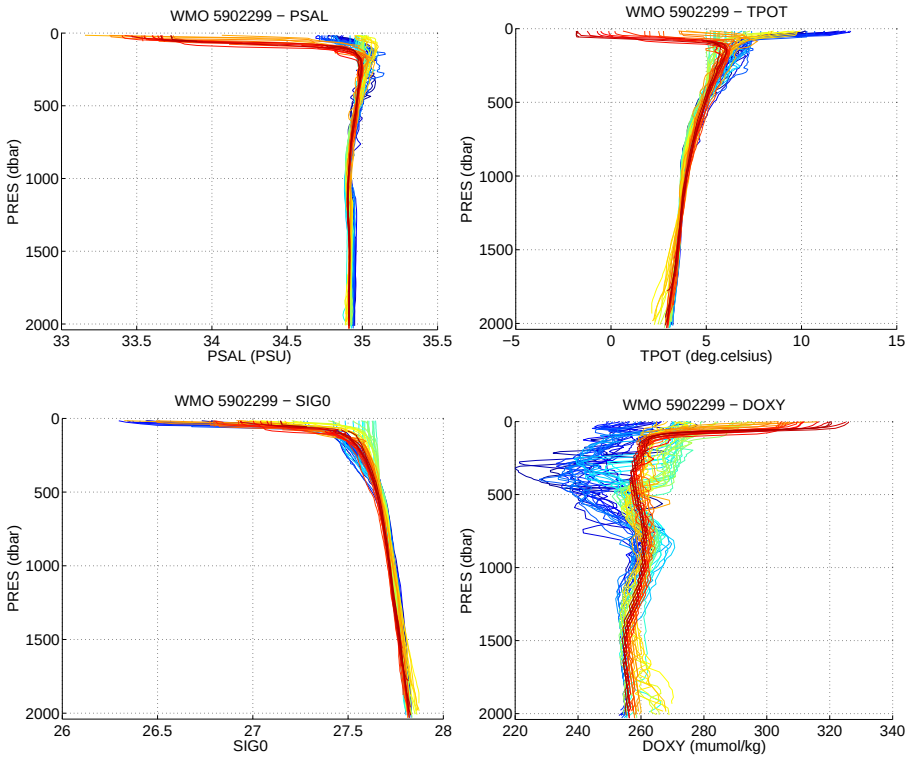


FIG. 10: Salinity, Potential Temperature, Potential Density and Oxygen profiles. Quality flags are taken into account.

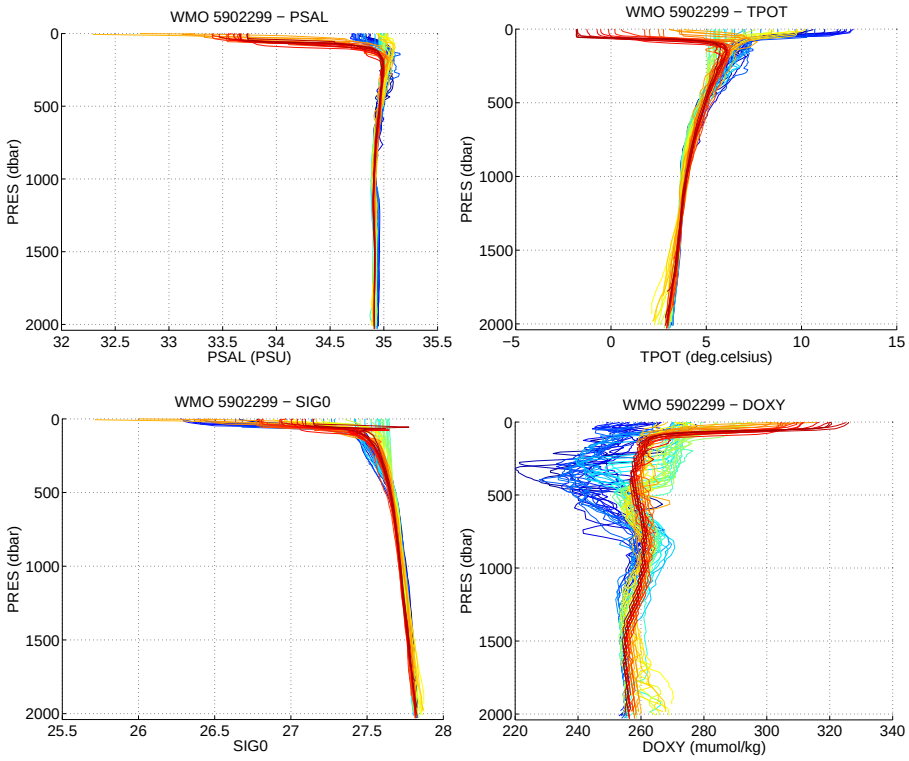


FIG. 11: Salinity, Potential Temperature, Potential Density and Oxygen profiles. Quality flags are not taken into account.

3 Comparison to the OVIDE 2010 nearest CTD profile

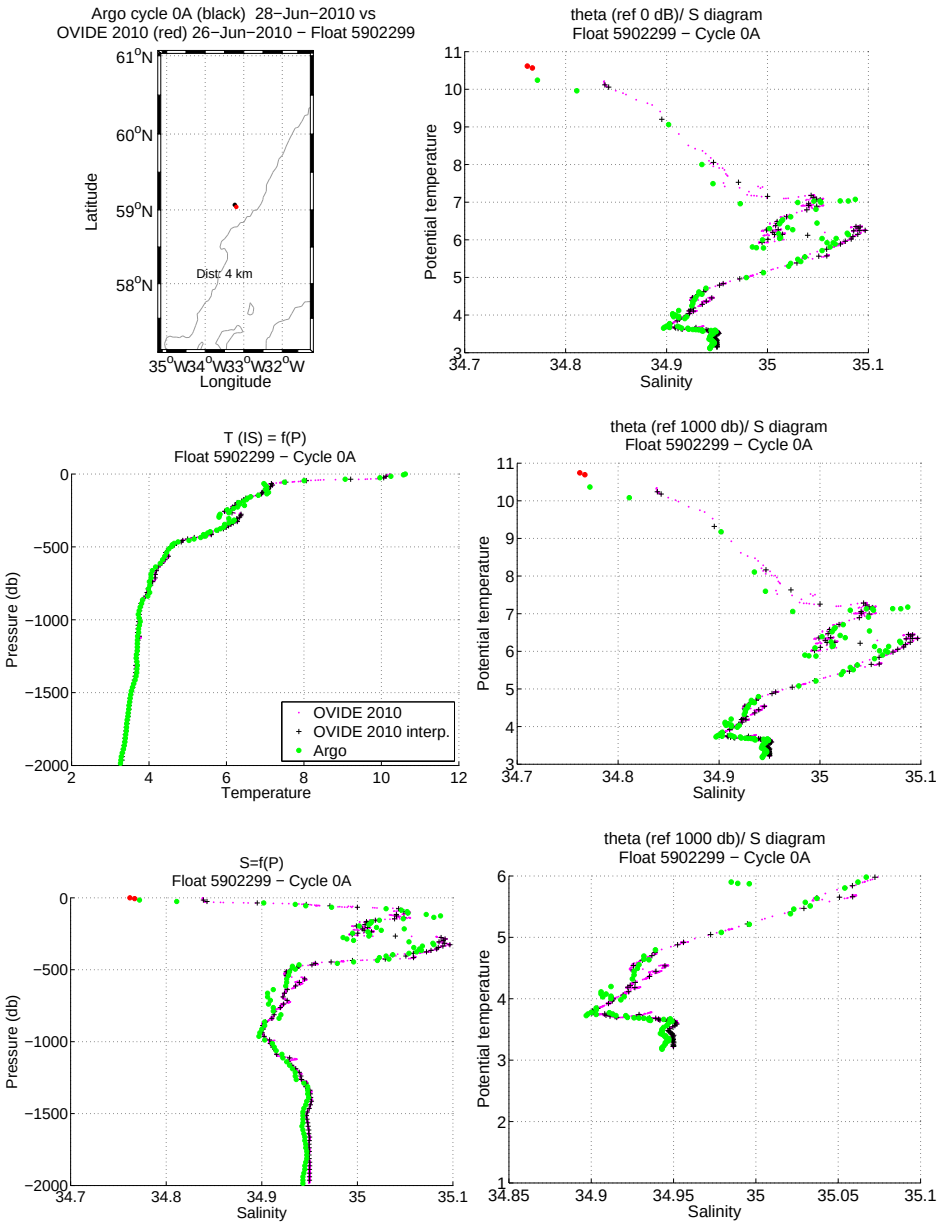


FIG. 12: Comparison of the cycle 0A with the nearest CTD profile done after the float deployment.

4 Cycle 26A - Comparaison to the nearest historical CTD profiles

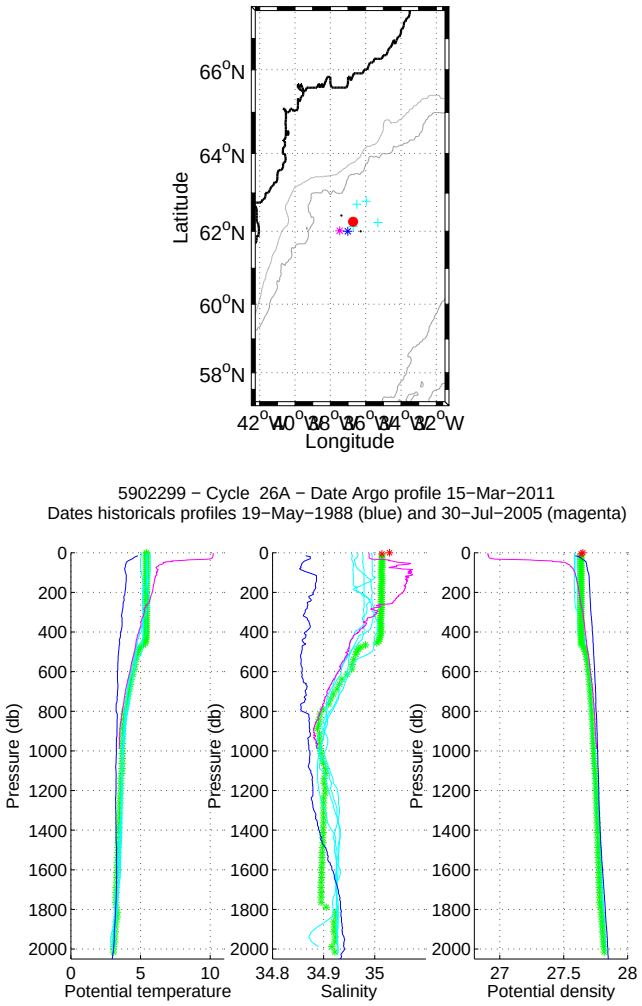


FIG. 13: Flotteur 5902299, cycle 26A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

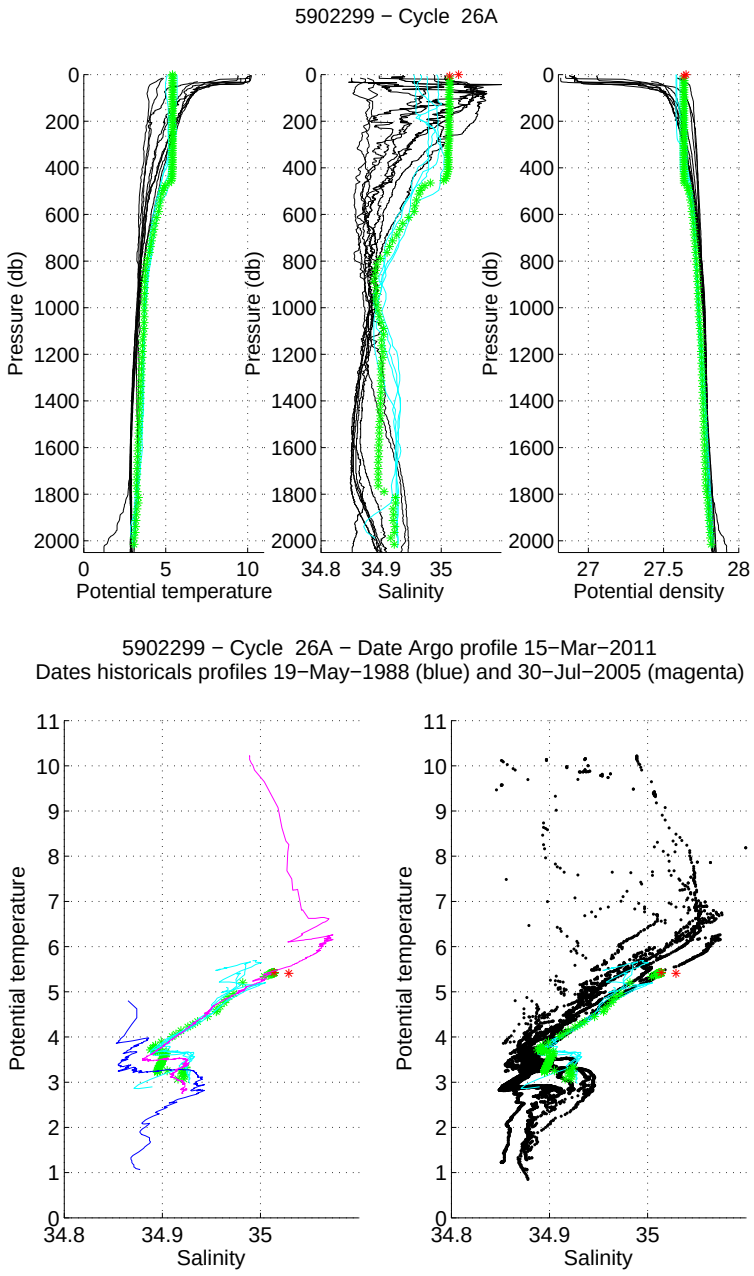


FIG. 14: Float 5902299, cycle 26A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

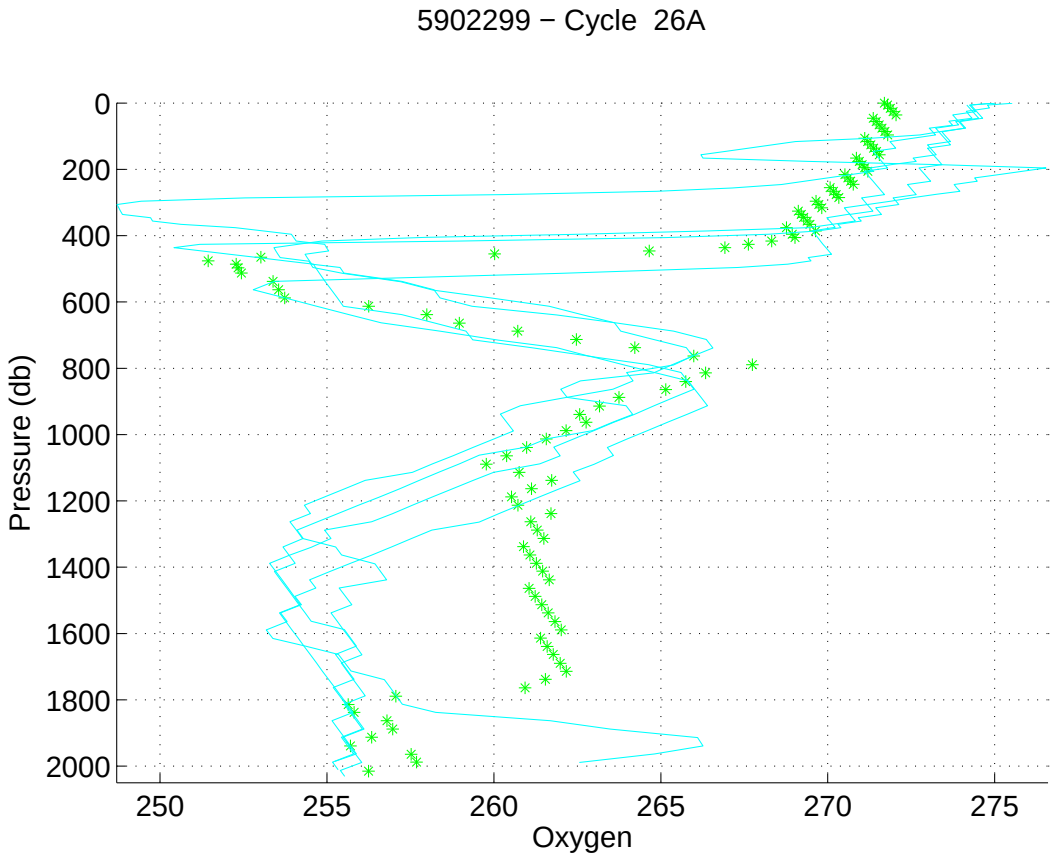


FIG. 15: Float 5902299, cycle 26A. Oxygen data.

5 Cycle 26A - Comparaison to the nearest ARGO profiles

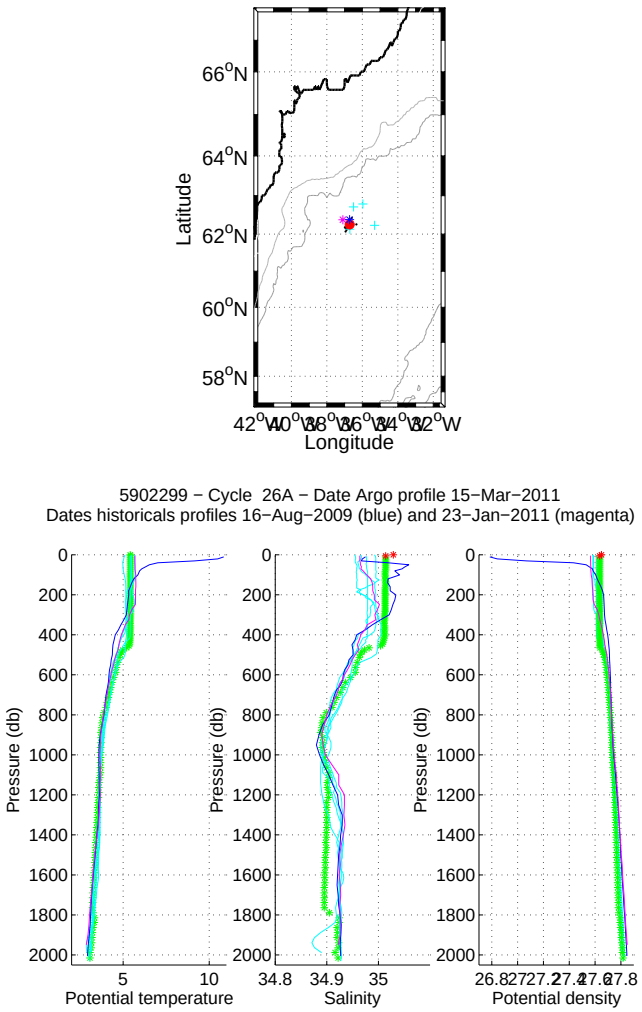


FIG. 16: Flotteur 5902299, cycle 26A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

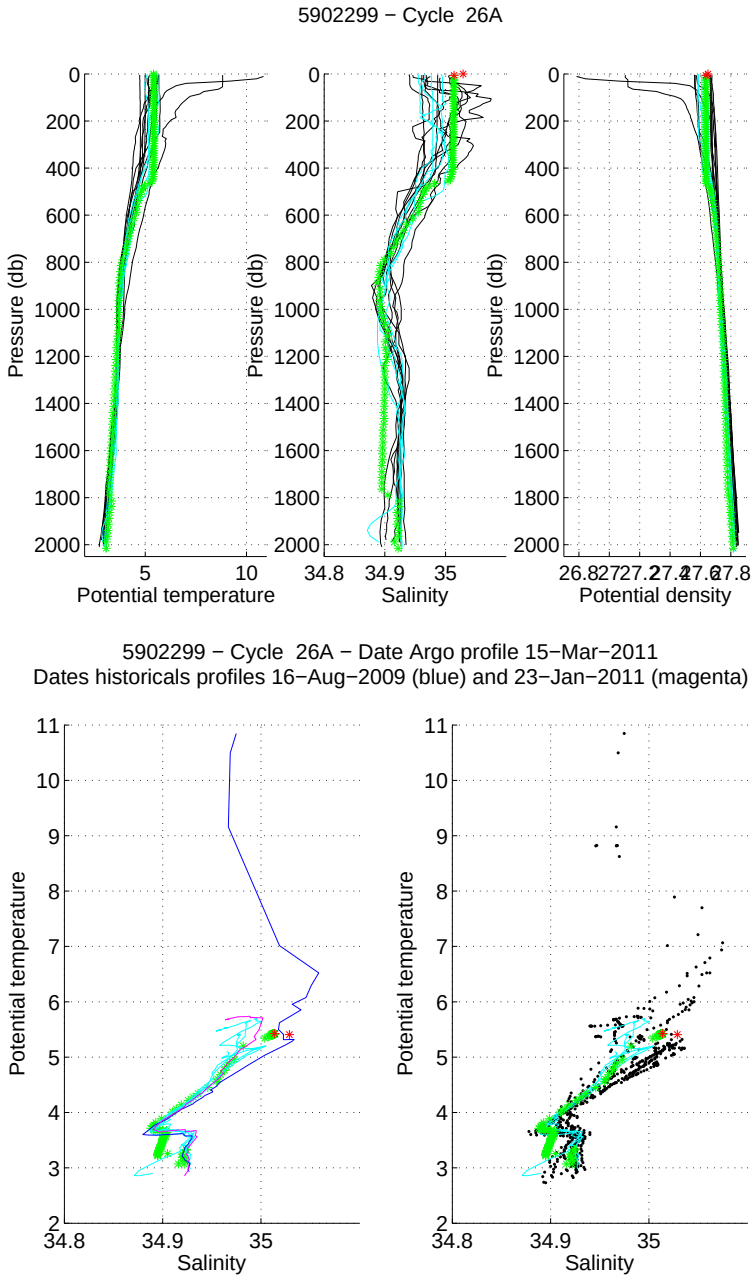


FIG. 17: Float 5902299, cycle 26A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

6 Cycle 47A - Comparaison to the nearest historical CTD profiles

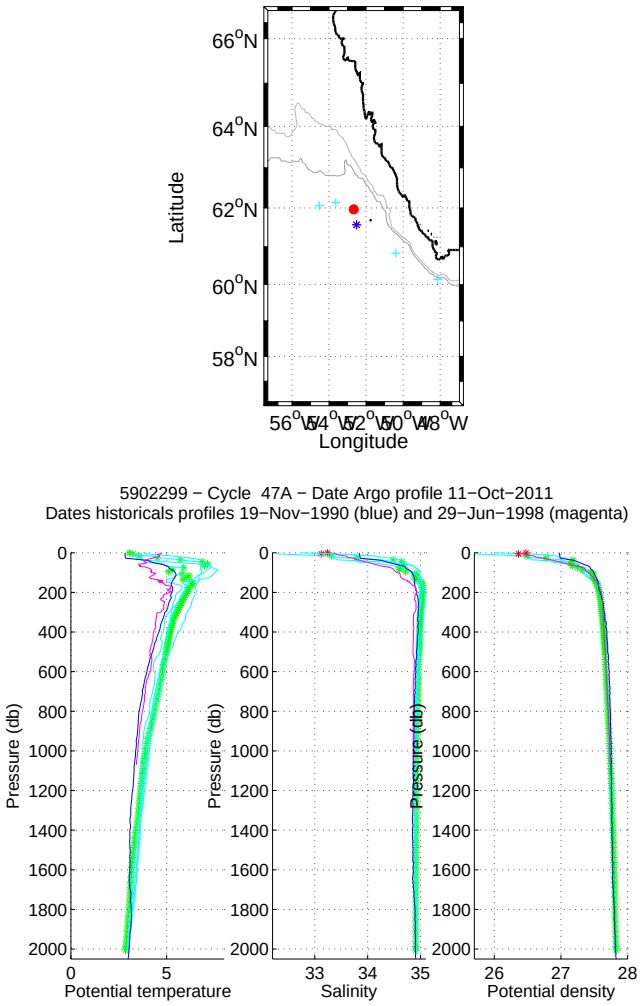


FIG. 18: Flotteur 5902299, cycle 47A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

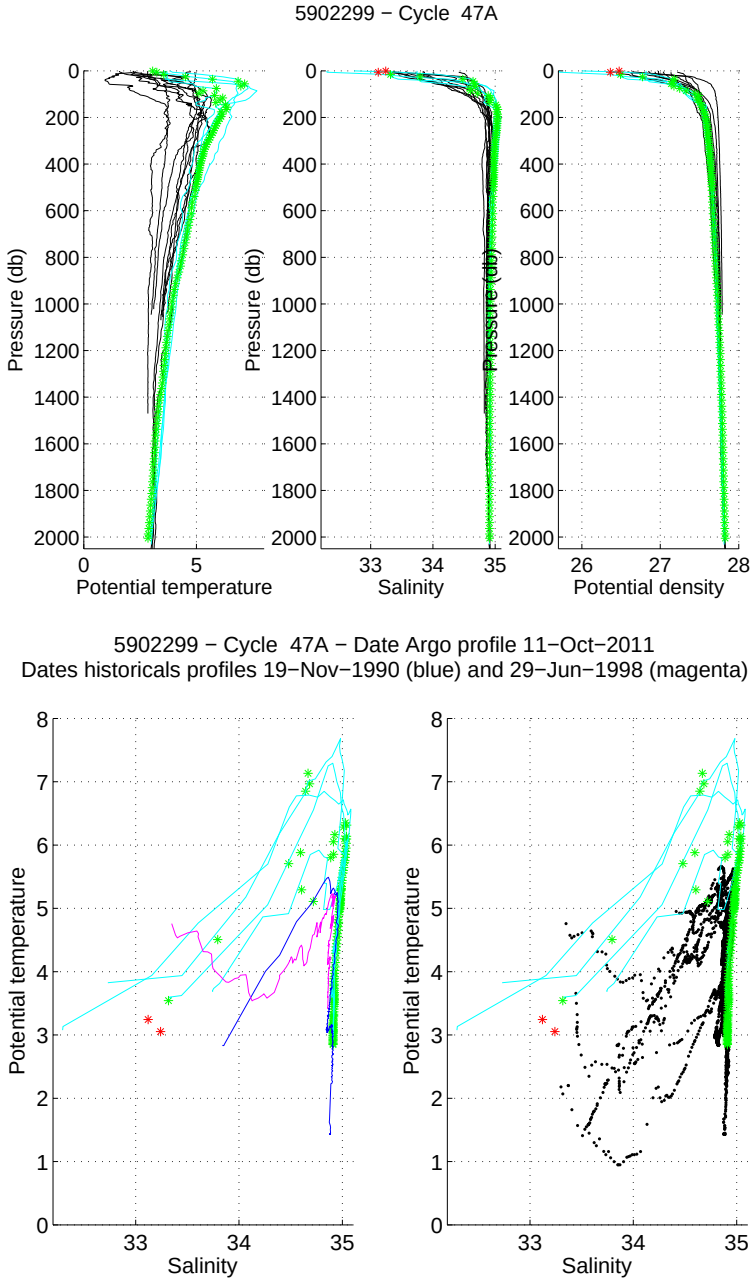


FIG. 19: Float 5902299, cycle 47A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

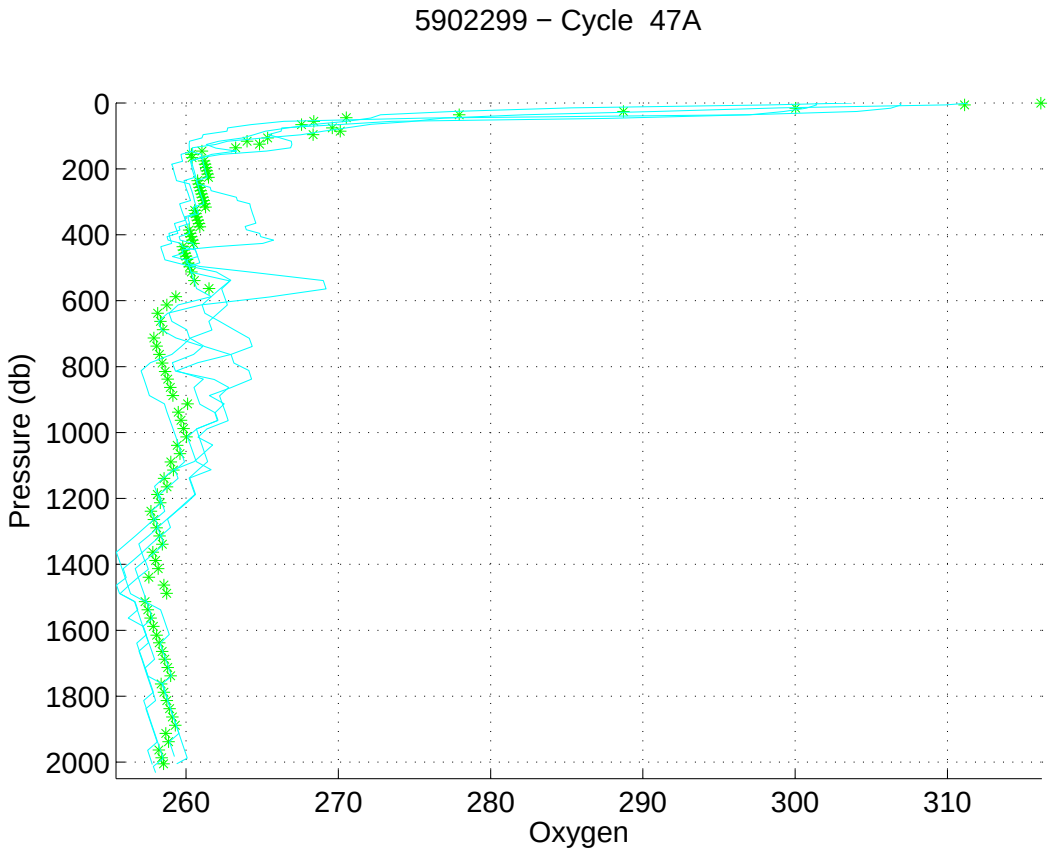


FIG. 20: Float 5902299, cycle 47A. Oxygen data.

7 Cycle 47A - Comparaison to the nearest ARGO profiles

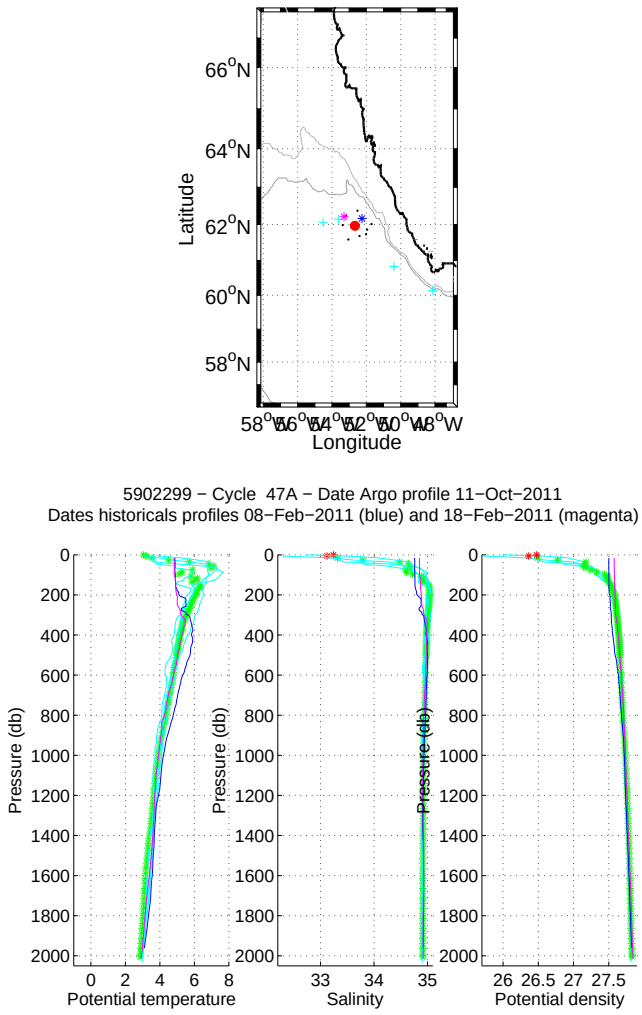


FIG. 21: Flotteur 5902299, cycle 47A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

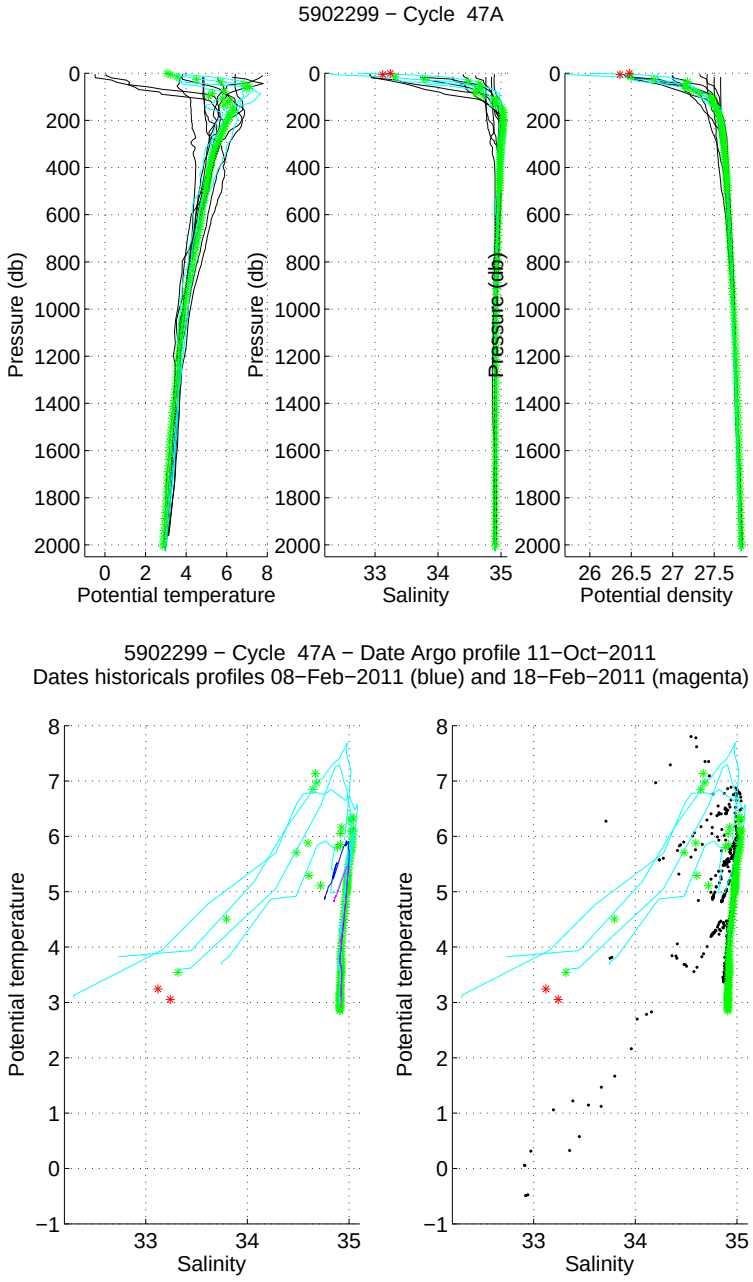


FIG. 22: Float 5902299, cycle 47A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

8 Cycle 48A - Comparaison to the nearest historical CTD profiles

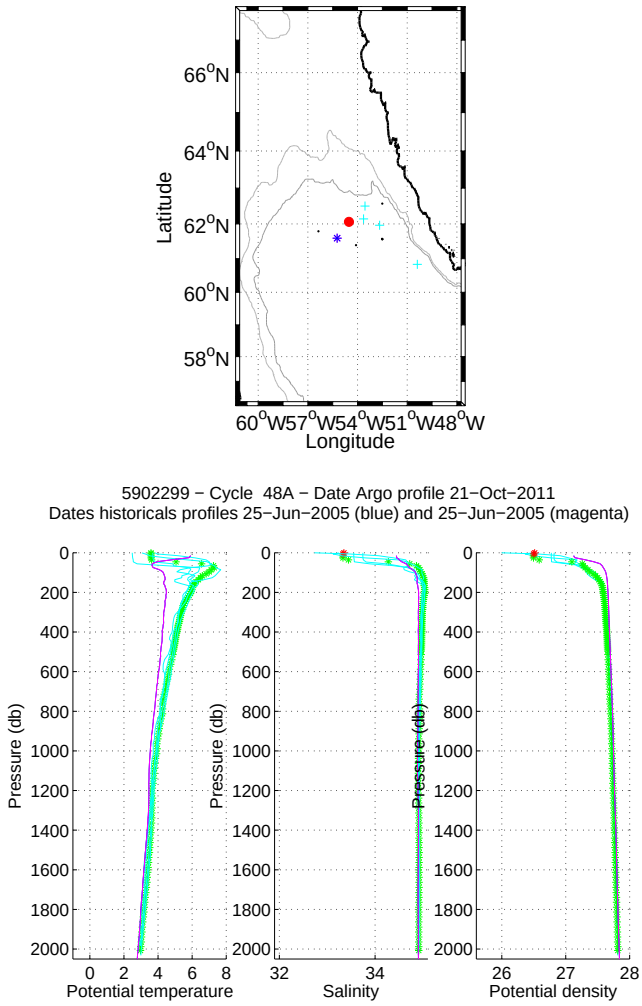


FIG. 23: Flotteur 5902299, cycle 48A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

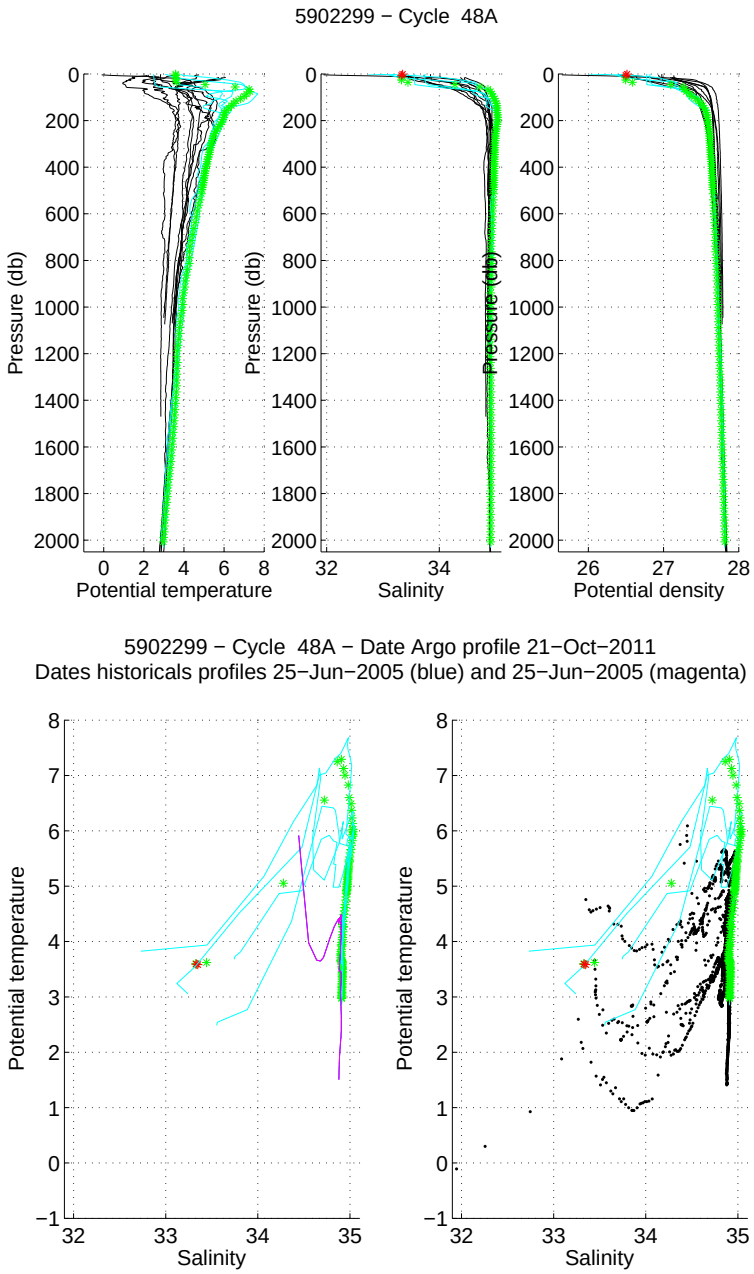


FIG. 24: Float 5902299, cycle 48A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

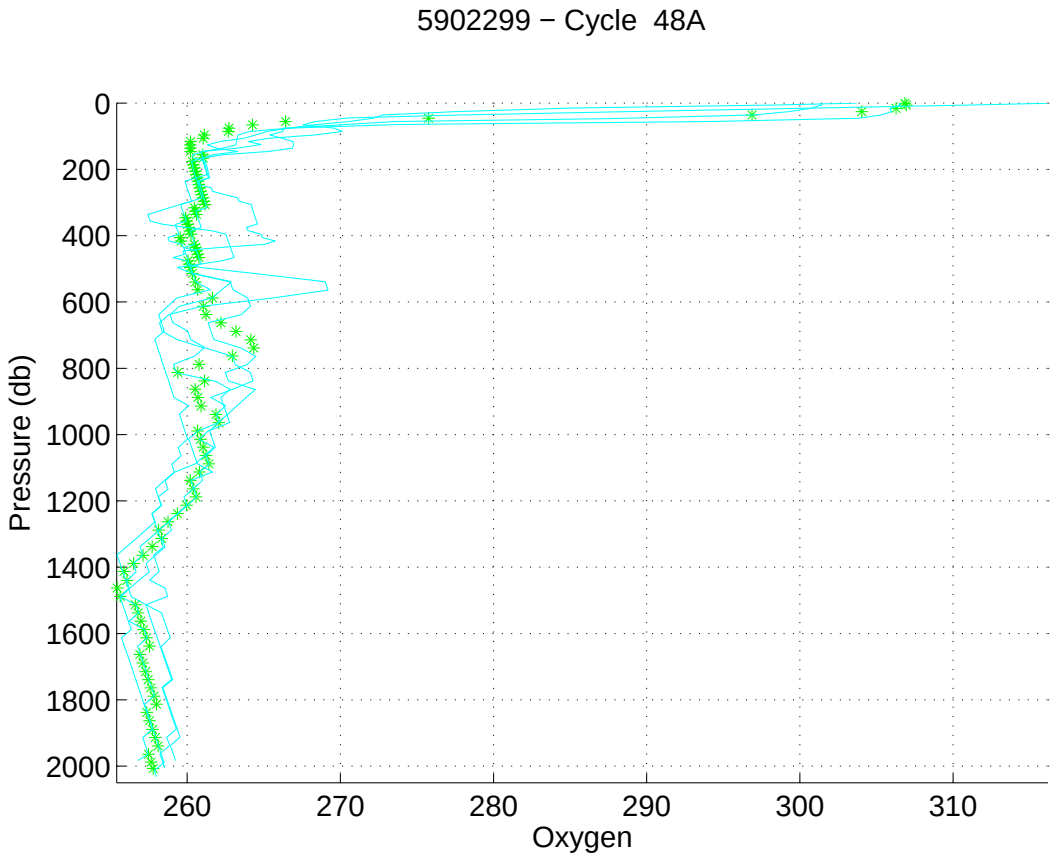


FIG. 25: Float 5902299, cycle 48A. Oxygen data.

9 Cycle 48A - Comparaison to the nearest ARGO profiles

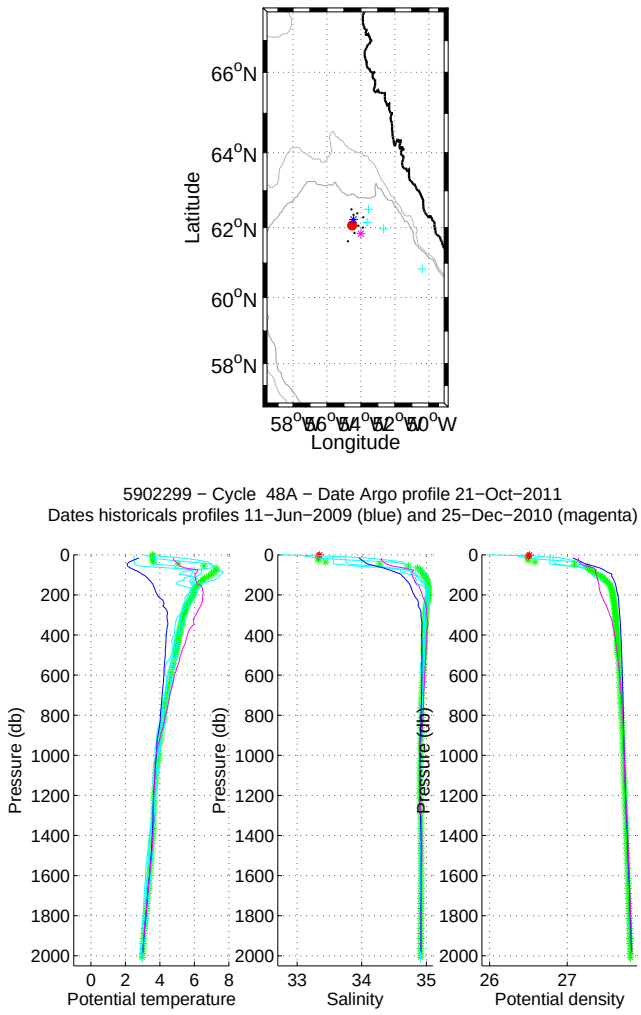


FIG. 26: Flotteur 5902299, cycle 48A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

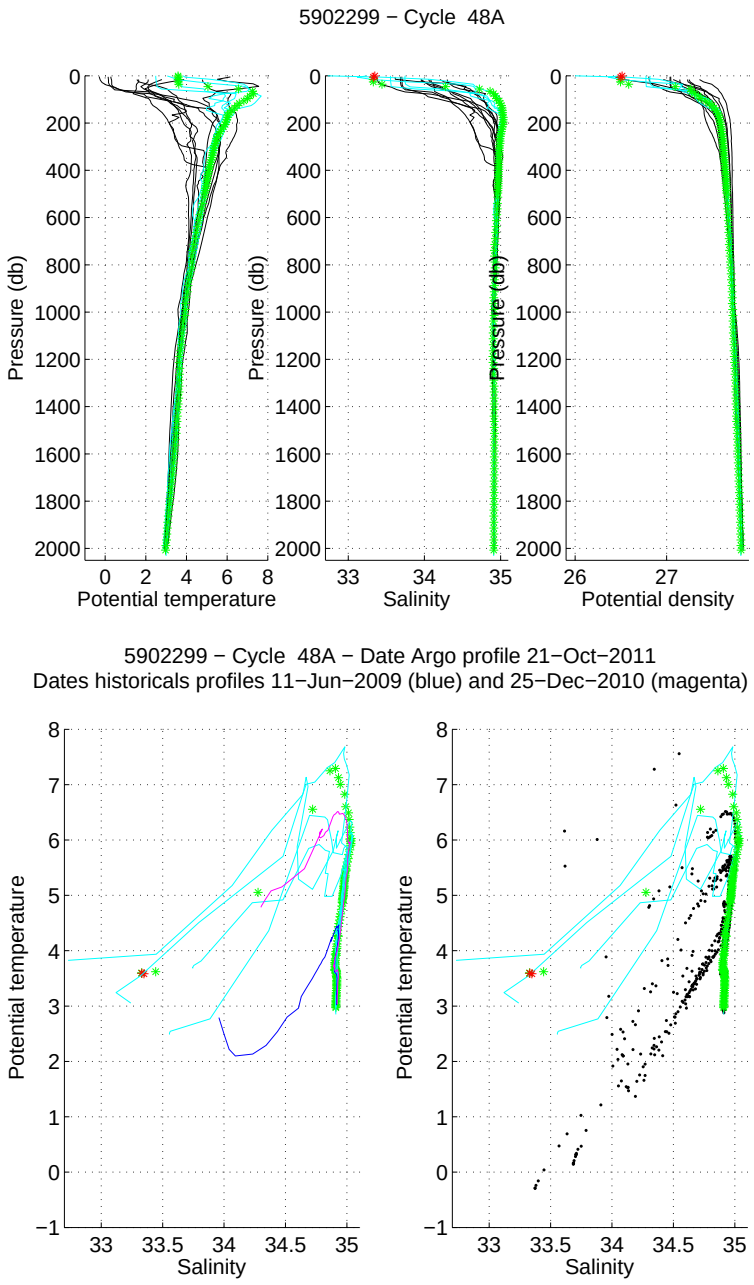


FIG. 27: Float 5902299, cycle 48A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

10 Cycle 49A - Comparaison to the nearest historical CTD profiles

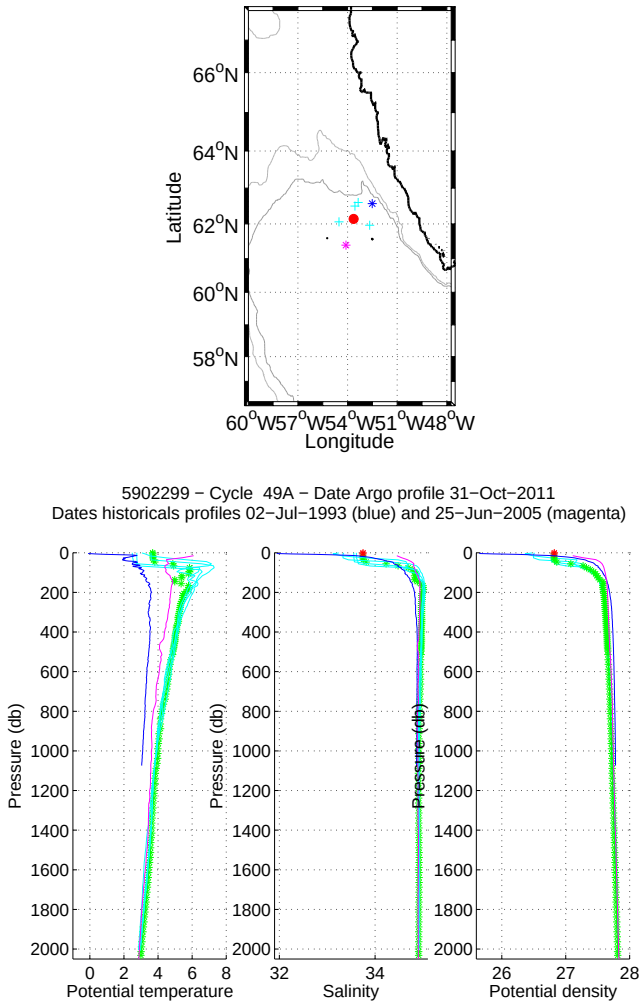


FIG. 28: Flotteur 5902299, cycle 49A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

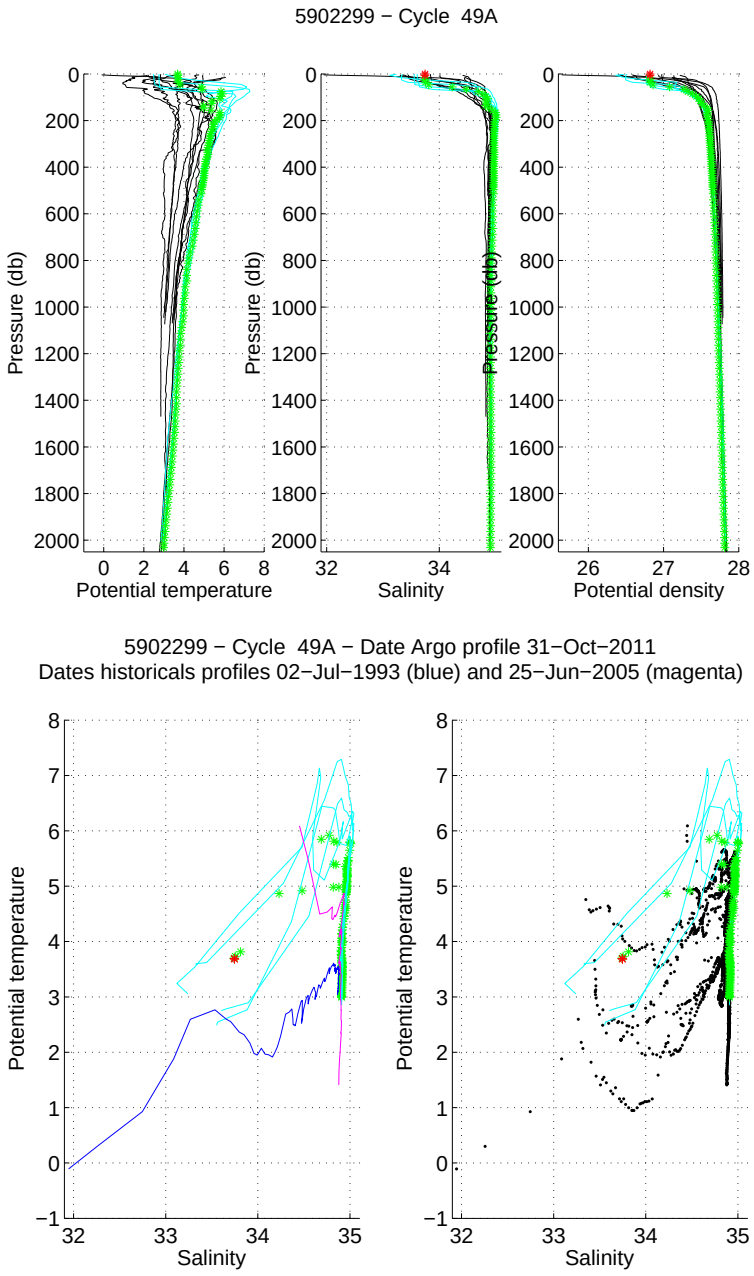


FIG. 29: Float 5902299, cycle 49A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

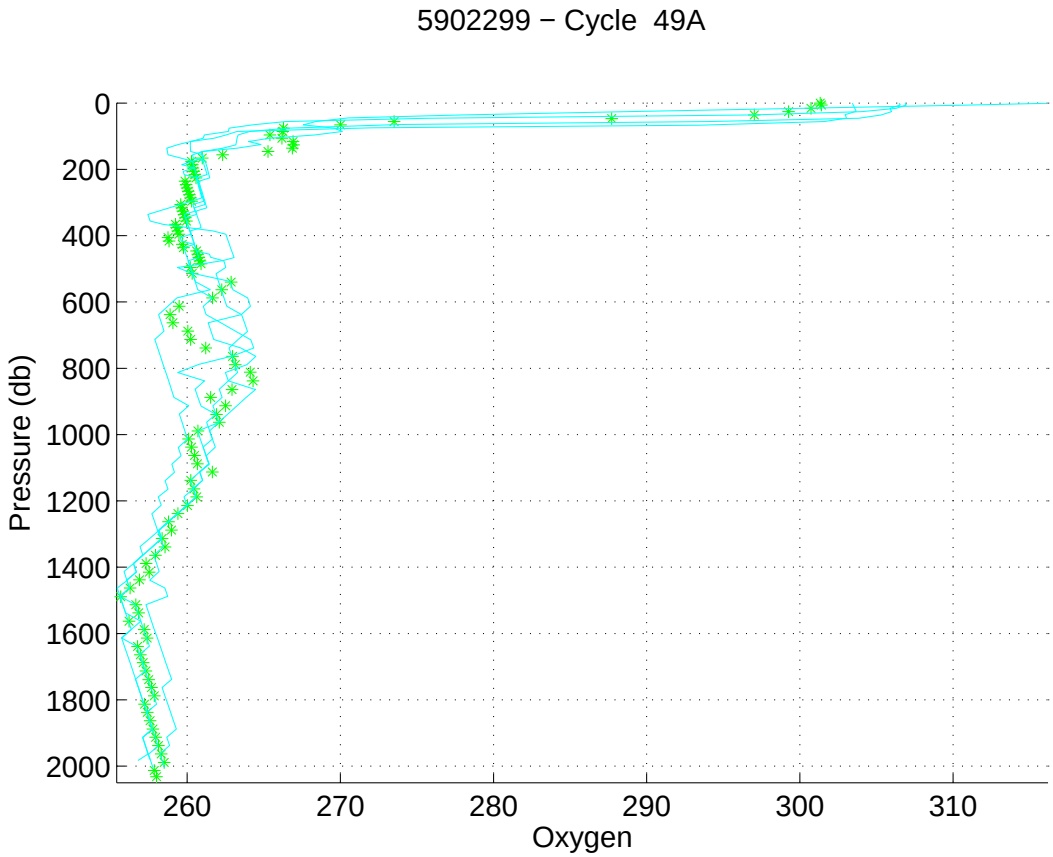


FIG. 30: Float 5902299, cycle 49A. Oxygen data.

11 Cycle 49A - Comparaison to the nearest ARGO profiles

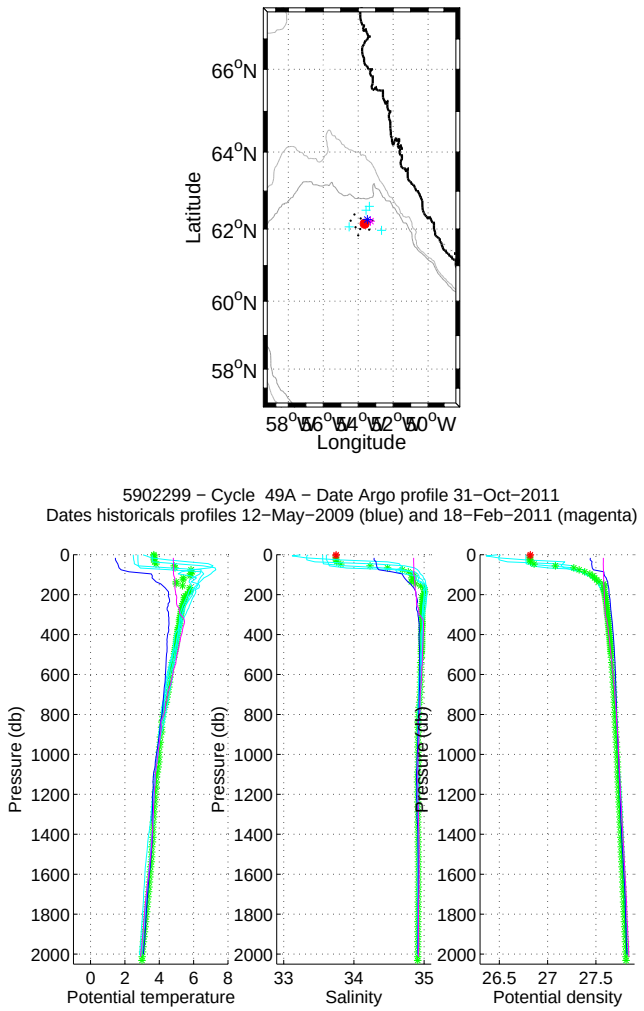


FIG. 31: Flotteur 5902299, cycle 49A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

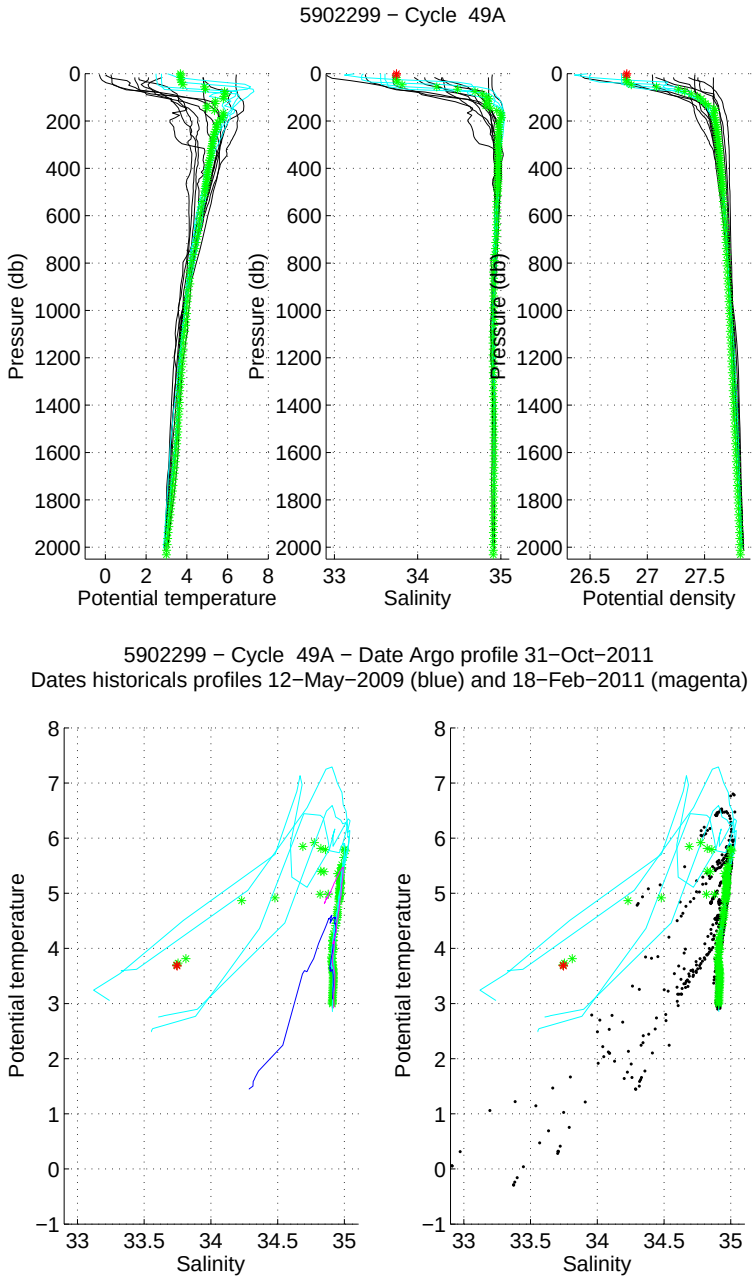


FIG. 32: Float 5902299, cycle 49A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

12 Cycle 52A - Comparaison to the nearest historical CTD profiles

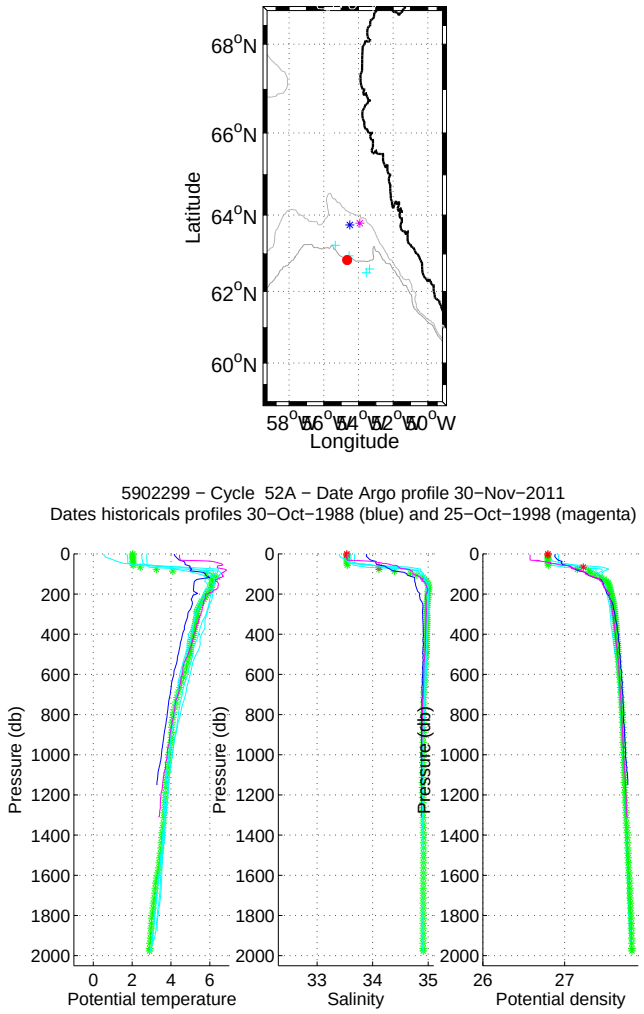


FIG. 33: Flotteur 5902299, cycle 52A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

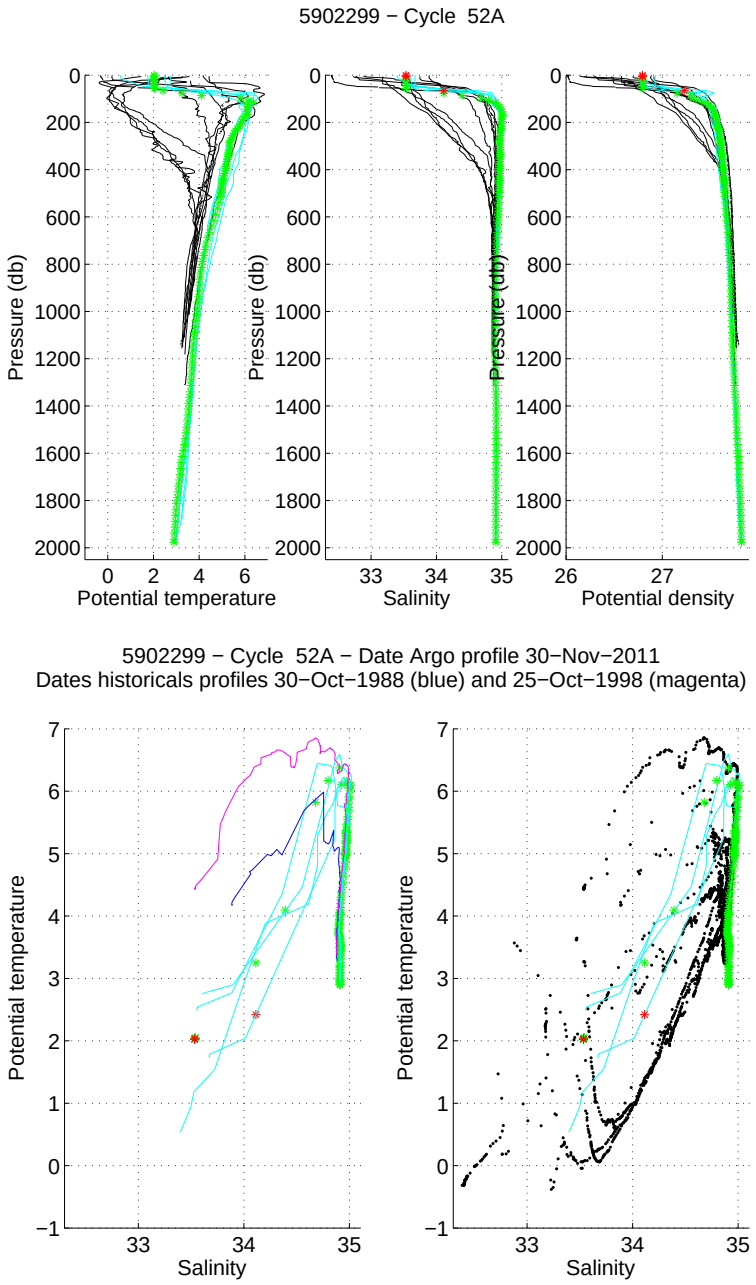


FIG. 34: Float 5902299, cycle 52A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

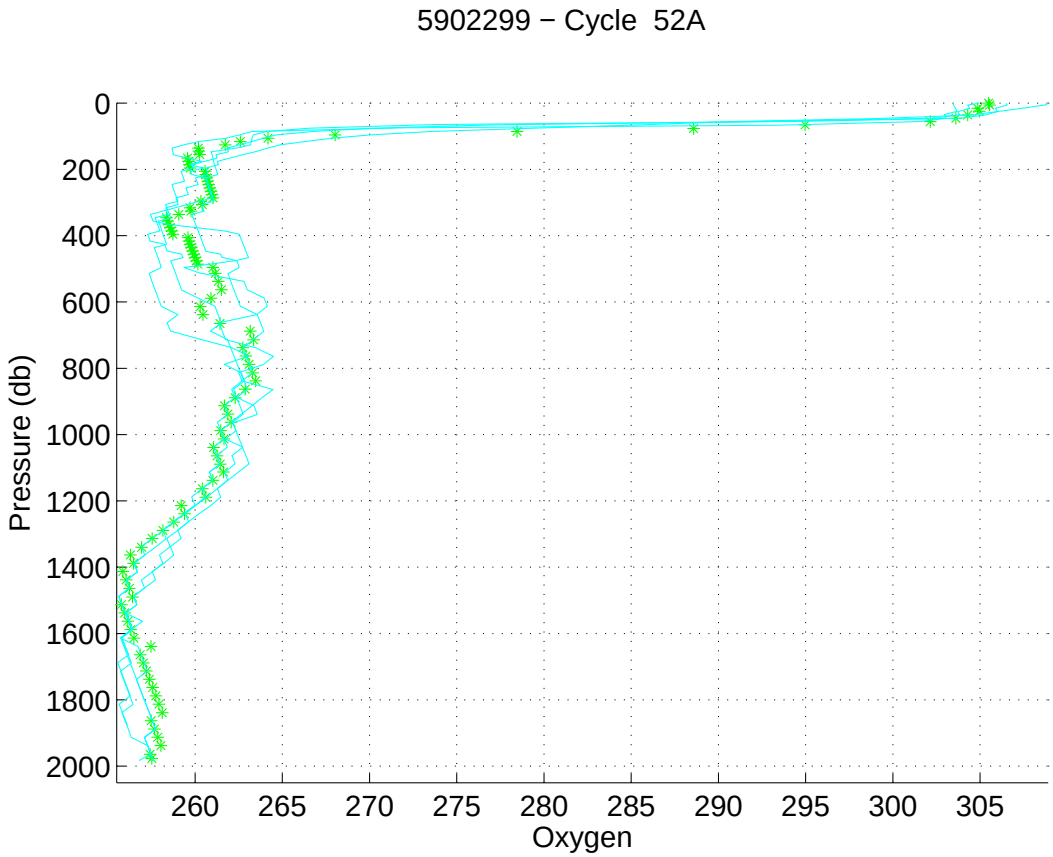


FIG. 35: Float 5902299, cycle 52A. Oxygen data.

13 Cycle 52A - Comparaison to the nearest ARGO profiles

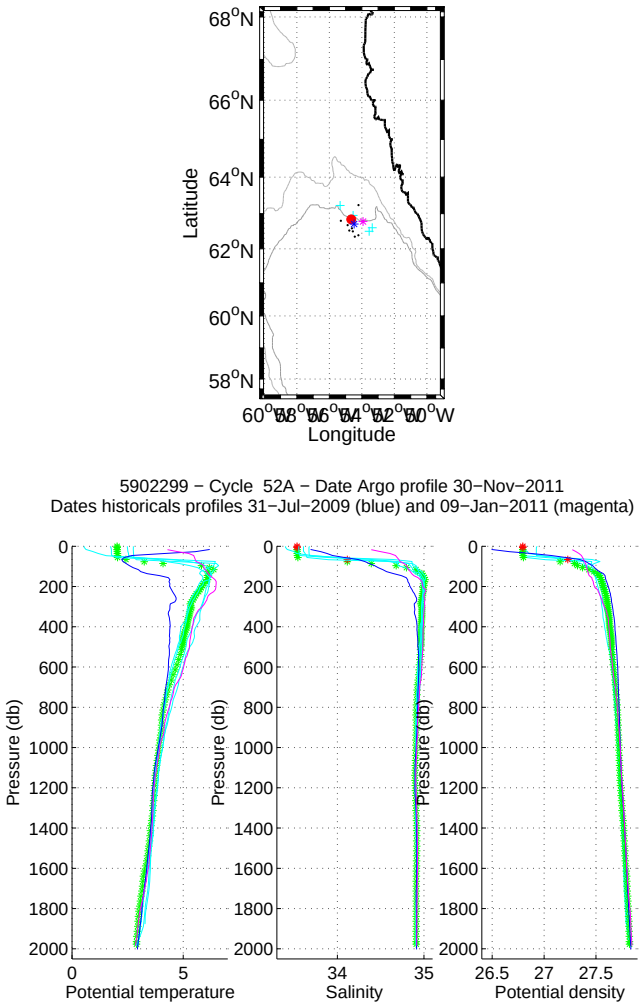


FIG. 36: Flotteur 5902299, cycle 52A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

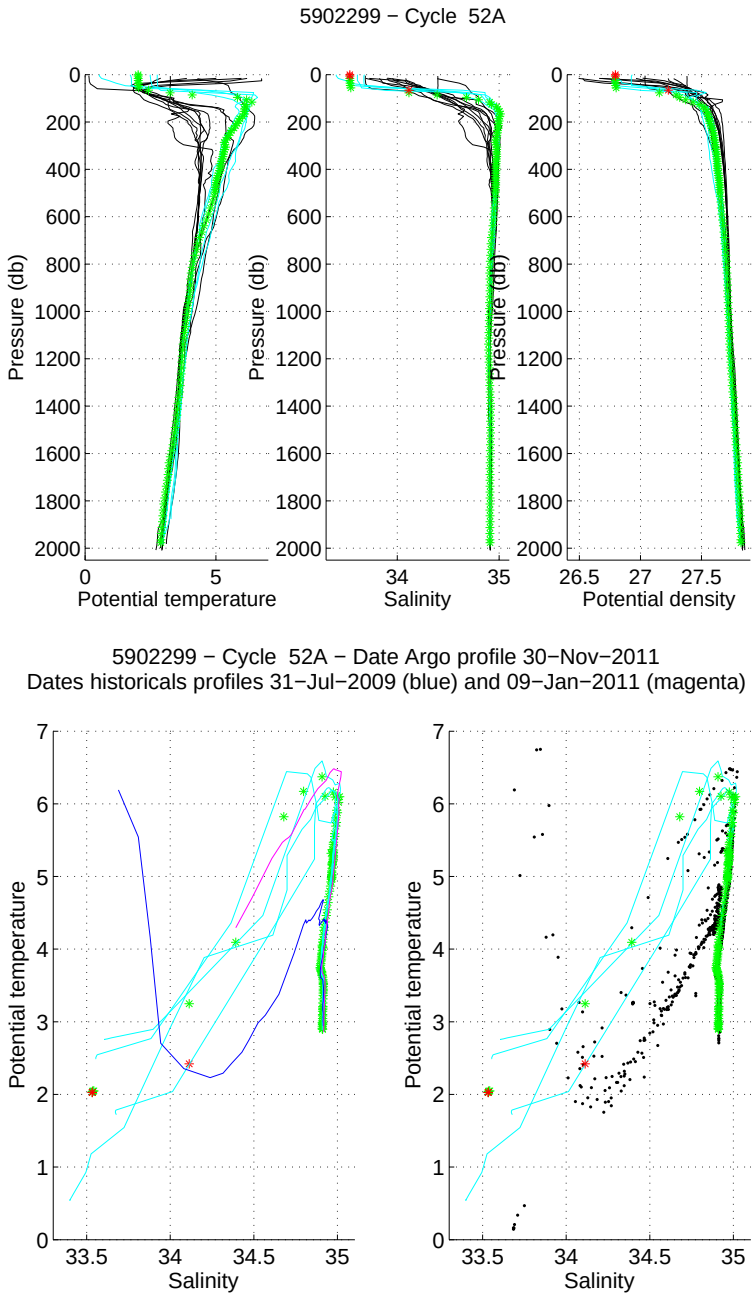


FIG. 37: Float 5902299, cycle 52A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

14 Cycle 53A - Comparaison to the nearest historical CTD profiles

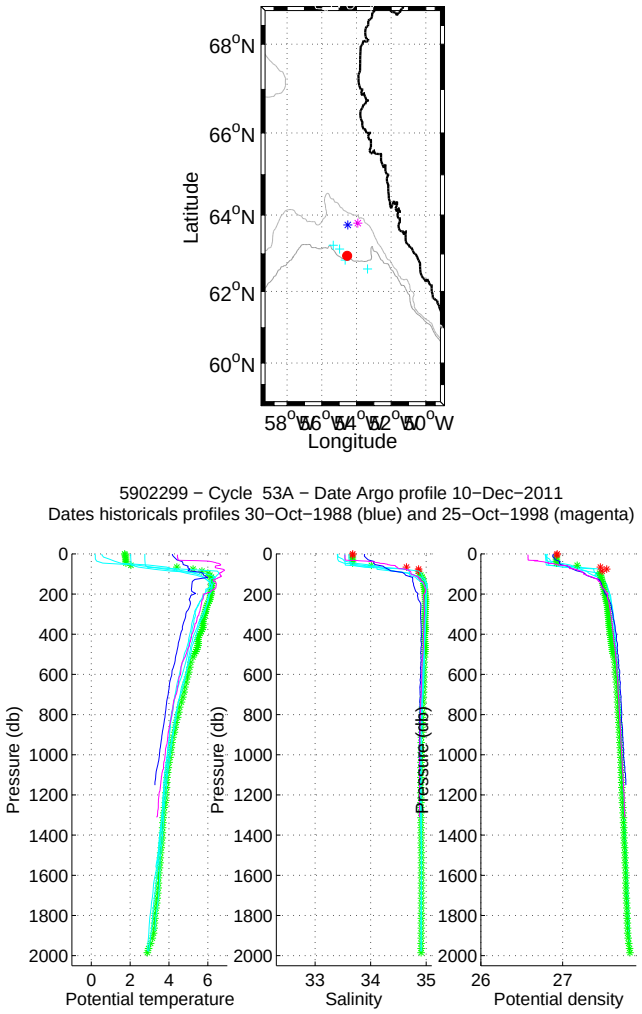


FIG. 38: Flotteur 5902299, cycle 53A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

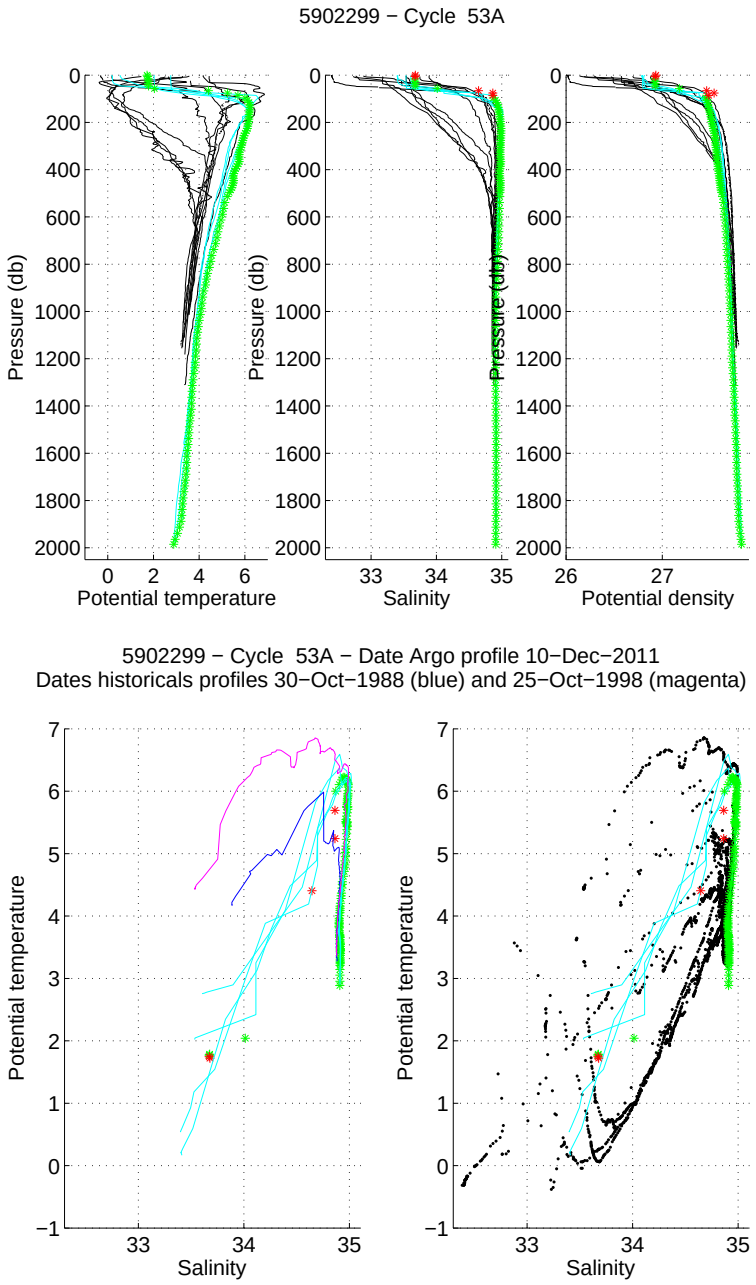


FIG. 39: Float 5902299, cycle 53A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

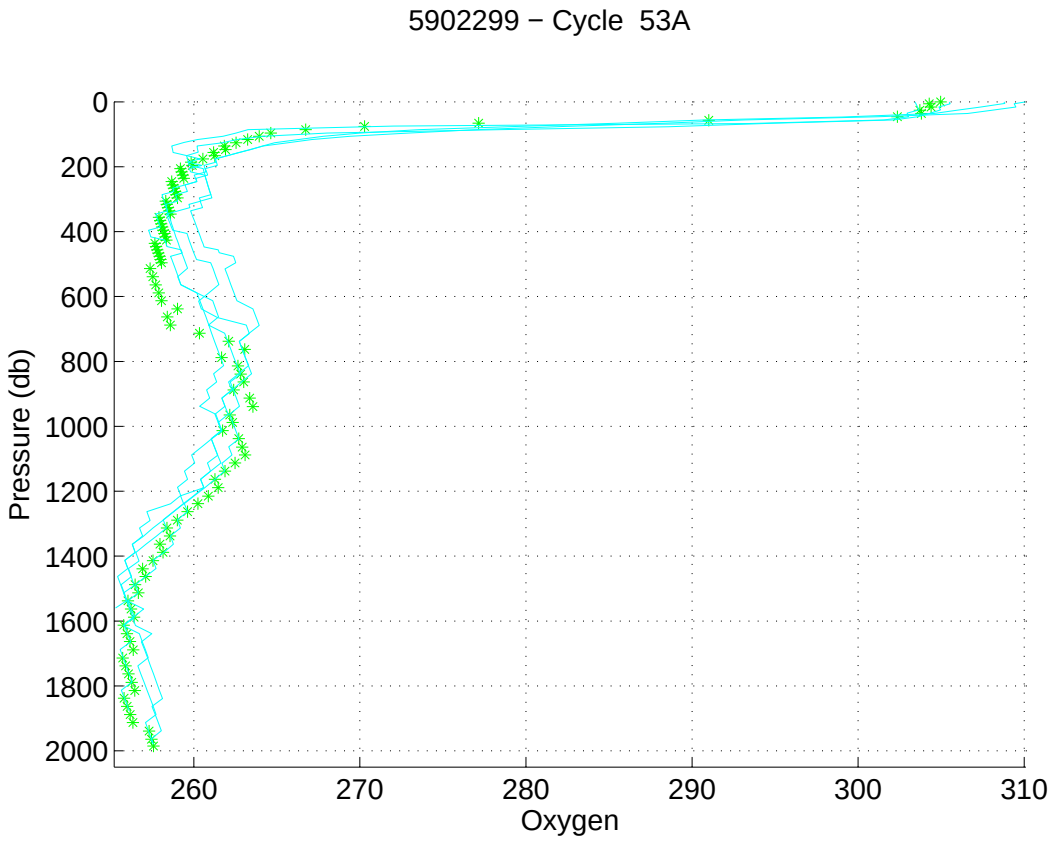


FIG. 40: Float 5902299, cycle 53A. Oxygen data.

15 Cycle 53A - Comparaison to the nearest ARGO profiles

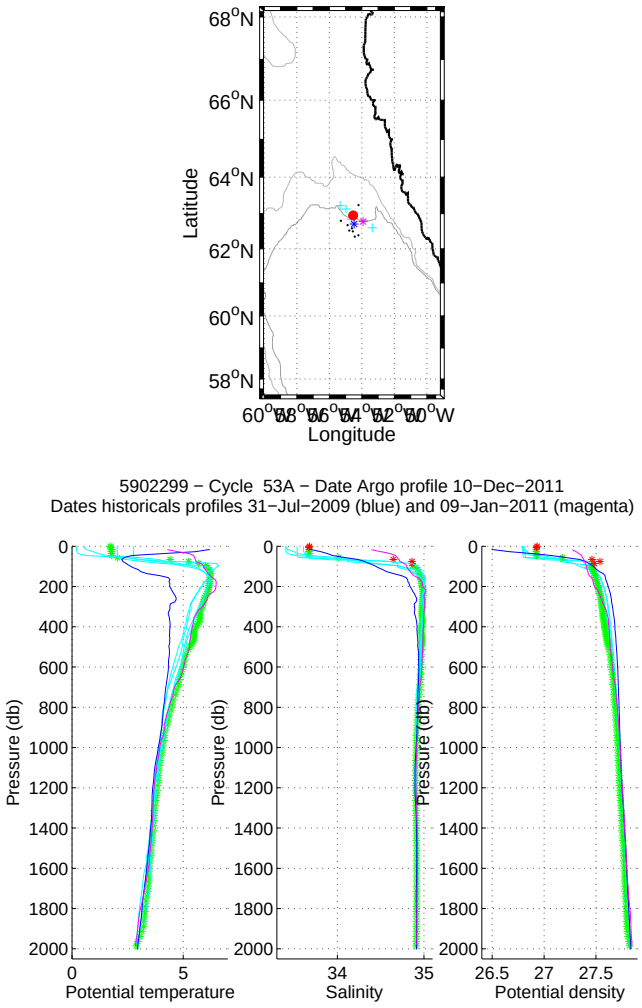


FIG. 41: Flotteur 5902299, cycle 53A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

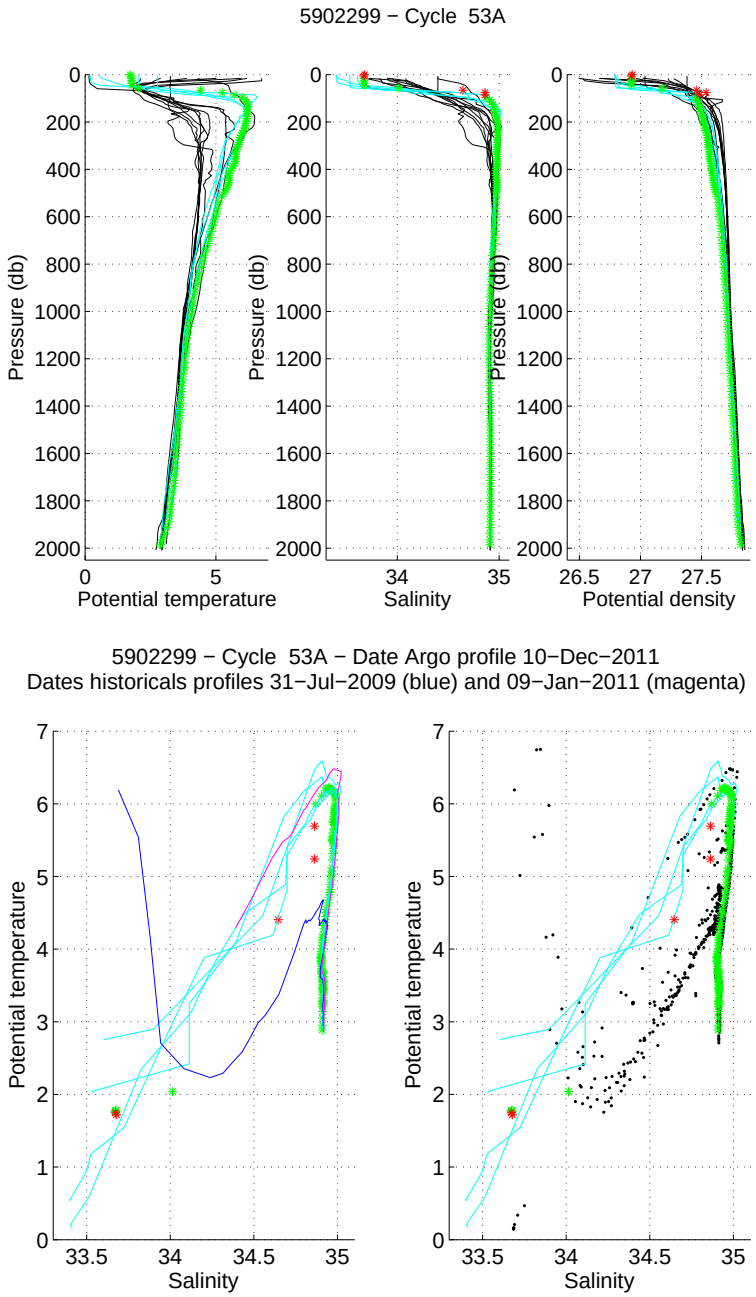


FIG. 42: Float 5902299, cycle 53A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

16 Cycle 54A - Comparaison to the nearest historical CTD profiles

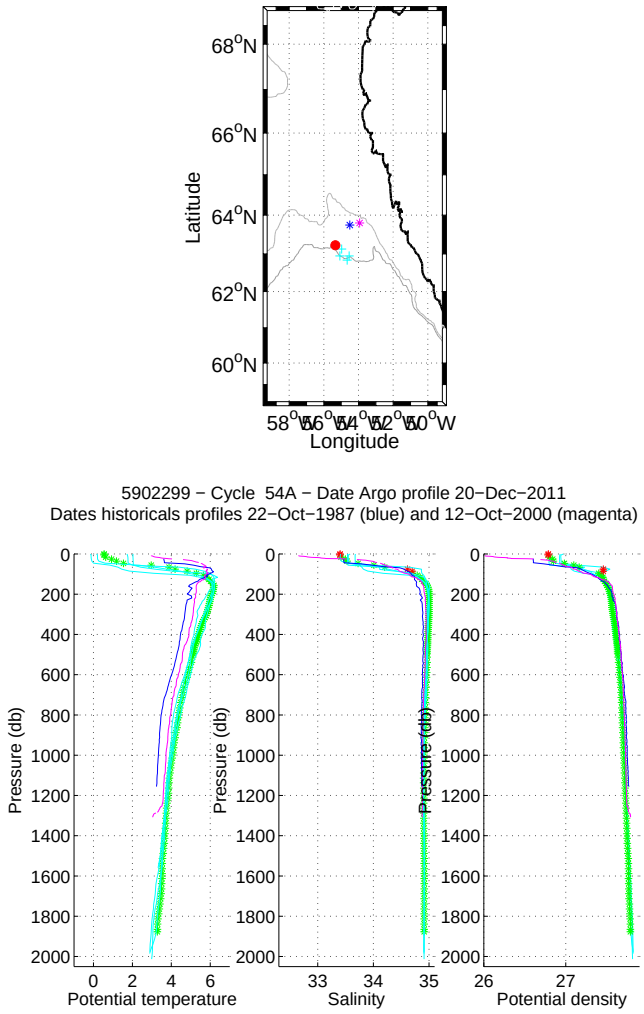


FIG. 43: Flotteur 5902299, cycle 54A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

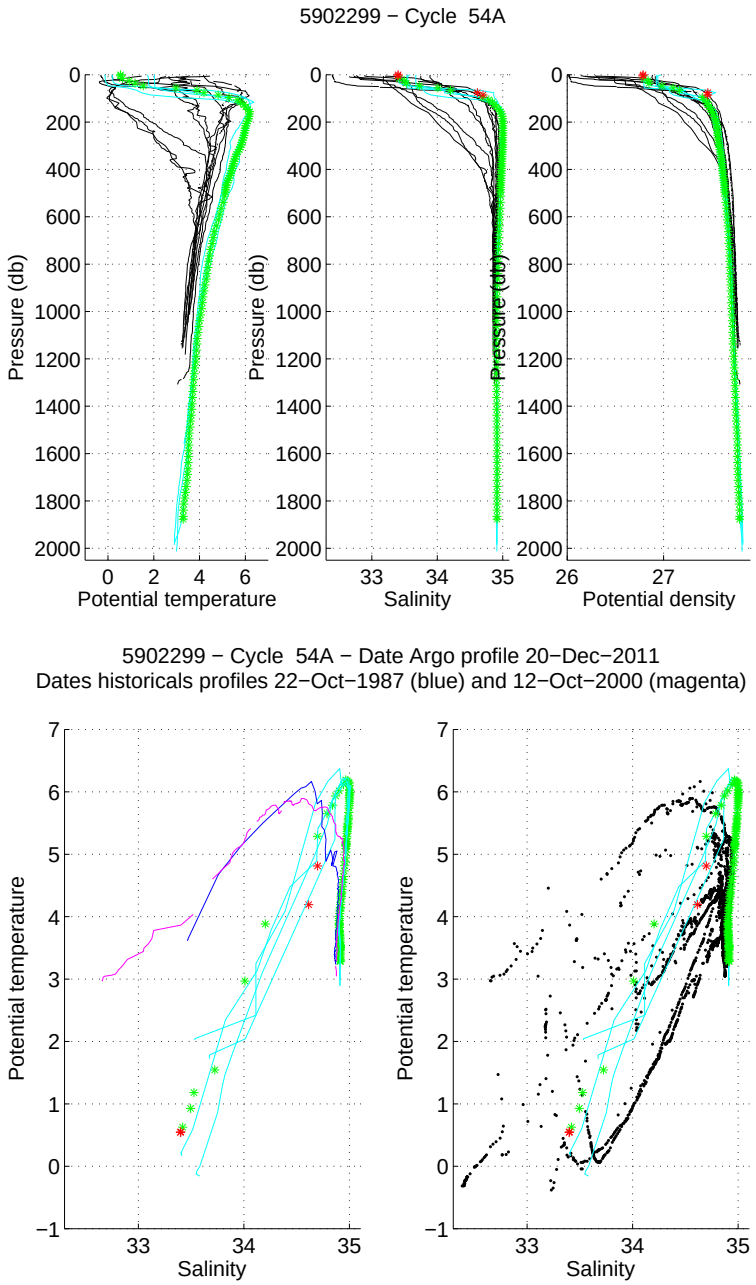


FIG. 44: Float 5902299, cycle 54A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

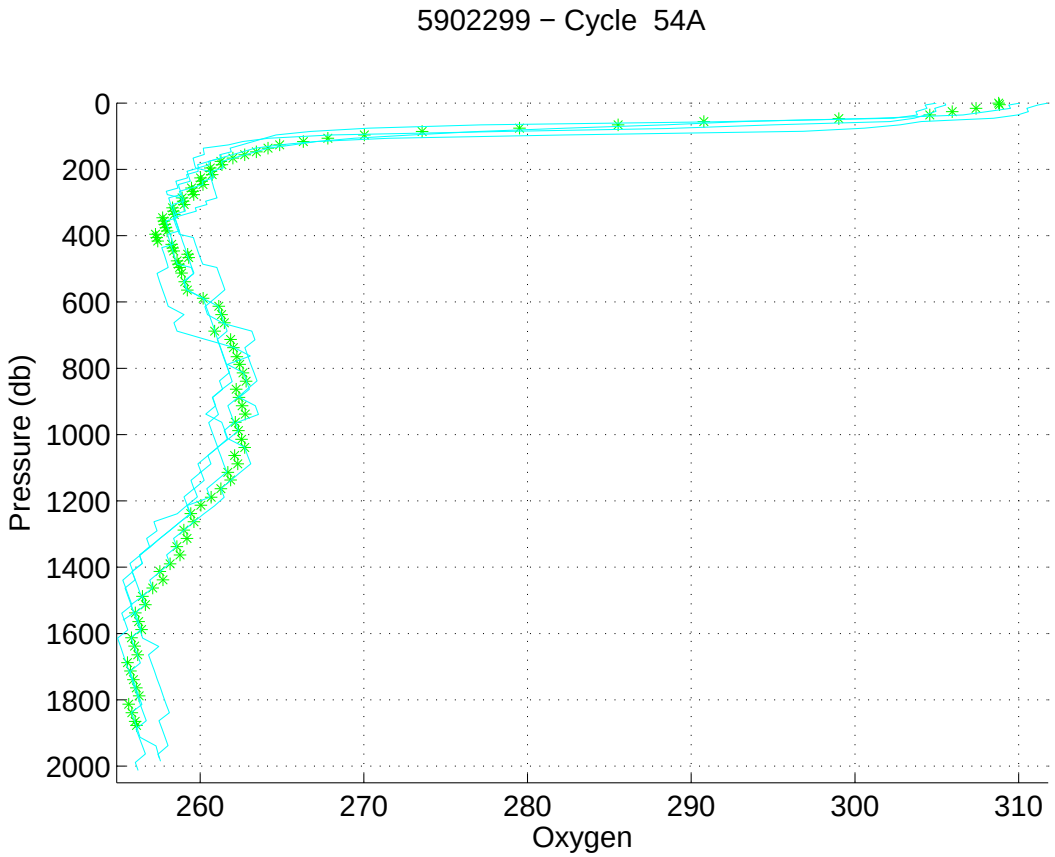


FIG. 45: Float 5902299, cycle 54A. Oxygen data.

17 Cycle 54A - Comparaison to the nearest ARGO profiles

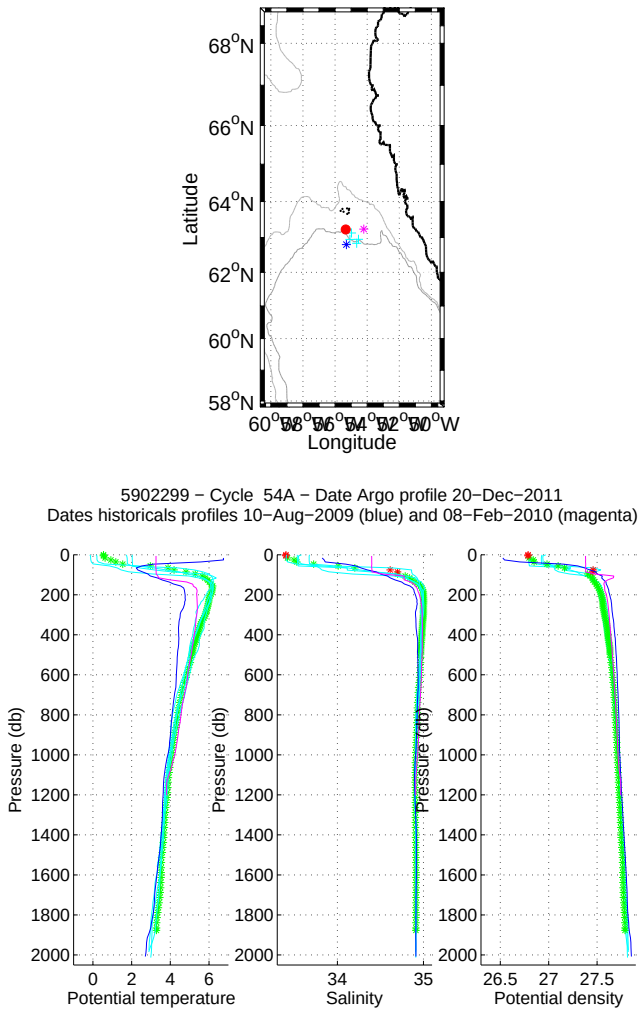


FIG. 46: Flotteur 5902299, cycle 54A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

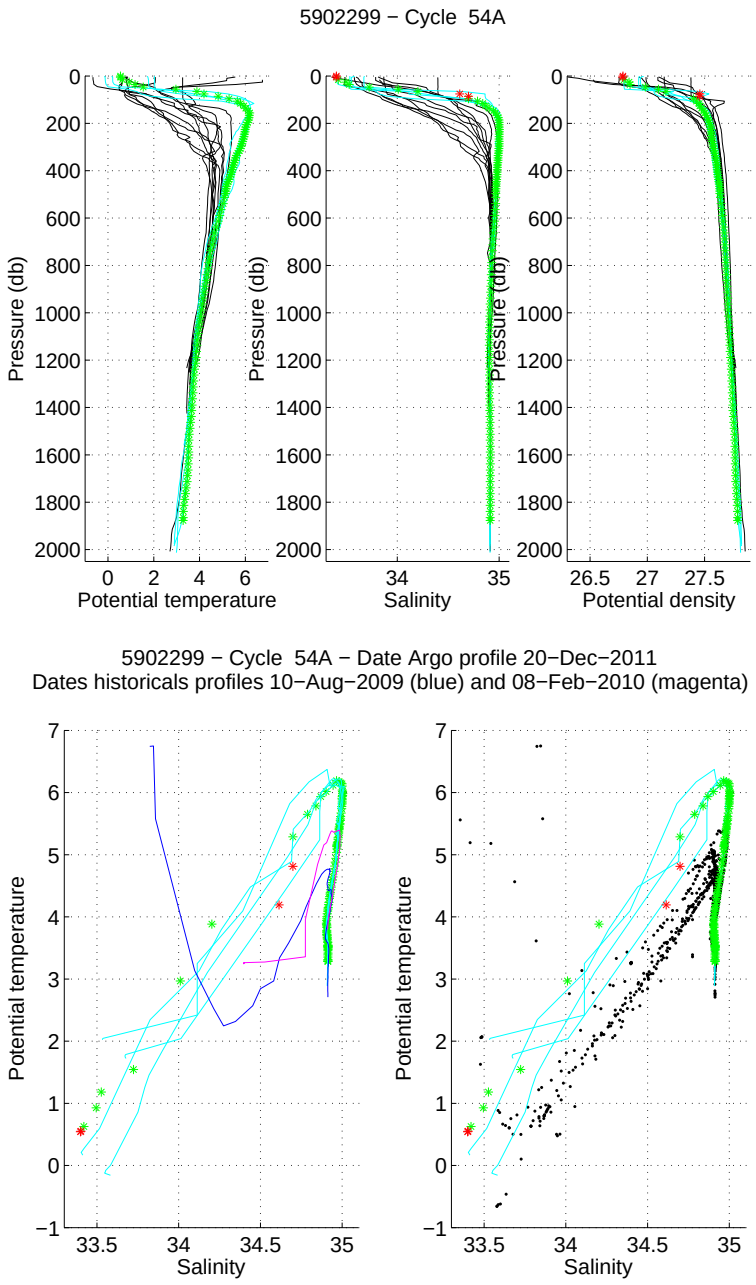


FIG. 47: Float 5902299, cycle 54A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

18 Cycle 55A - Comparaison to the nearest historical CTD profiles

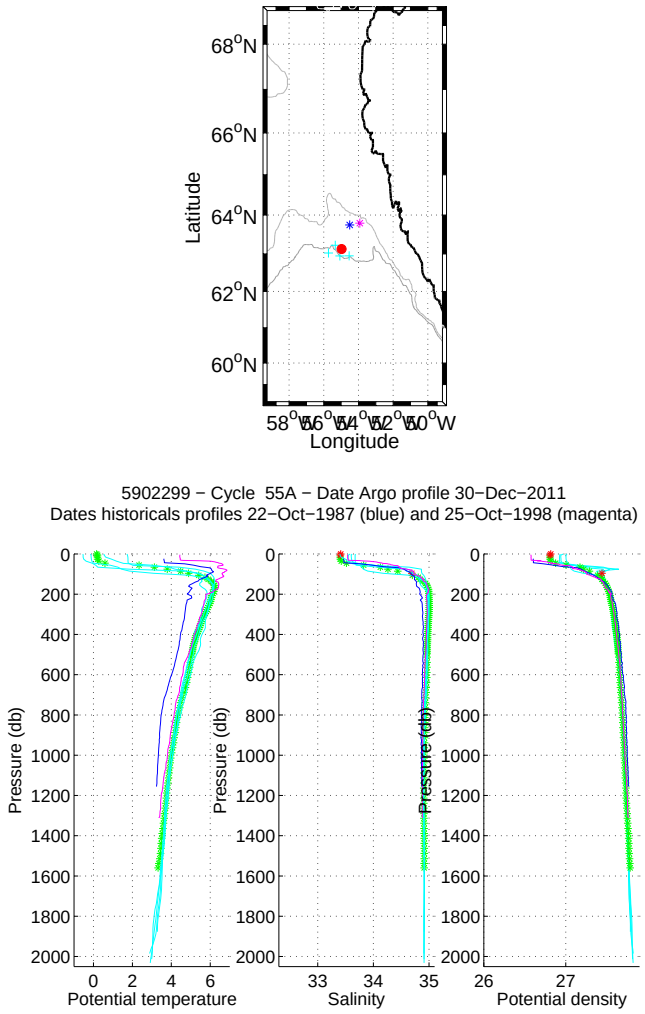


FIG. 48: Flotteur 5902299, cycle 55A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

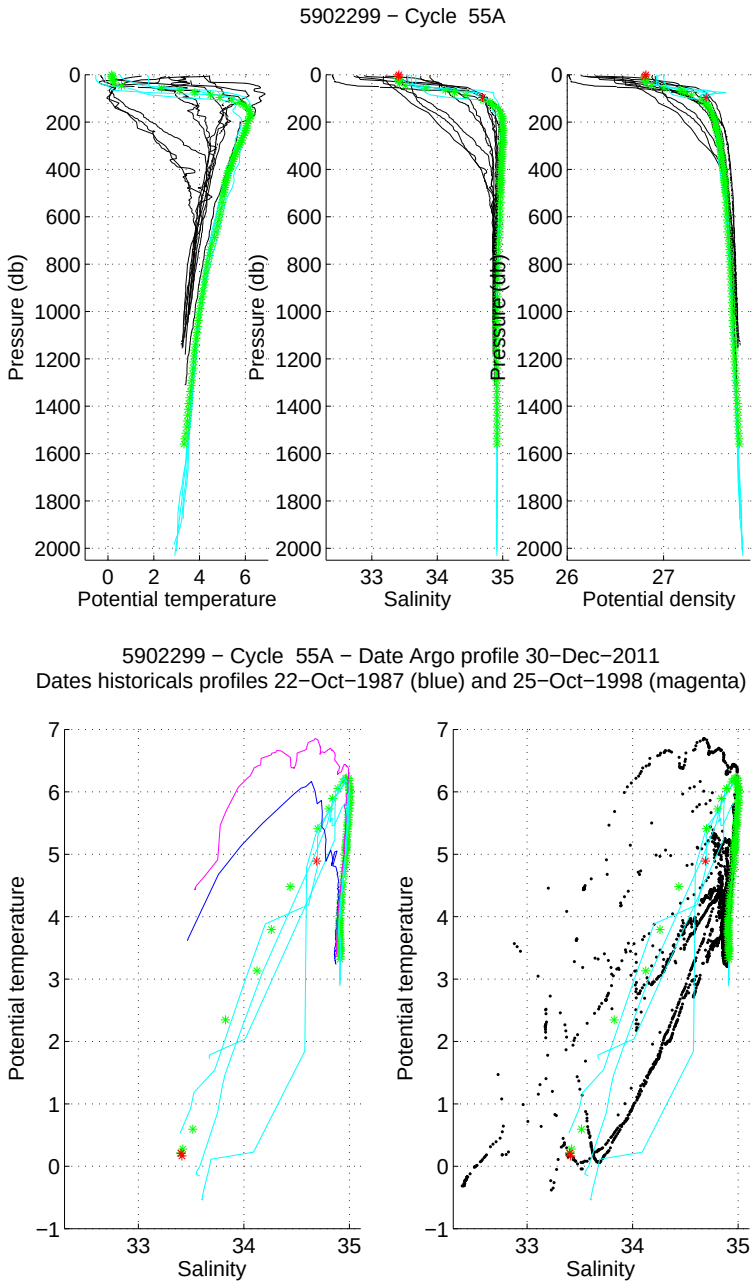


FIG. 49: Float 5902299, cycle 55A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

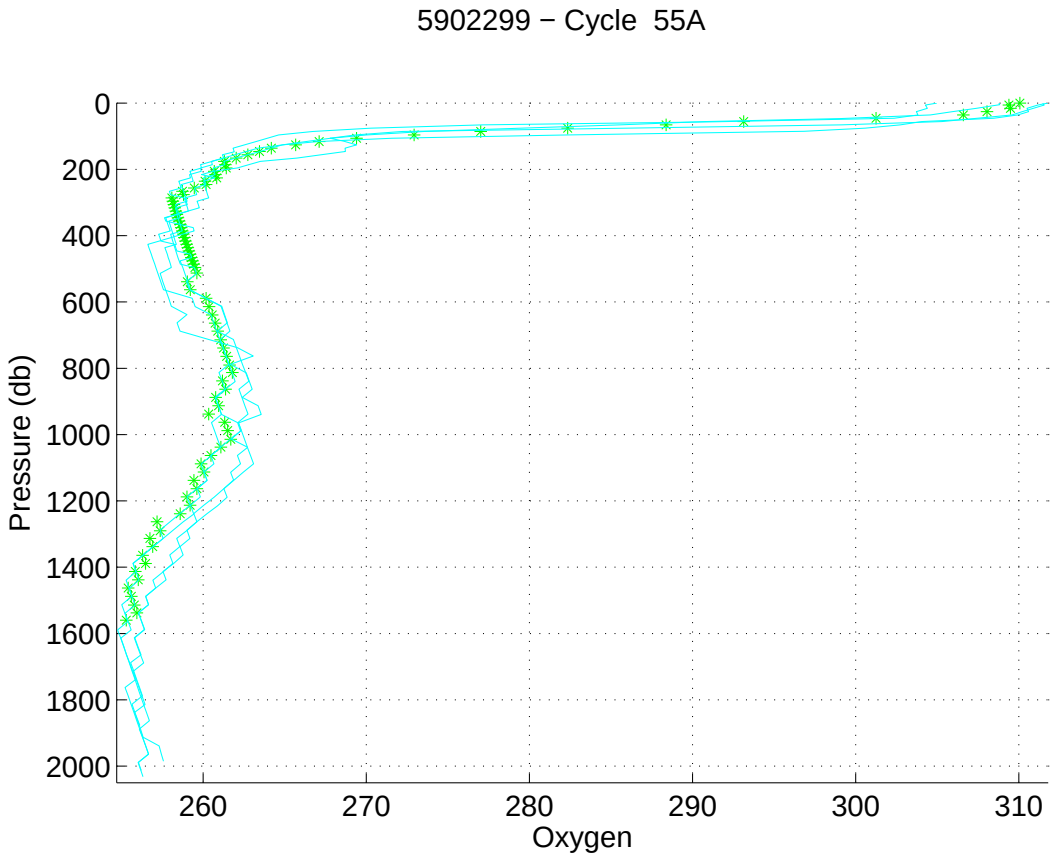


FIG. 50: Float 5902299, cycle 55A. Oxygen data.

19 Cycle 55A - Comparaison to the nearest ARGO profiles

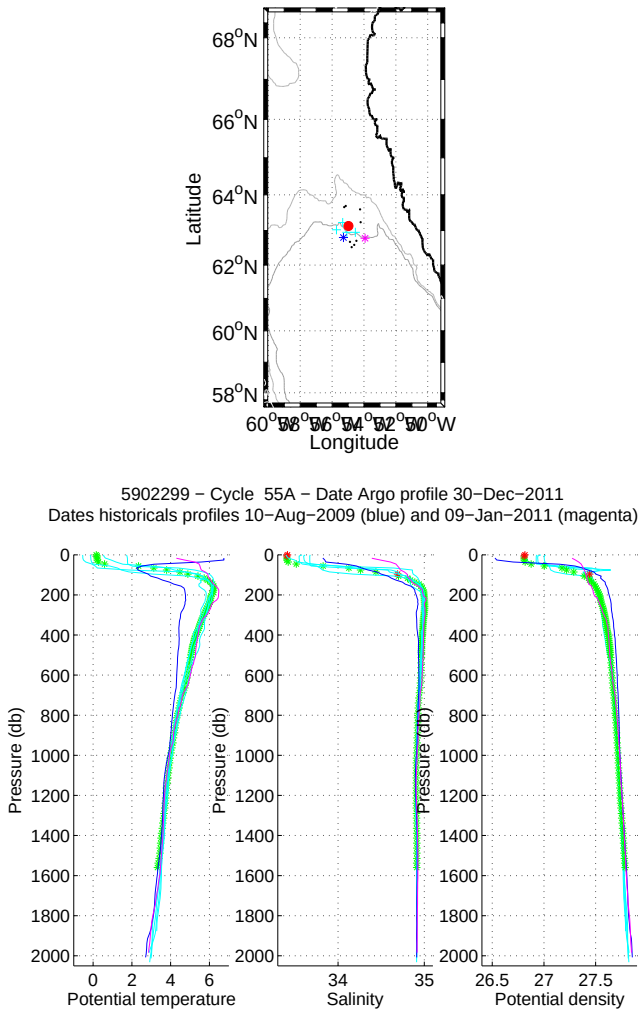


FIG. 51: Flotteur 5902299, cycle 55A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

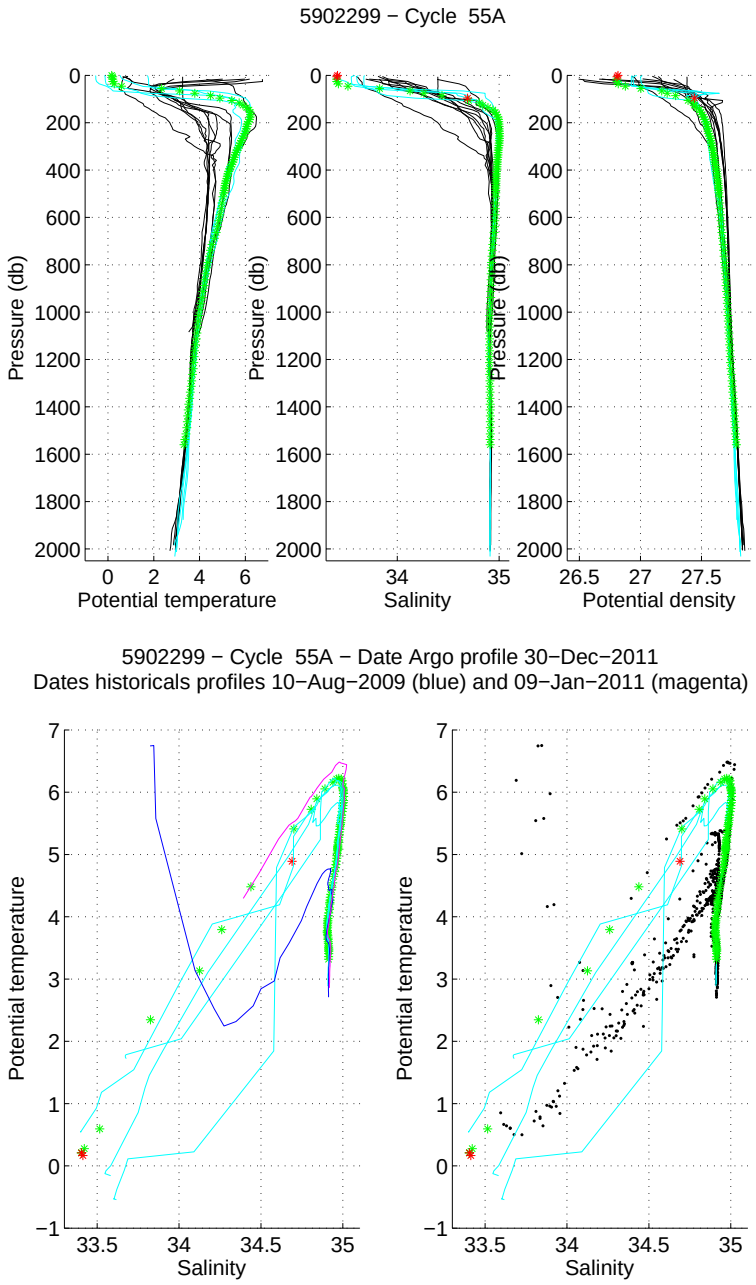


FIG. 52: Float 5902299, cycle 55A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

20 Cycle 56A - Comparaison to the nearest historical CTD profiles

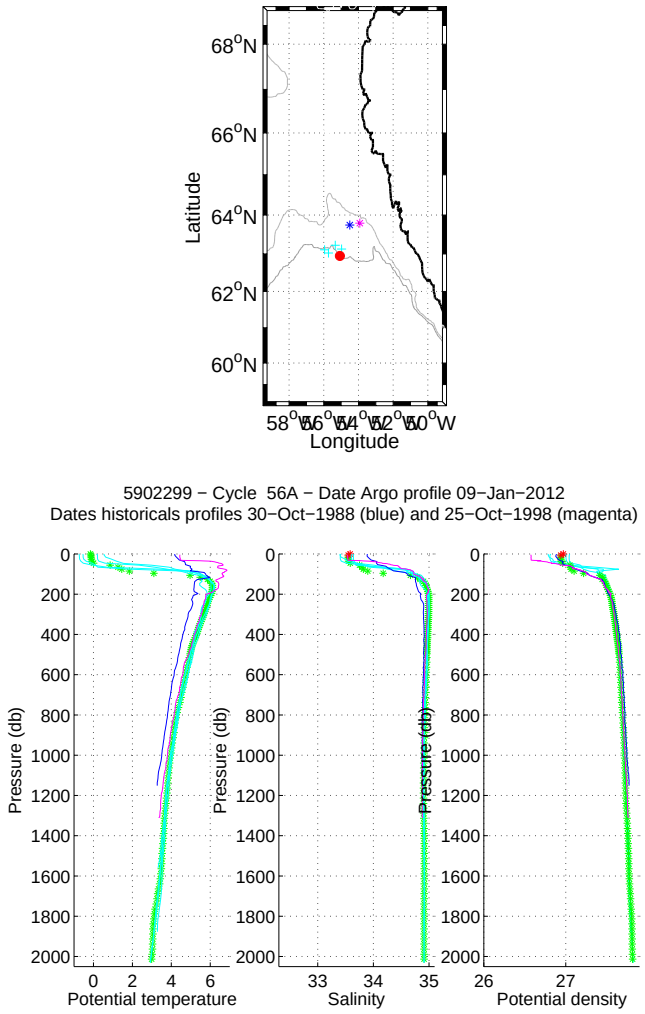


FIG. 53: Flotteur 5902299, cycle 56A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

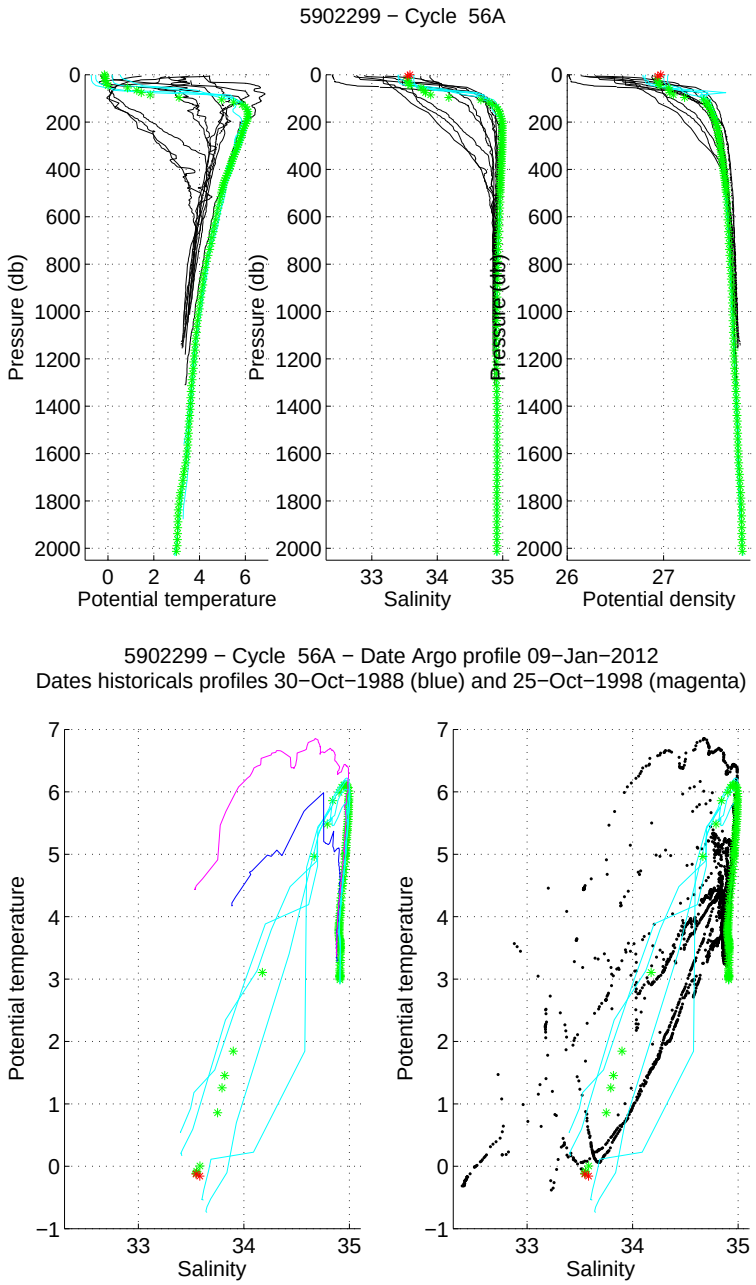


FIG. 54: Float 5902299, cycle 56A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

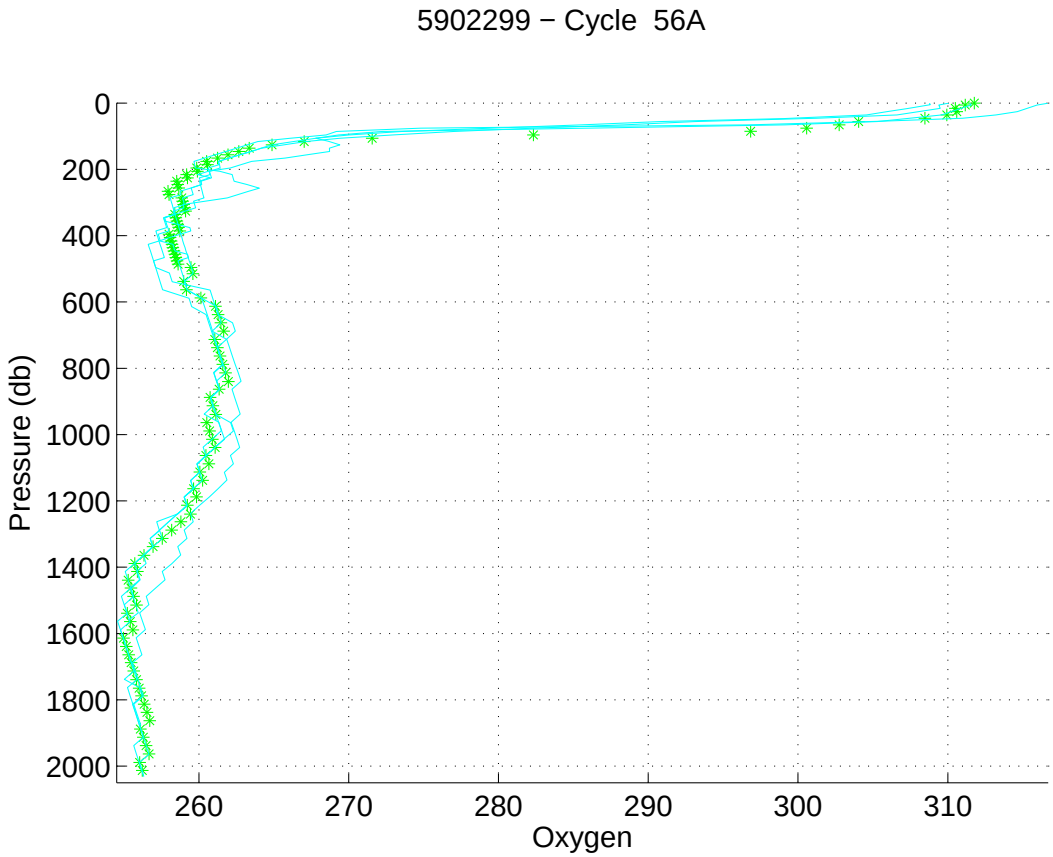


FIG. 55: Float 5902299, cycle 56A. Oxygen data.

21 Cycle 56A - Comparaison to the nearest ARGO profiles

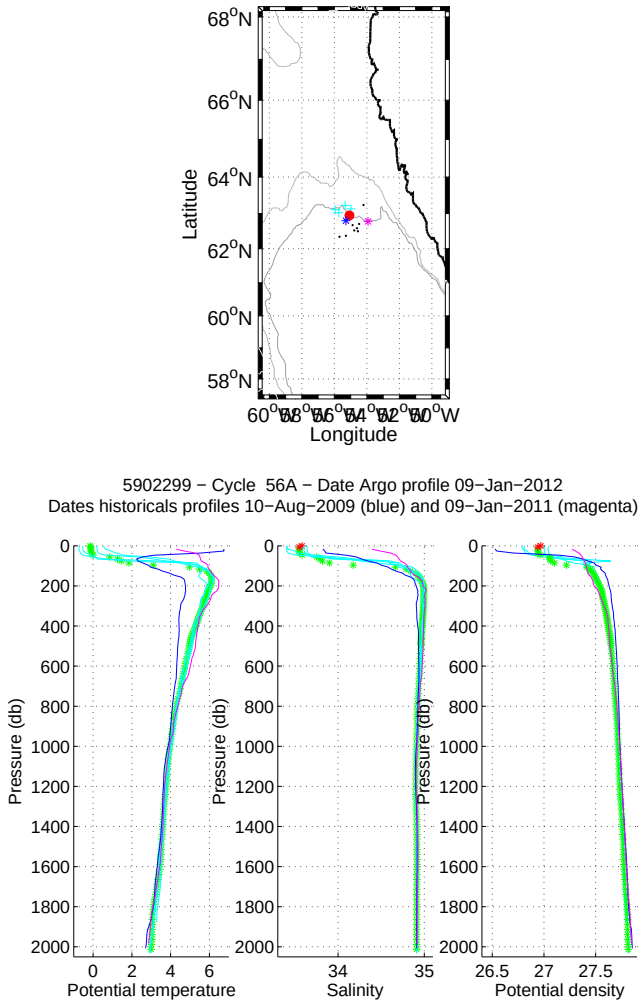


FIG. 56: Flotteur 5902299, cycle 56A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

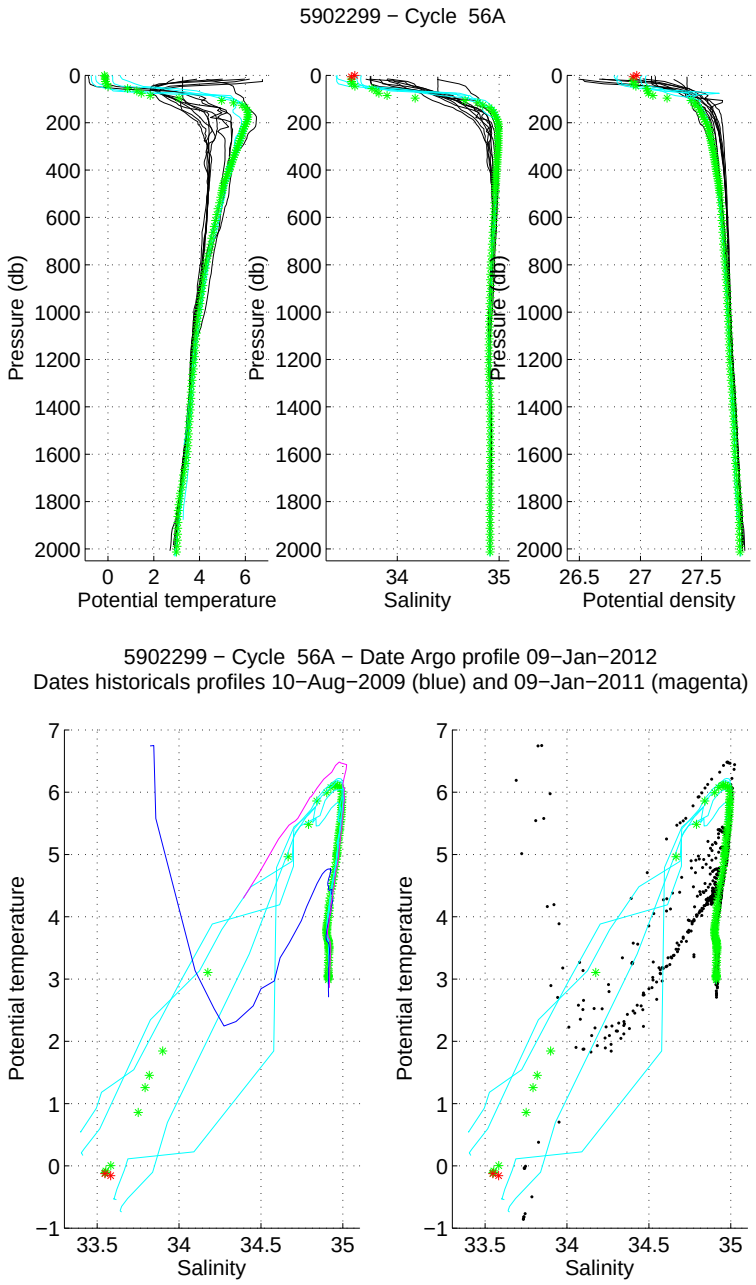


FIG. 57: Float 5902299, cycle 56A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

22 Cycle 57A - Comparaison to the nearest historical CTD profiles

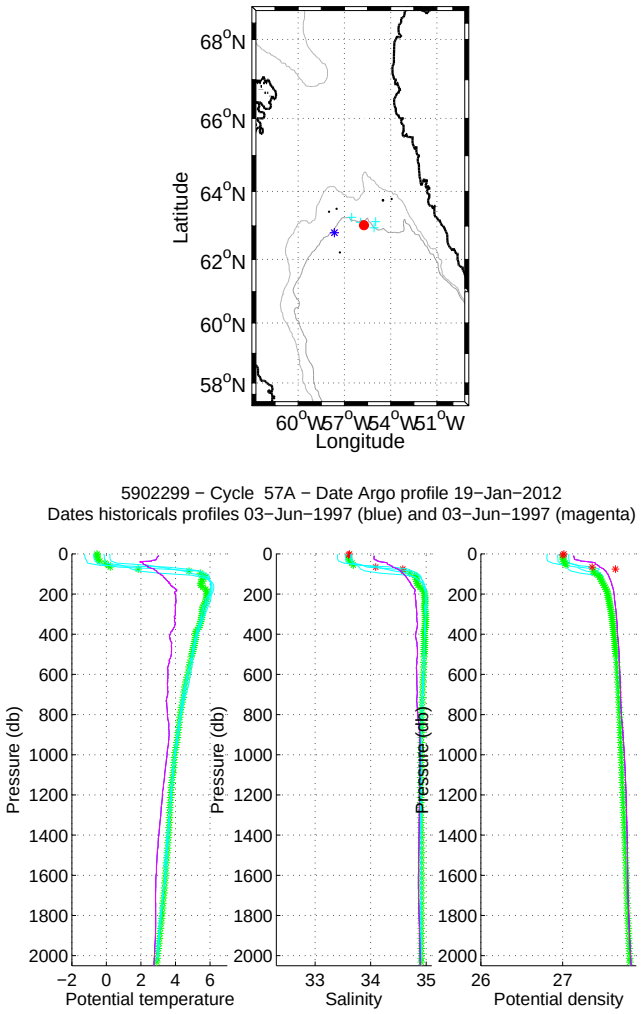


FIG. 58: Flotteur 5902299, cycle 57A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

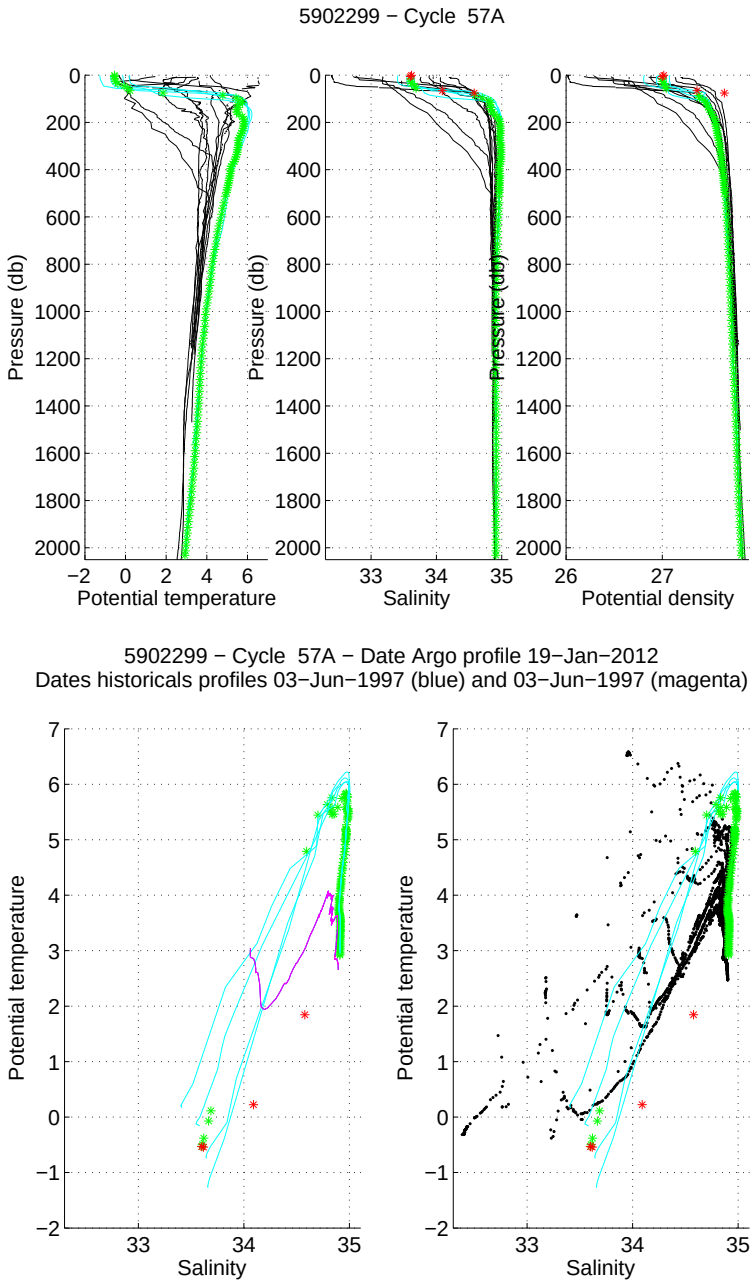


FIG. 59: Float 5902299, cycle 57A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

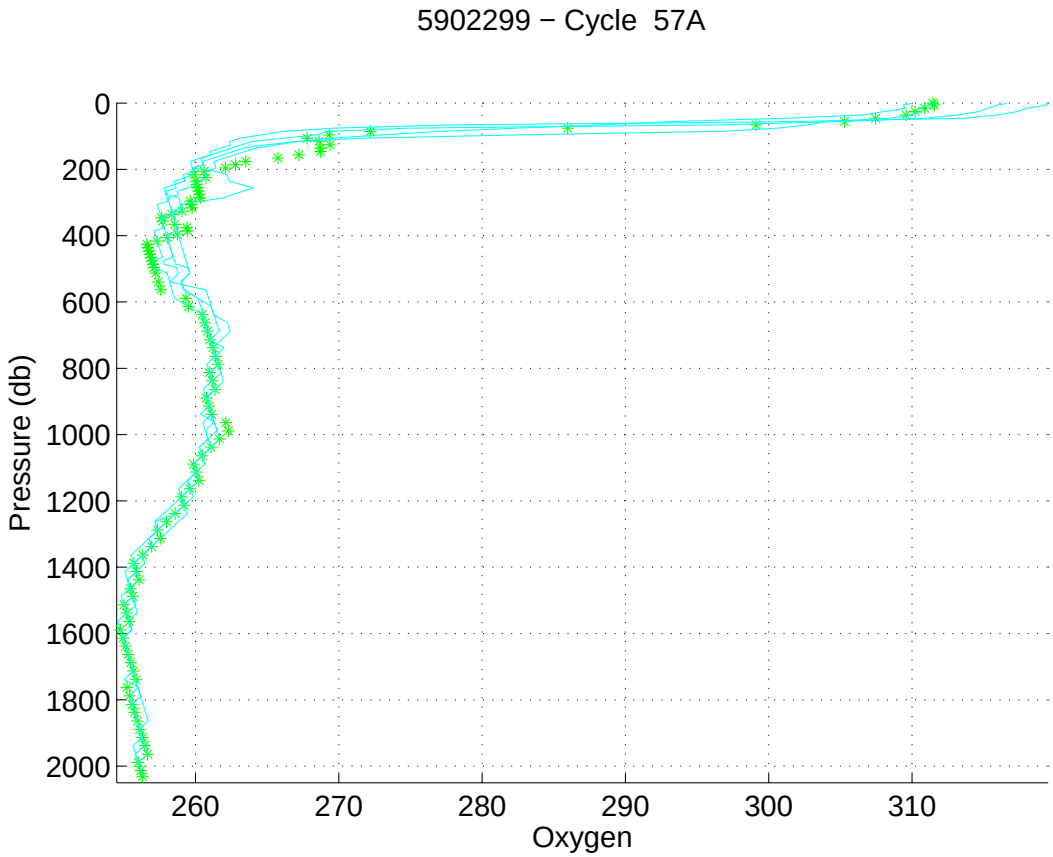


FIG. 60: Float 5902299, cycle 57A. Oxygen data.

23 Cycle 57A - Comparaison to the nearest ARGO profiles

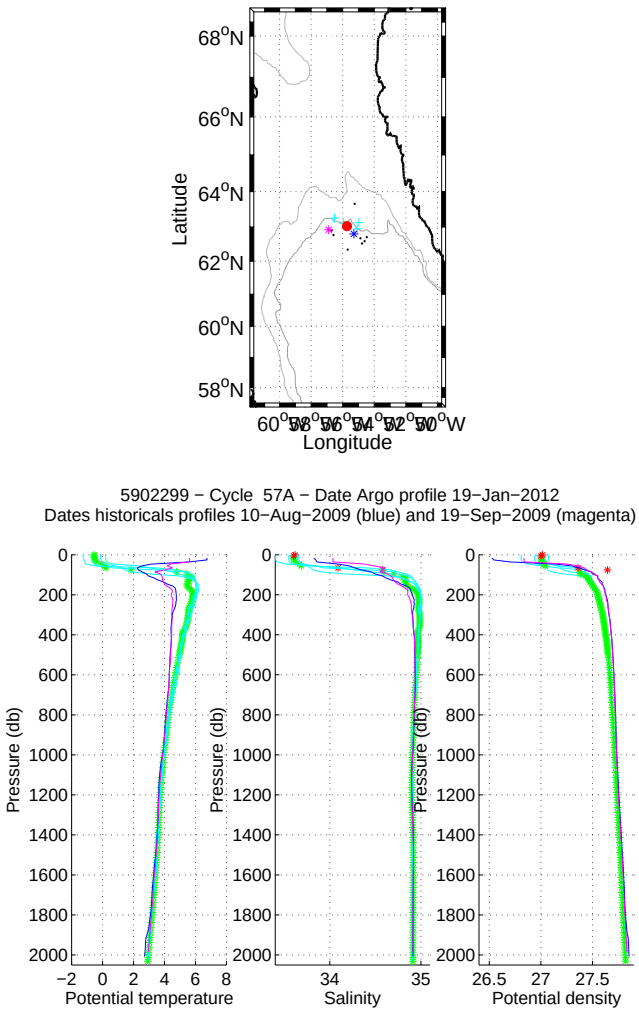


FIG. 61: Flotteur 5902299, cycle 57A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

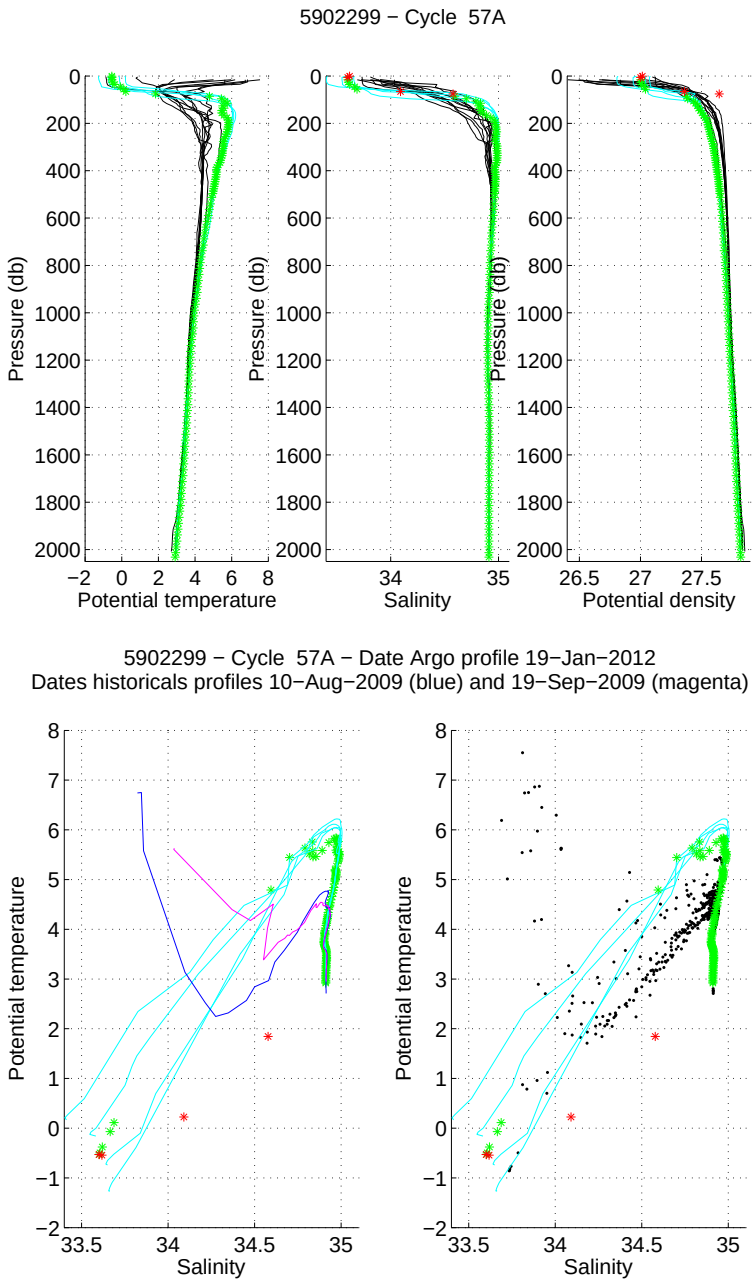


FIG. 62: Float 5902299, cycle 57A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

24 Cycle 60A - Comparaison to the nearest historical CTD profiles

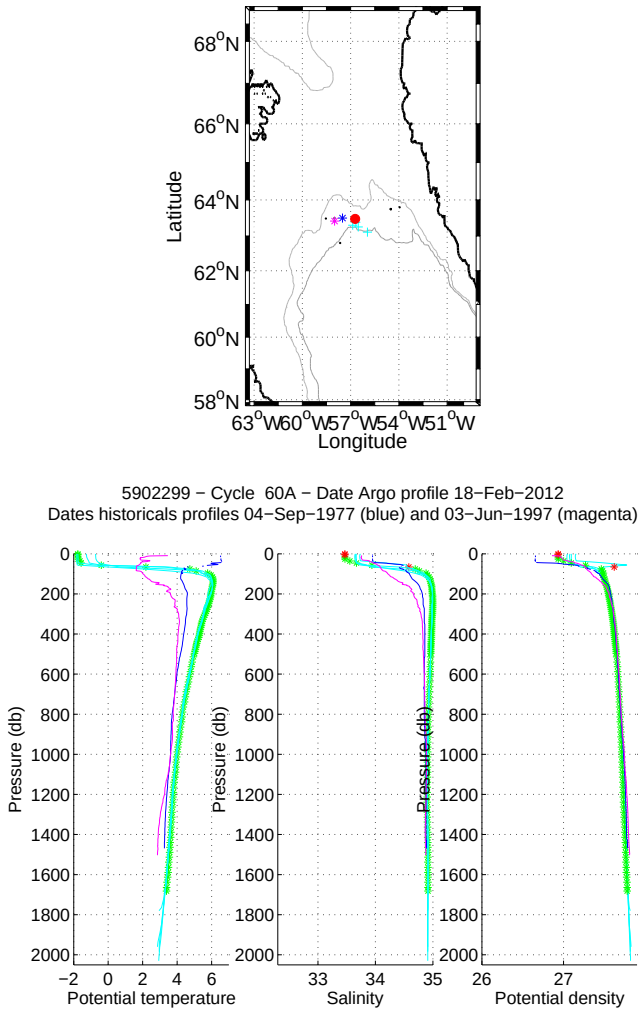


FIG. 63: Flotteur 5902299, cycle 60A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

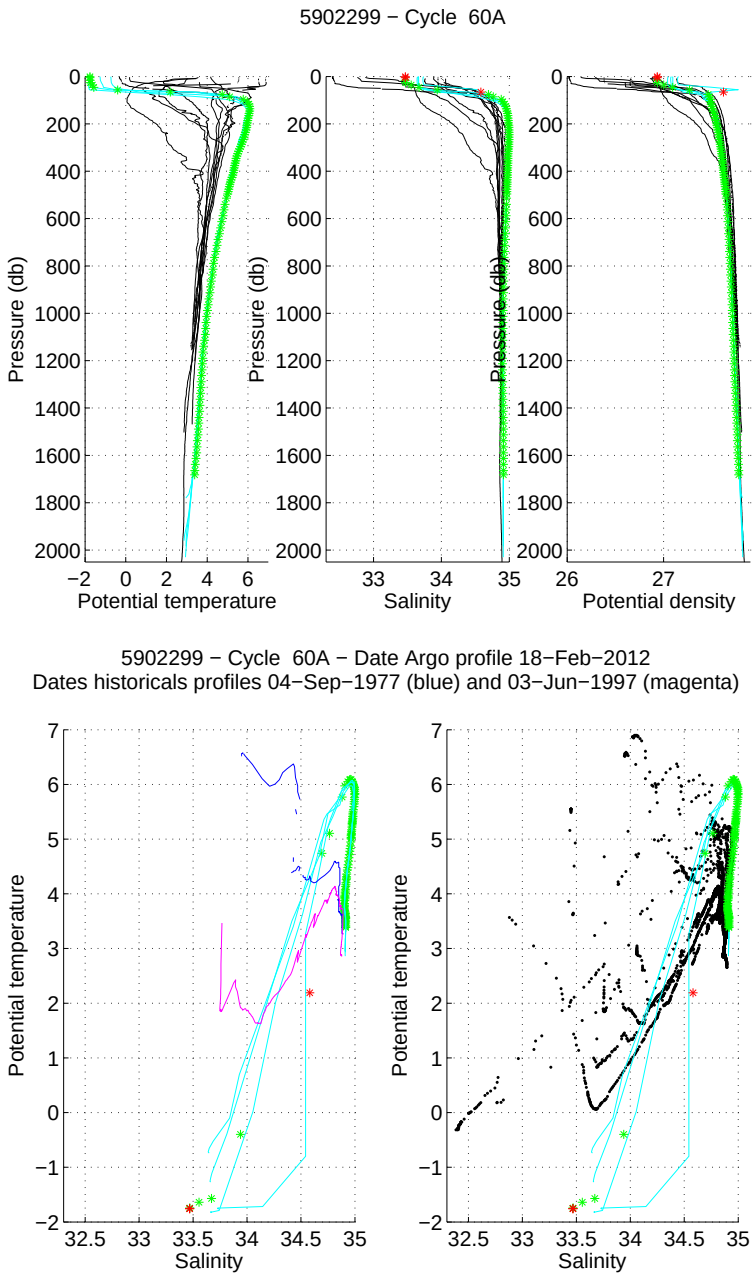


FIG. 64: Float 5902299, cycle 60A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

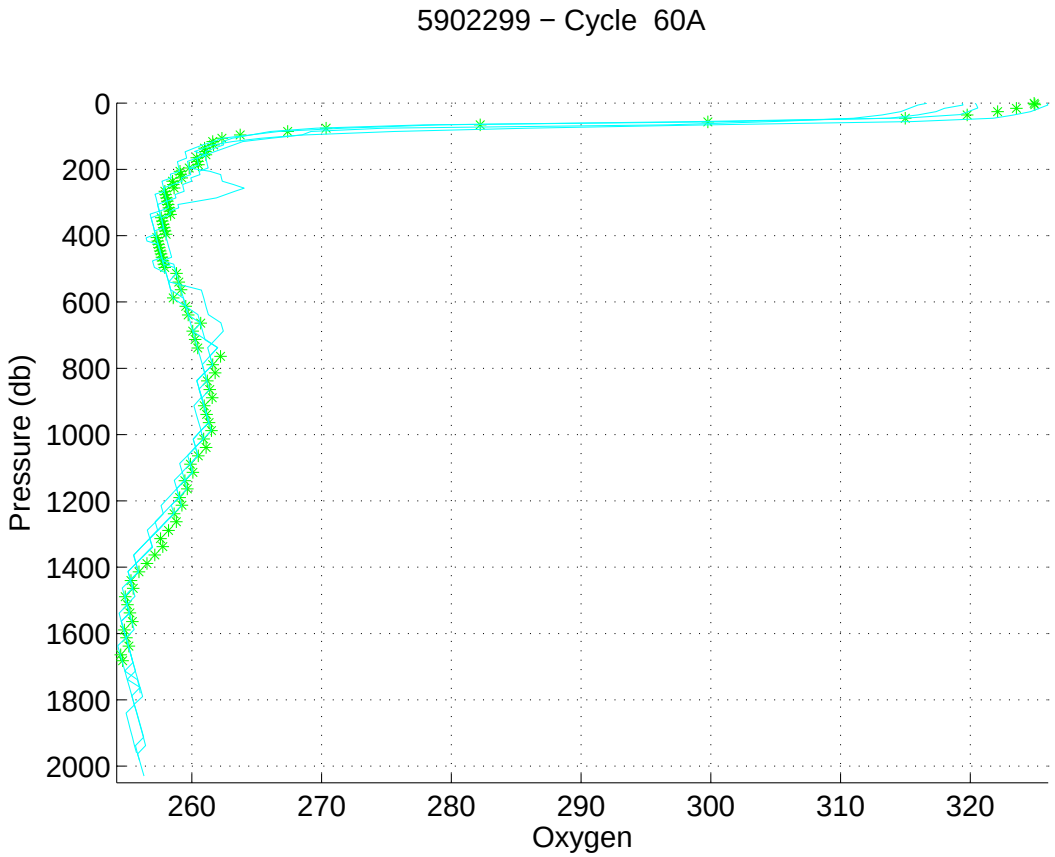


FIG. 65: Float 5902299, cycle 60A. Oxygen data.

25 Cycle 60A - Comparaison to the nearest ARGO profiles

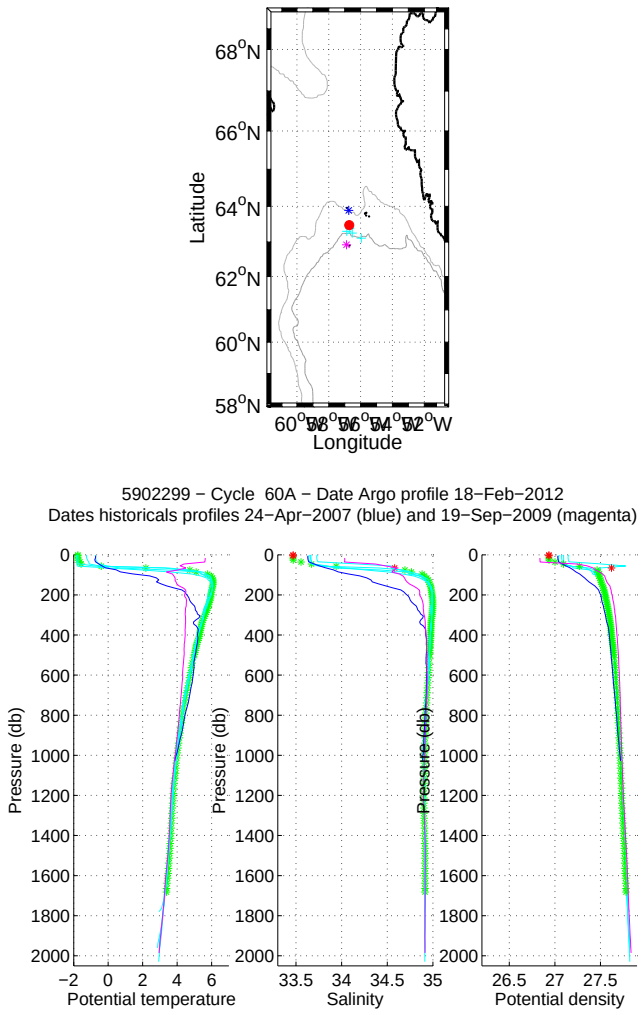


FIG. 66: Flotteur 5902299, cycle 60A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

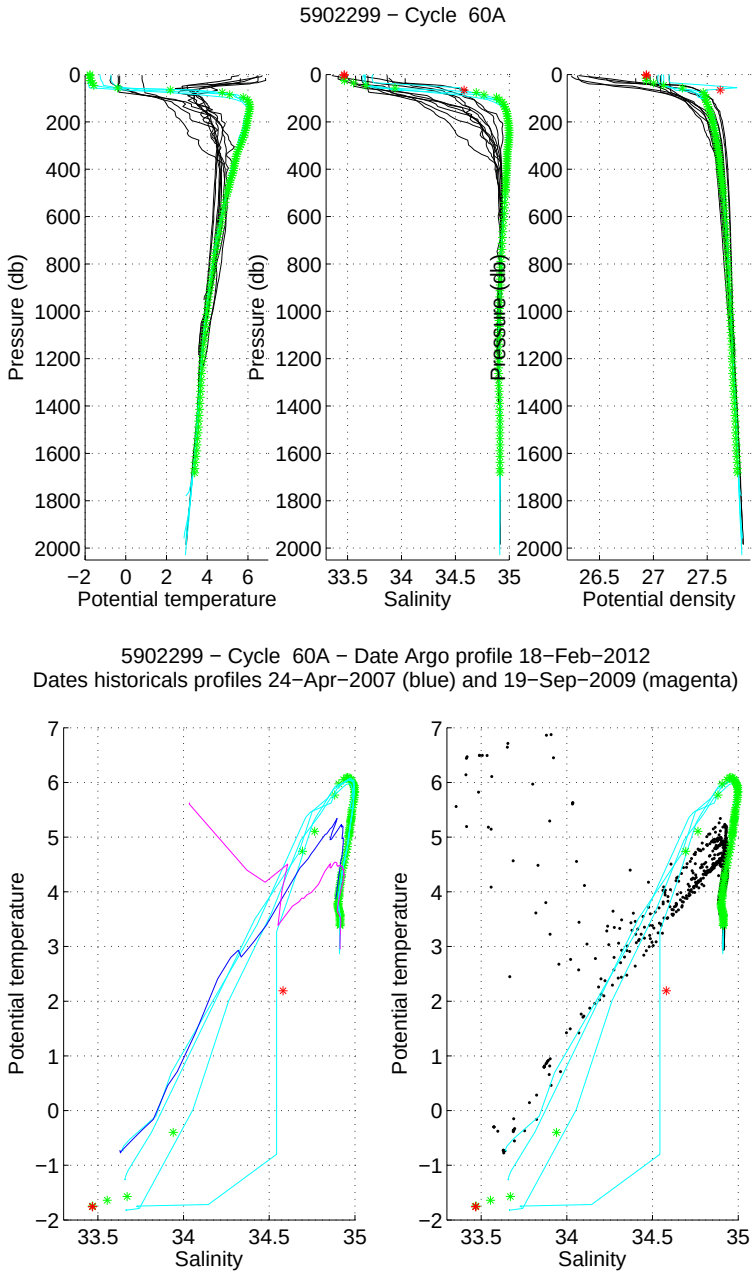


FIG. 67: Float 5902299, cycle 60A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

26 Cycle 62A - Comparaison to the nearest historical CTD profiles

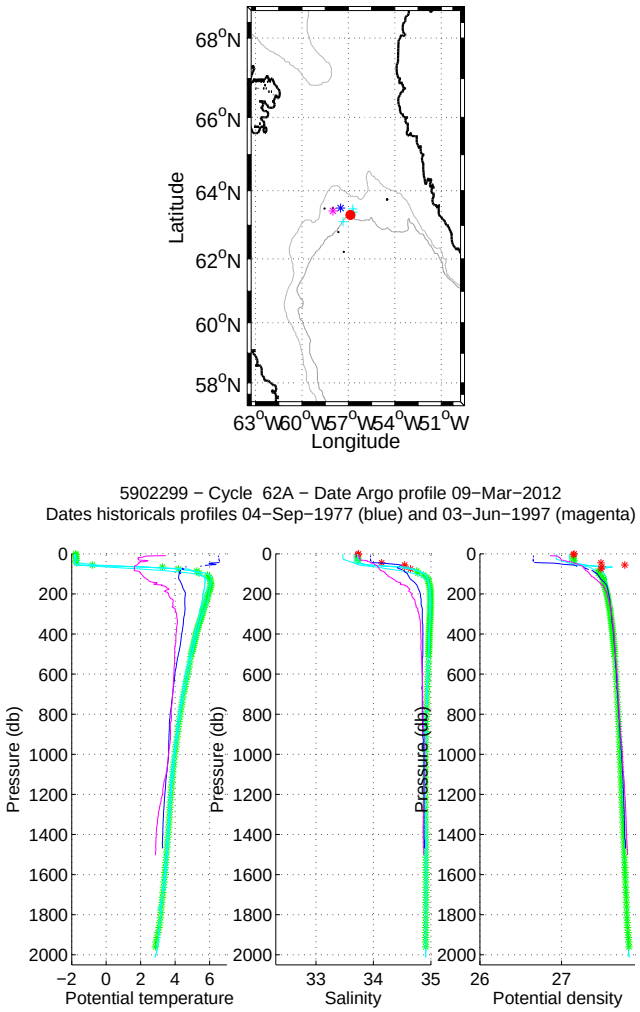


FIG. 68: Flotteur 5902299, cycle 62A. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the Argo profile (stars) and for the nearest CTD profile in time (magenta line) and for the nearest CTD profile in space (blue line). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

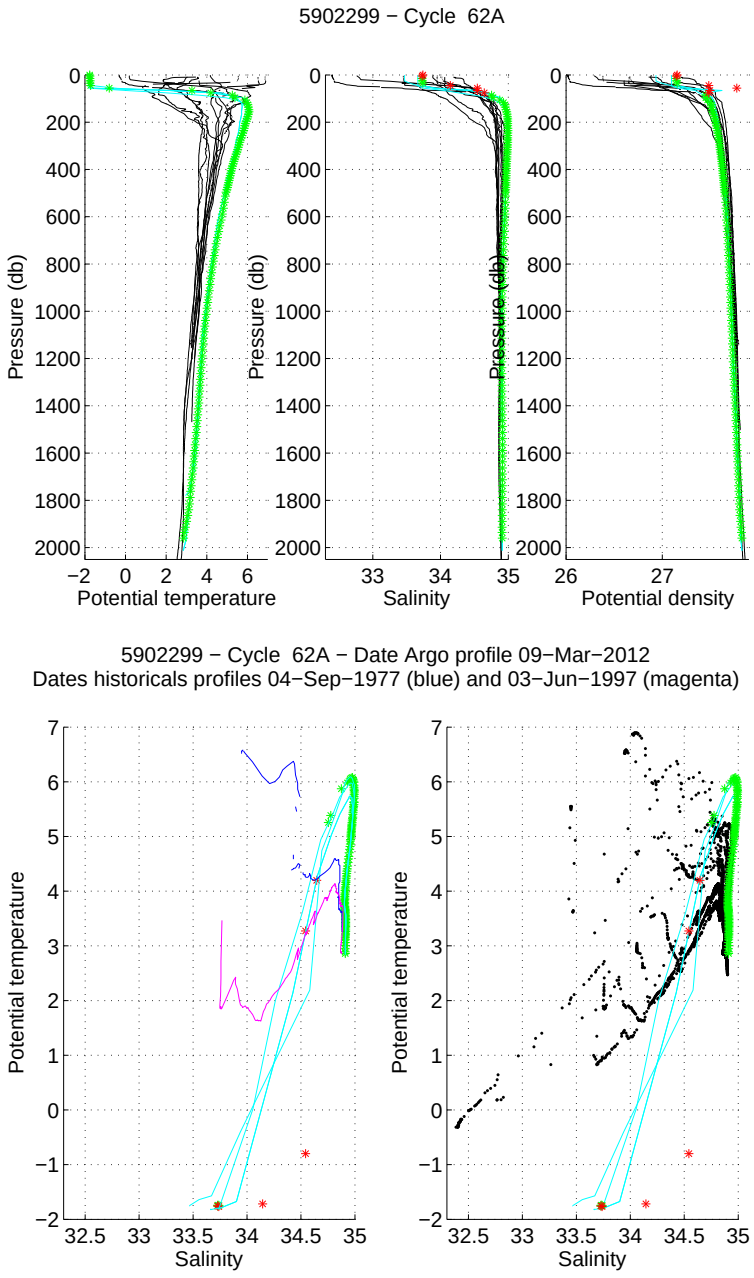


FIG. 69: Float 5902299, cycle 62A. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

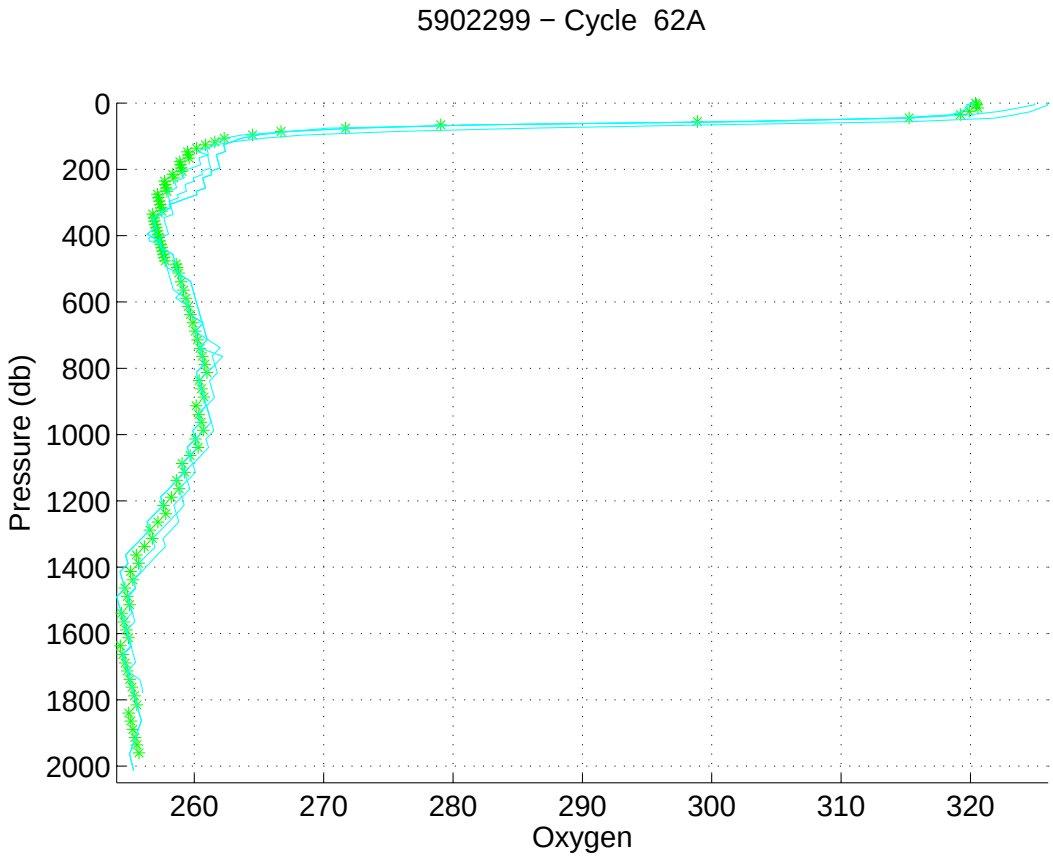


FIG. 70: Float 5902299, cycle 62A. Oxygen data.

27 Cycle 62A - Comparaison to the nearest ARGO profiles

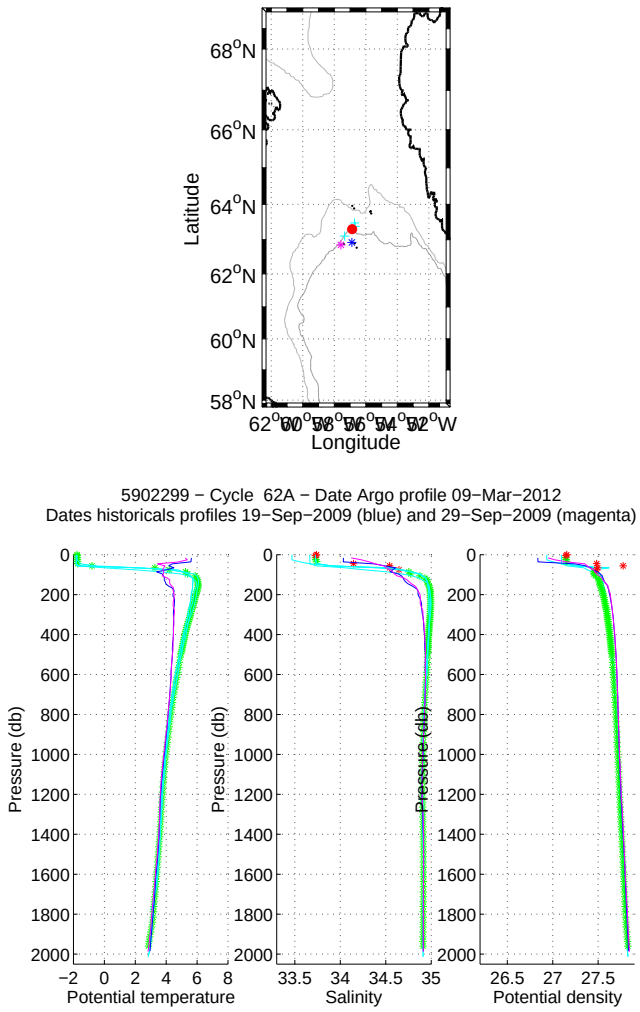


FIG. 71: Flotteur 5902299, cycle 62A. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure for the analysed Argo profile (stars) and for the nearest Argo profile in time (magenta line) and for the nearest Argo profile in space (blue line). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4).

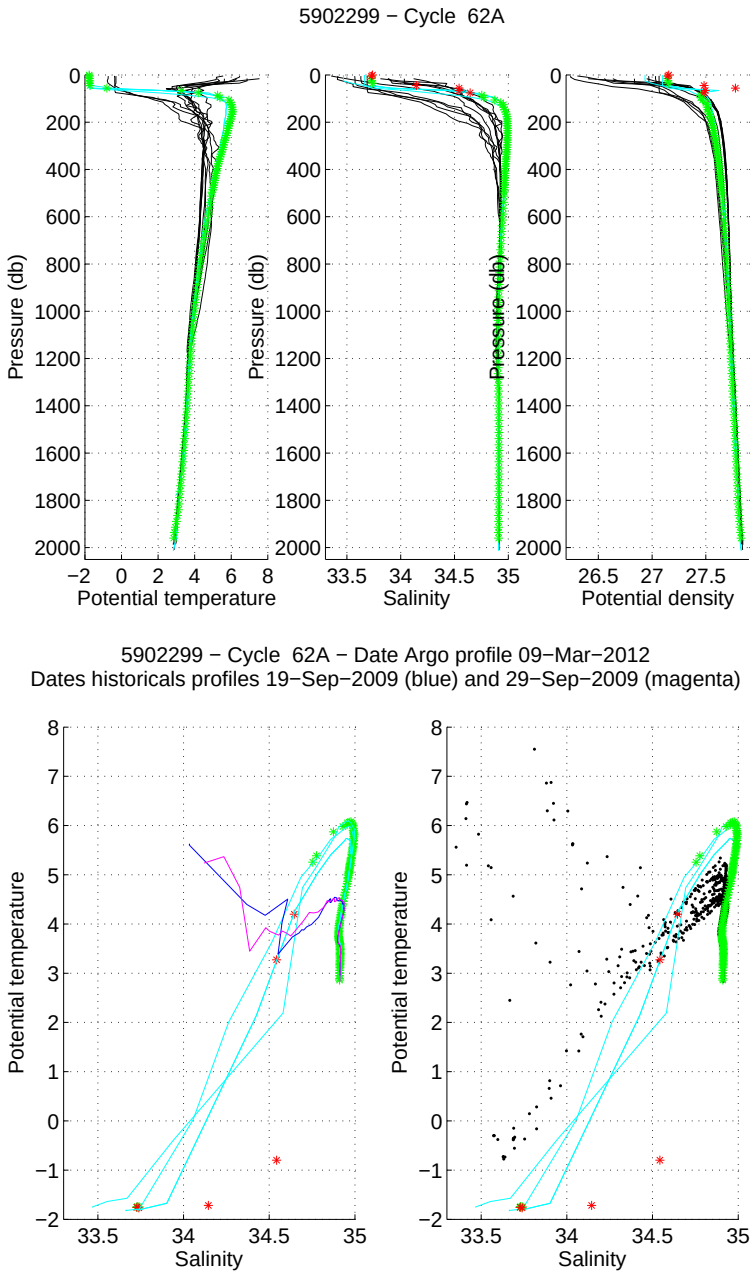


FIG. 72: Float 5902299, cycle 62A. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (green for a QC=1 ; blue for a QC=2 ; orange for a QC=3 and red for a QC=4). (Upper panels) Temperature (left panel), salinity (middle panel) and potential density (right panel) as function of pressure. (Lower panels) θ/S diagrams.

28 OW method, CONFIGURATION # 1

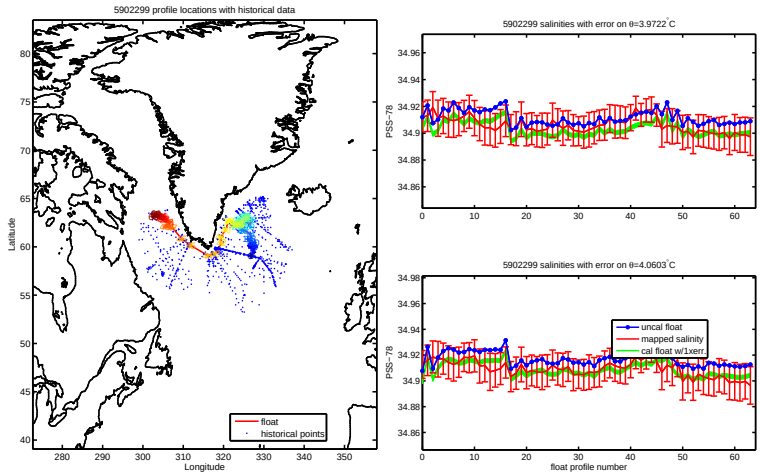


FIG. 73: Figures from the OW method. (Left) Position of the historical and float data. (Right) Comparison, on various θ levels, between the float data and the historical data interpolated at the float position.

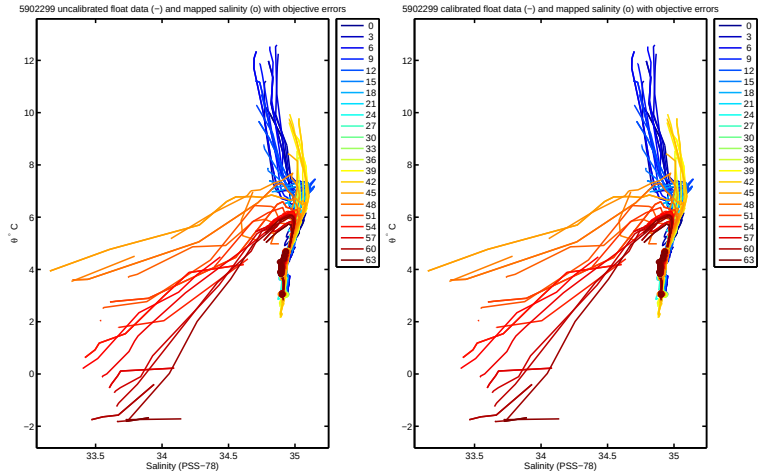


FIG. 74: Figures from the OW method. Compararison of the θ/S diagram of the float with the historial database. (left) raw data ; (right) corrected data using the OW correction.

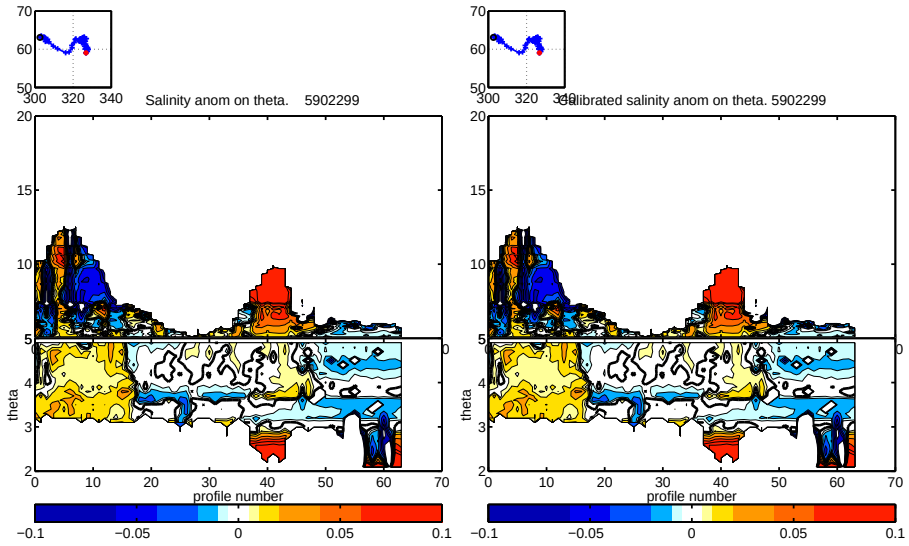


FIG. 75: Figures from the OW method. Salinity anomaly :(left) raw data ; (right) corrected data using the OW correction .

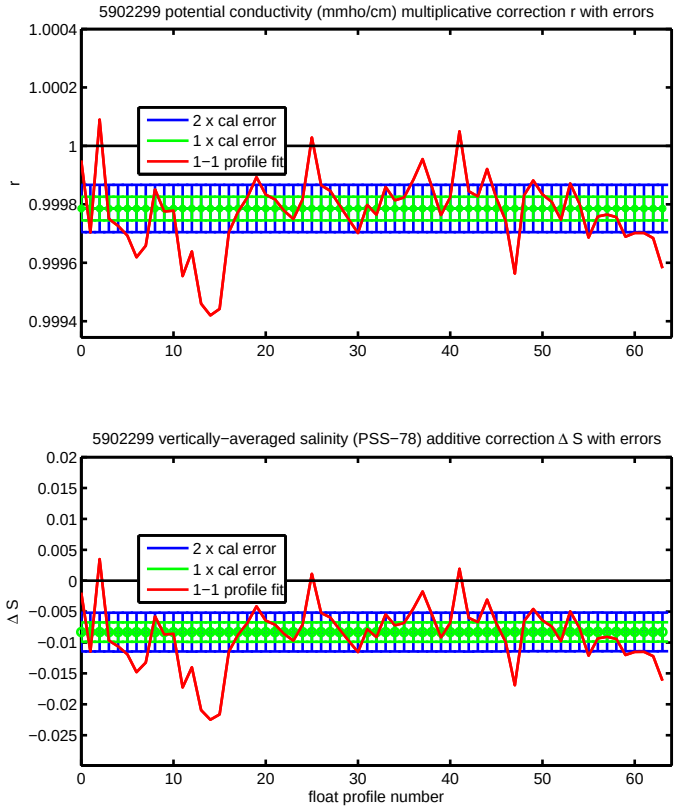


FIG. 76: Correction proposed by the OW method.

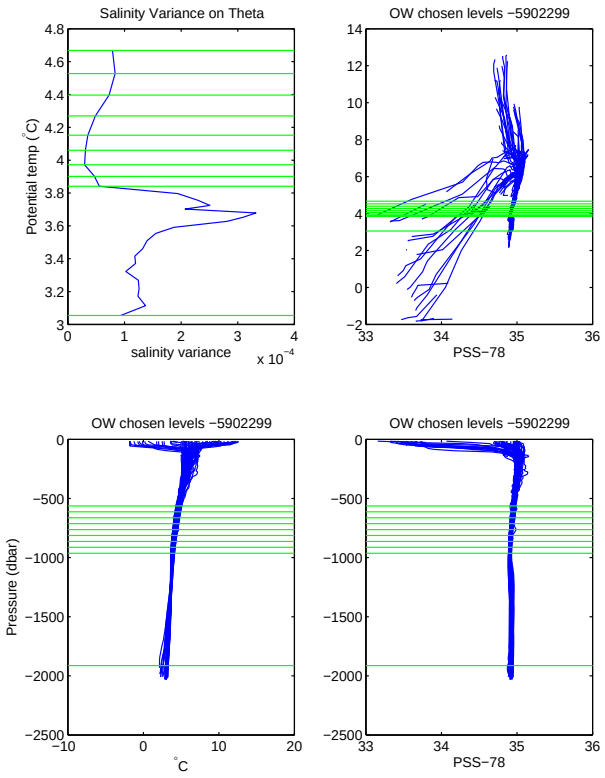


FIG. 77: Chosed levels by the OW method.

29 OW method, CONFIGURATION # 3

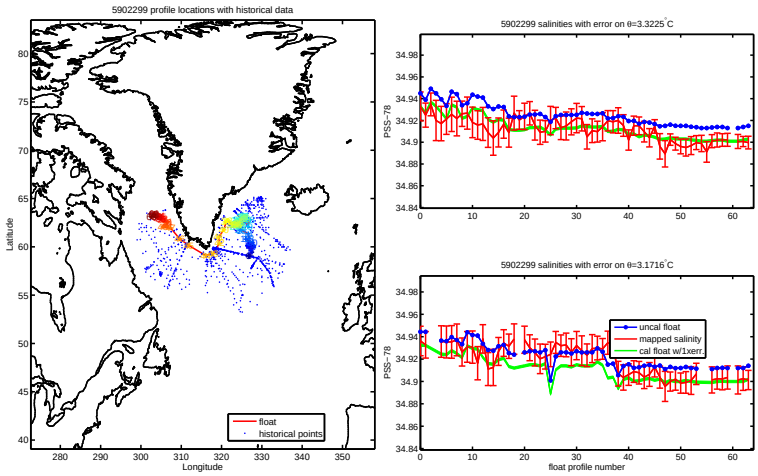


FIG. 78: Figures from the OW method. (Left) Position of the historical and float data. (Right) Comparison, on various θ levels, between the float data and the historical data interpolated at the float position.

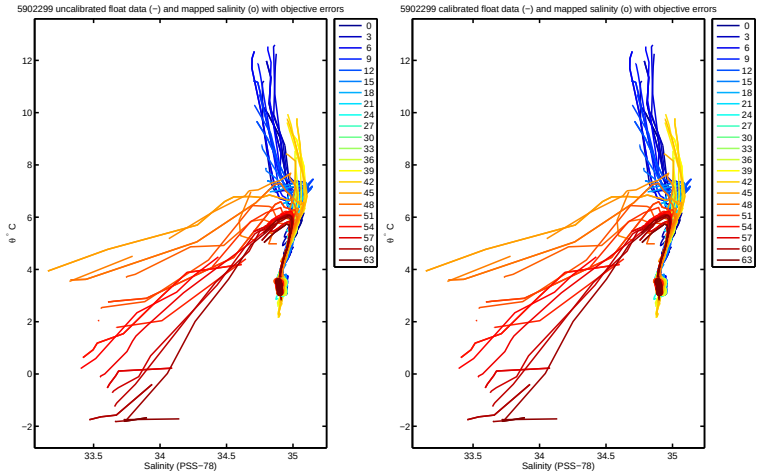


FIG. 79: Figures from the OW method. Compararison of the θ/S diagram of the float with the historial database. (left) raw data ; (right) corrected data using the OW correction.

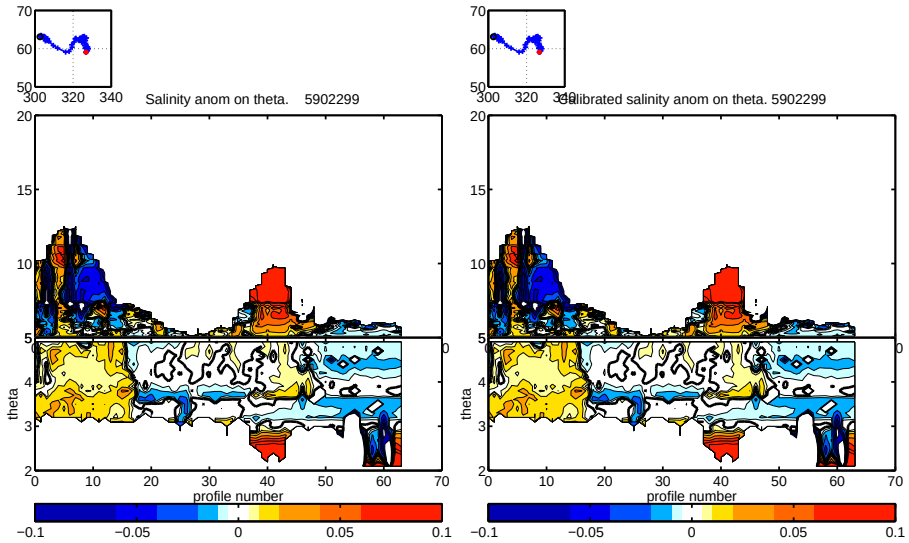


FIG. 80: Figures from the OW method. Salinity anomaly :(left) raw data ; (right) corrected data using the OW correction .

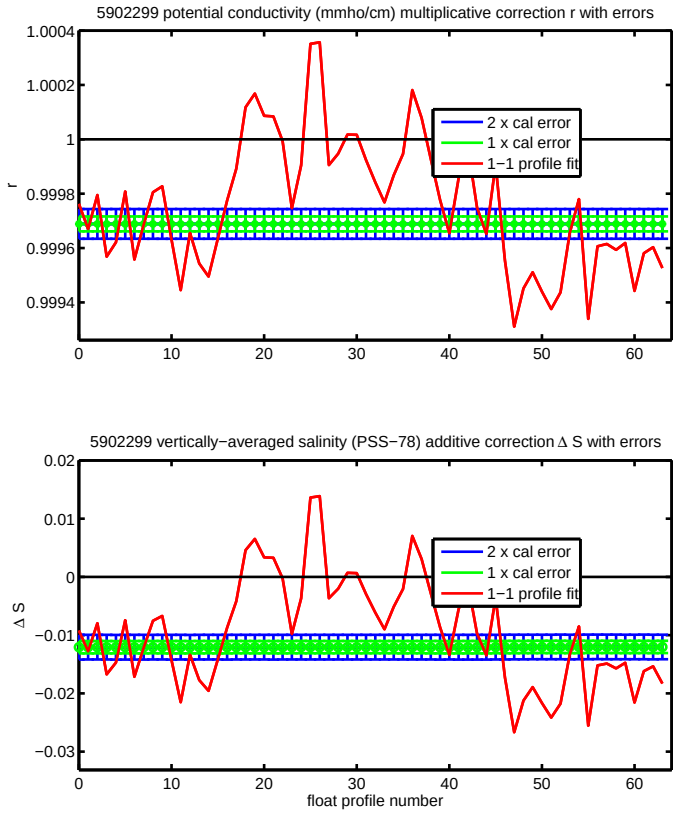


FIG. 81: Correction proposed by the OW method.

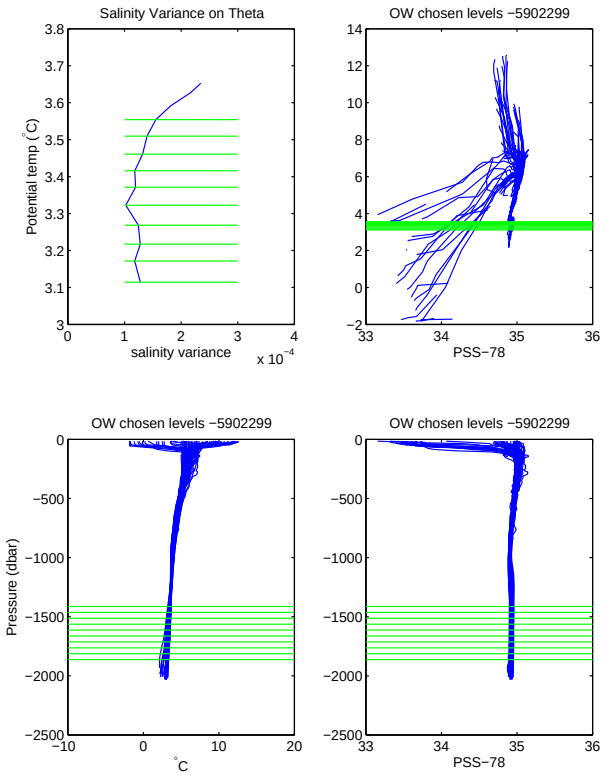


FIG. 82: Chosed levels by the OW method.

30 OW method, CONFIGURATION # 127

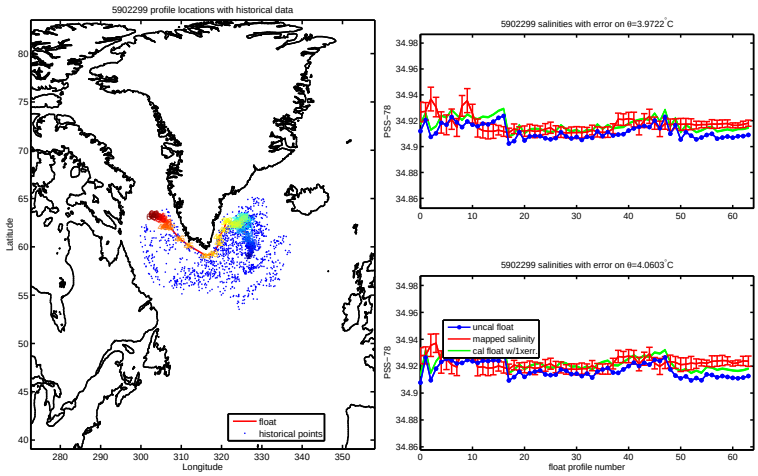


FIG. 83: Figures from the OW method. (Left) Position of the historical and float data. (Right) Comparison, on various θ levels, between the float data and the historical data interpolated at the float position.

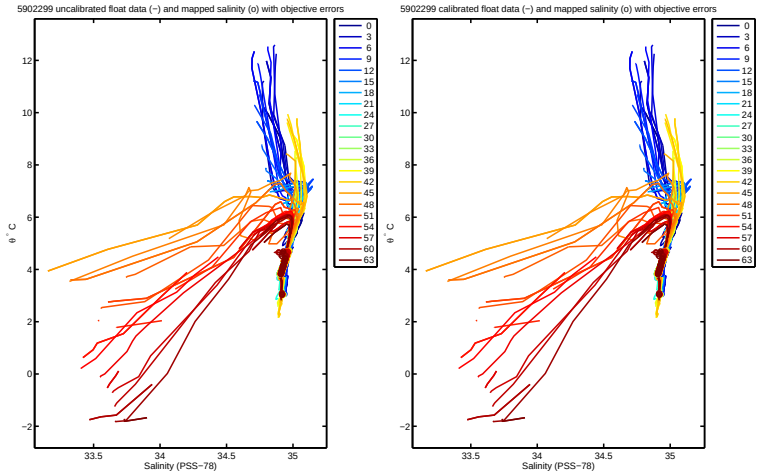


FIG. 84: Figures from the OW method. Compararison of the θ/S diagram of the float with the historial database. (left) raw data ; (right) corrected data using the OW correction.

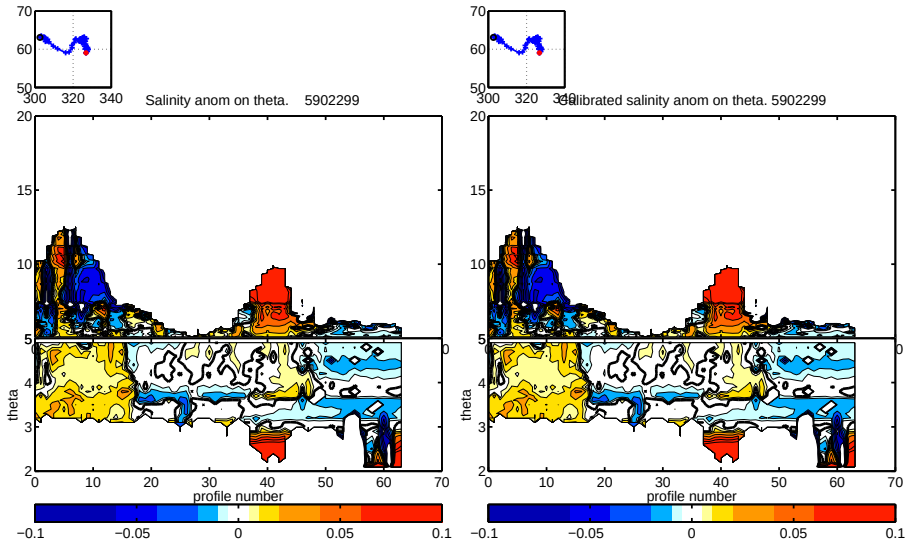


FIG. 85: Figures from the OW method. Salinity anomaly :(left) raw data ; (right) corrected data using the OW correction .

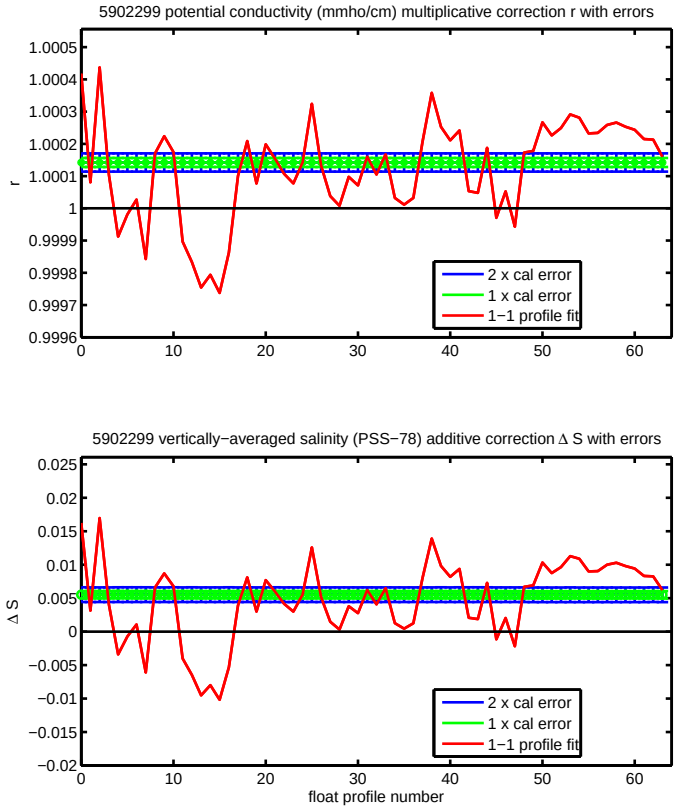


FIG. 86: Correction proposed by the OW method.

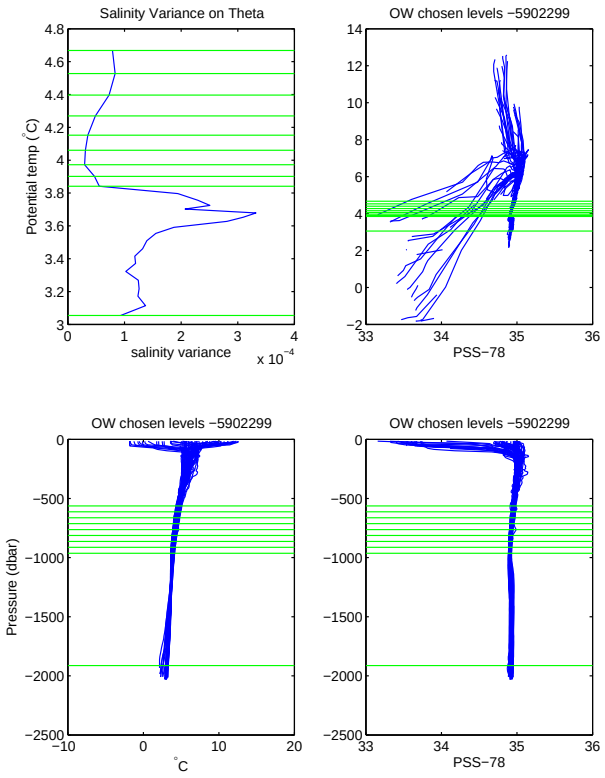


FIG. 87: Chosed levels by the OW method.

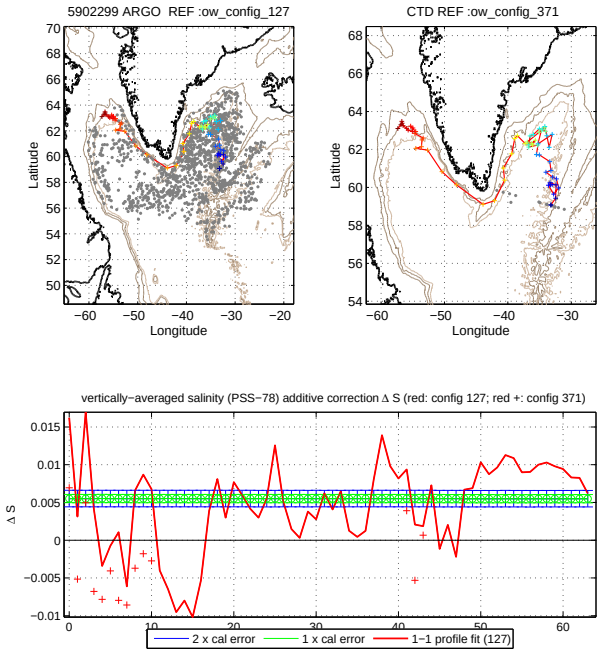


FIG. 88: Summary of the result obtained by the 2 OW methods. 127 : CTD+ARGO (left) ; 371 : CTD(right).