Rapport interne LPO/09-10

UMR 6523 **Laboratoire de Physique des Océans**	**DELAYED MODE QUALITY CONTROL OF OVIDE ARGO DATA** **FLOAT WMO 6900397**	
Date : **31 août 2009**	Auteurs : **Lagadec Catherine** **Thierry Virginie**	Archivage : **LPO**

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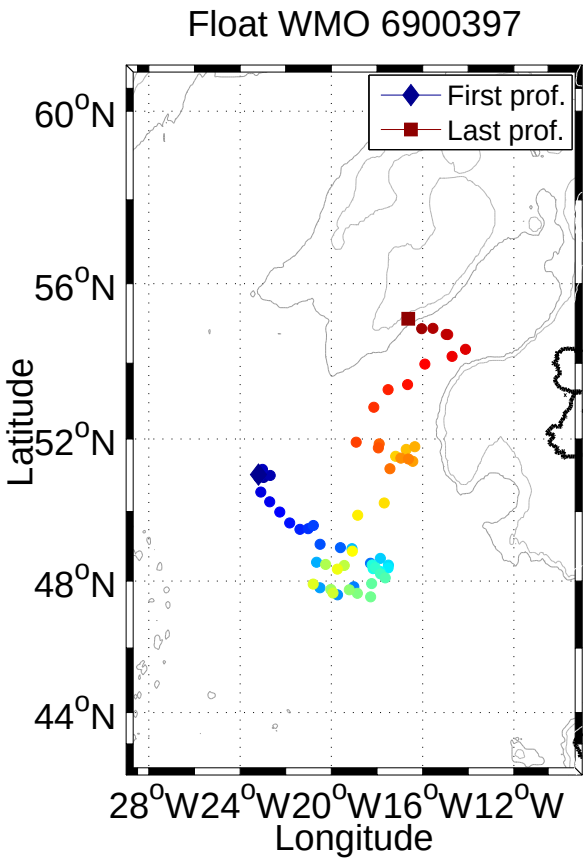
Carole Despinoy (ODE/LPO)

DELAYED MODE QUALITY CONTROL OF OVIDE ARGO DATA
FLOAT WMO 6900397



1 Presentation and DMQC summary

Number	Deployment (cycle OD) cycle OD	Last cycle
Provor WMO 6900397	06/06/2006 10h36	61
CTS3 05-S3-28	51.028 N 23.195 W	
Date of control	Float status	Last cycle
July 2009	Dead	11/02/2008
Coriolis transmission		31/08/2009

Tab. 1: Status of the float

1.1 QC flag checks and interesting profiles

Cycle	Parameter	Vertical level	Old flag	New flag	Comments	Coriolis transmission
16A	TEMP SAL	17,18	3	1		July 2007
17A	TEMP SAL	18	3	1		July 2007
33A	TEMP SAL	all	3	1		July 2007
all cycles except 0D	SAL	surface	1	4	untrustable data	31-08-09
20A	SAL	800 m			Interesting feature near 800 m	31-08-09

Tab. 2: Float 6900397. Summary of the modifications of the real-time QC flags and of the interesting or suspicous data.

Important : the resolution is equal to 50 dbar from the surface to 500 dbar, then 60 dbar from 500 to 2000 dbar.

1.2 Salinity correction from the OW method

We cannot see any evidence of a drift or bias in the salinity measurements. We thus conclude that it is not necessary to correct the salinity data. Error bars are maximum value between 0.01 and that determined from the OW method with parameters from the OW configuration 3.

2 Data

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

Tab. 3: Parameters of the OW method.

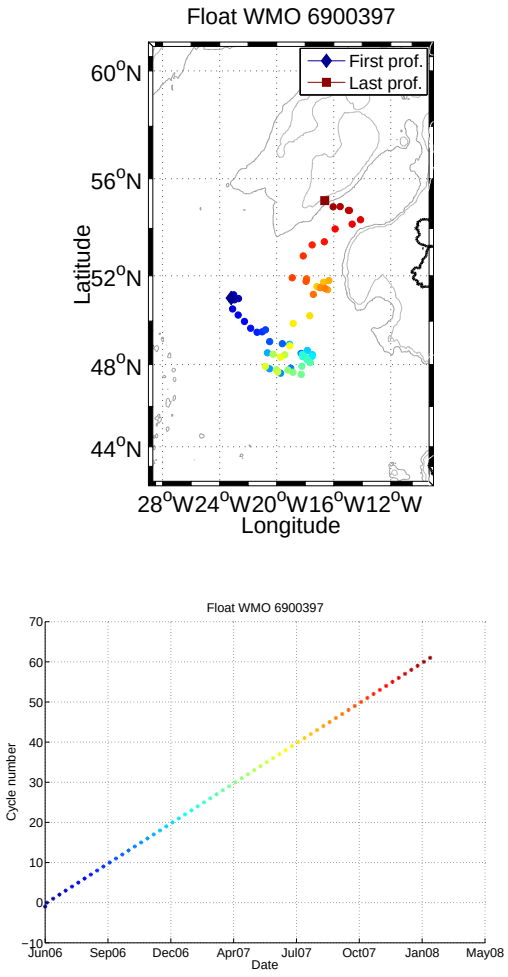


FIG. 1: Profiles position and relationship between cycle number, date and color.

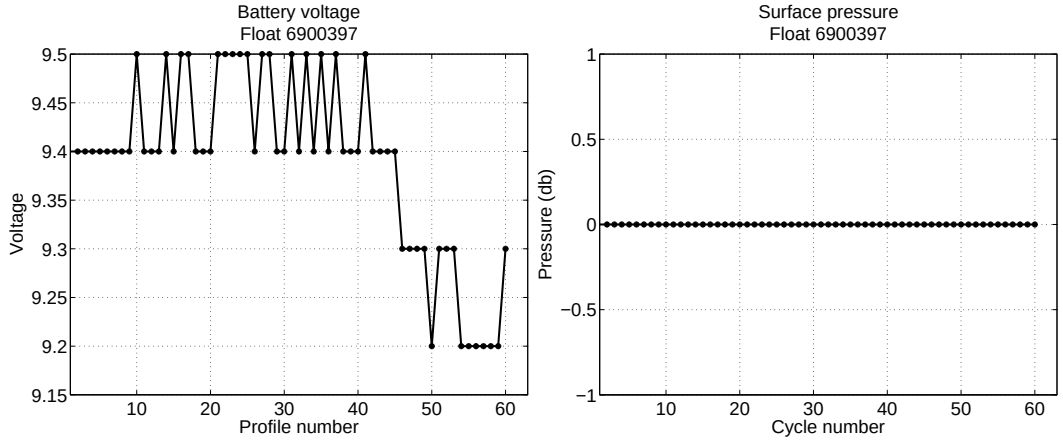


FIG. 2: Surface pressure

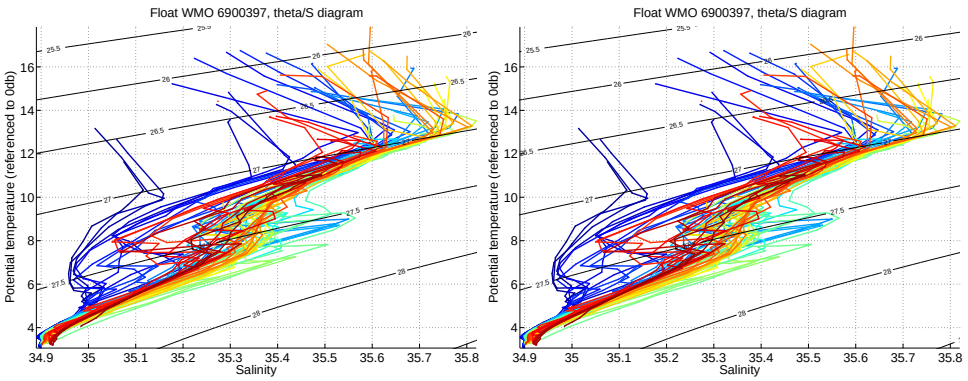


FIG. 3: θ/S diagrams. (Left panel) Flags are not taken into account. (Right panel) Quality flags are taken into account.

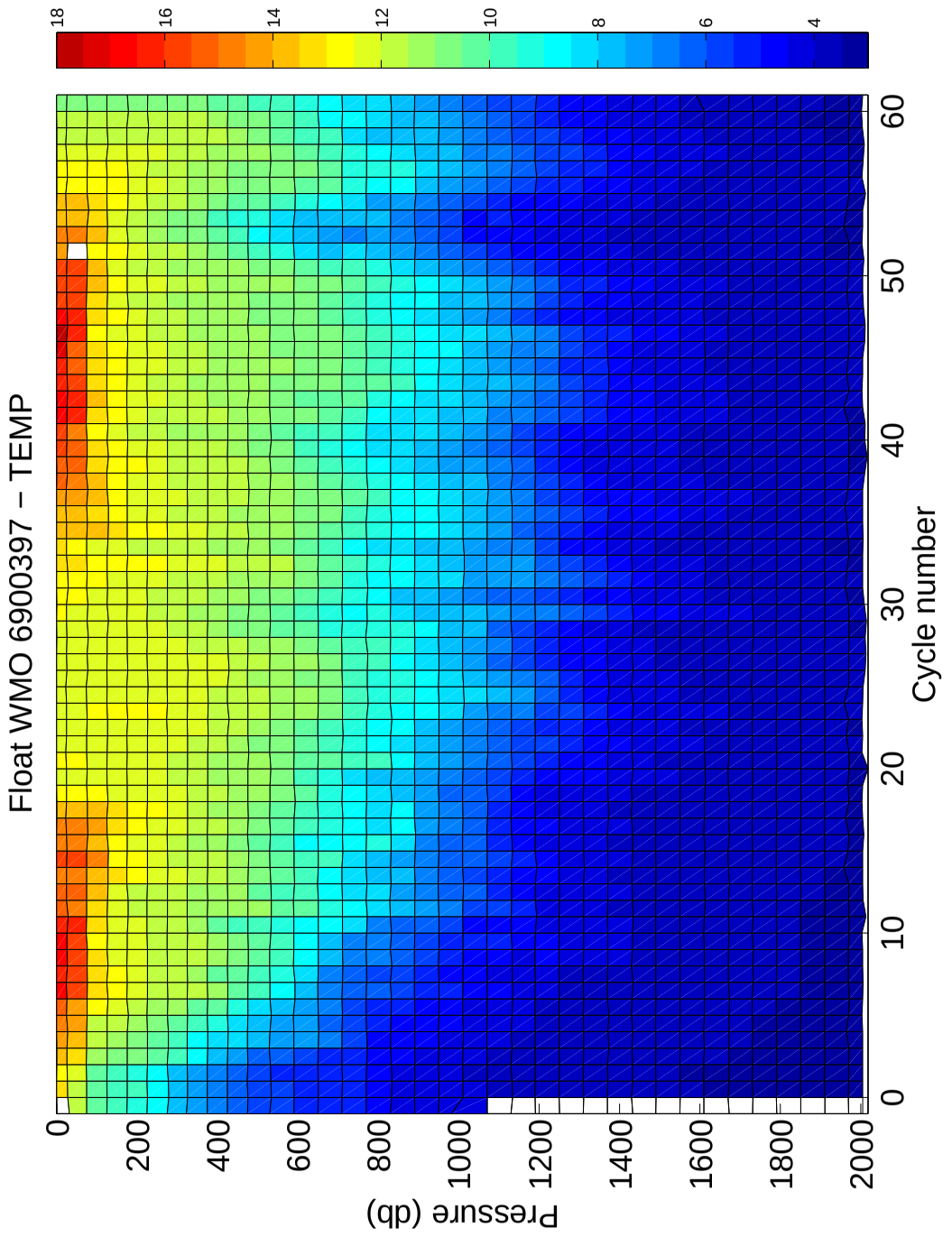


FIG. 4: Temperature section along the float trajectory. Quality flags are not taken into account.

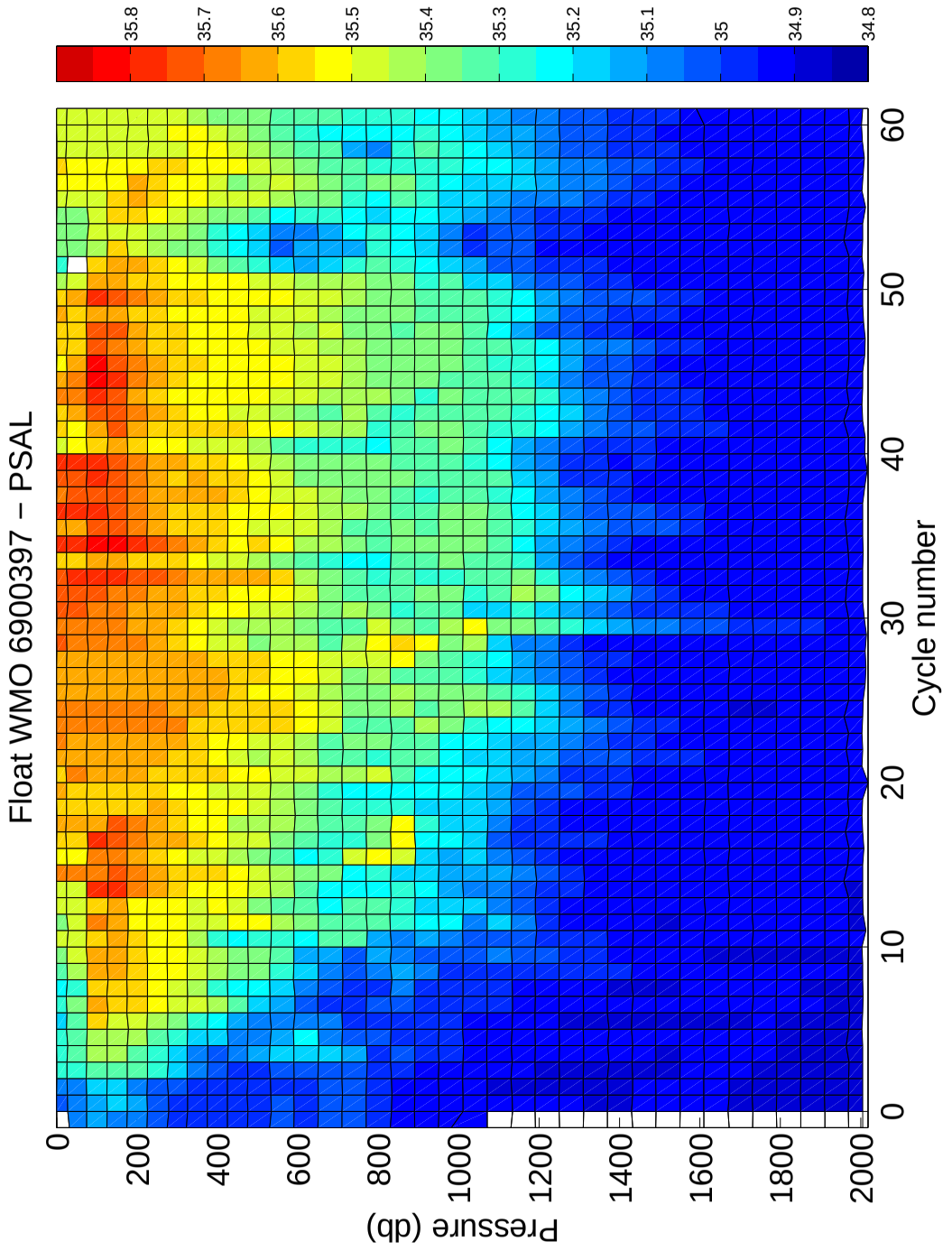


FIG. 5: Salinity section along the float trajectory. Quality flags are not taken into account.

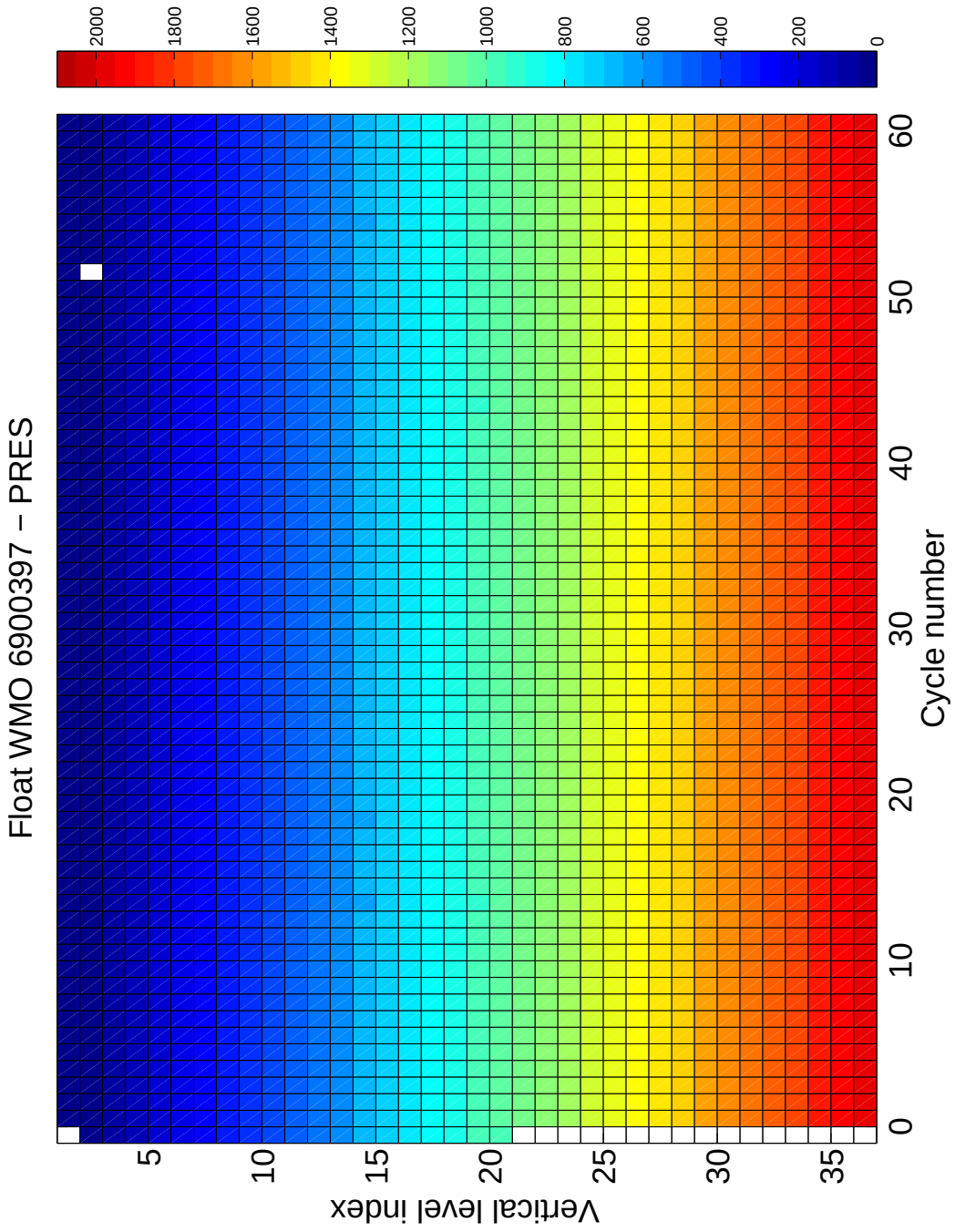


FIG. 6: Pression as fonction of cycle number and vertical level index along the float trajectory. Quality flags are taken into account.

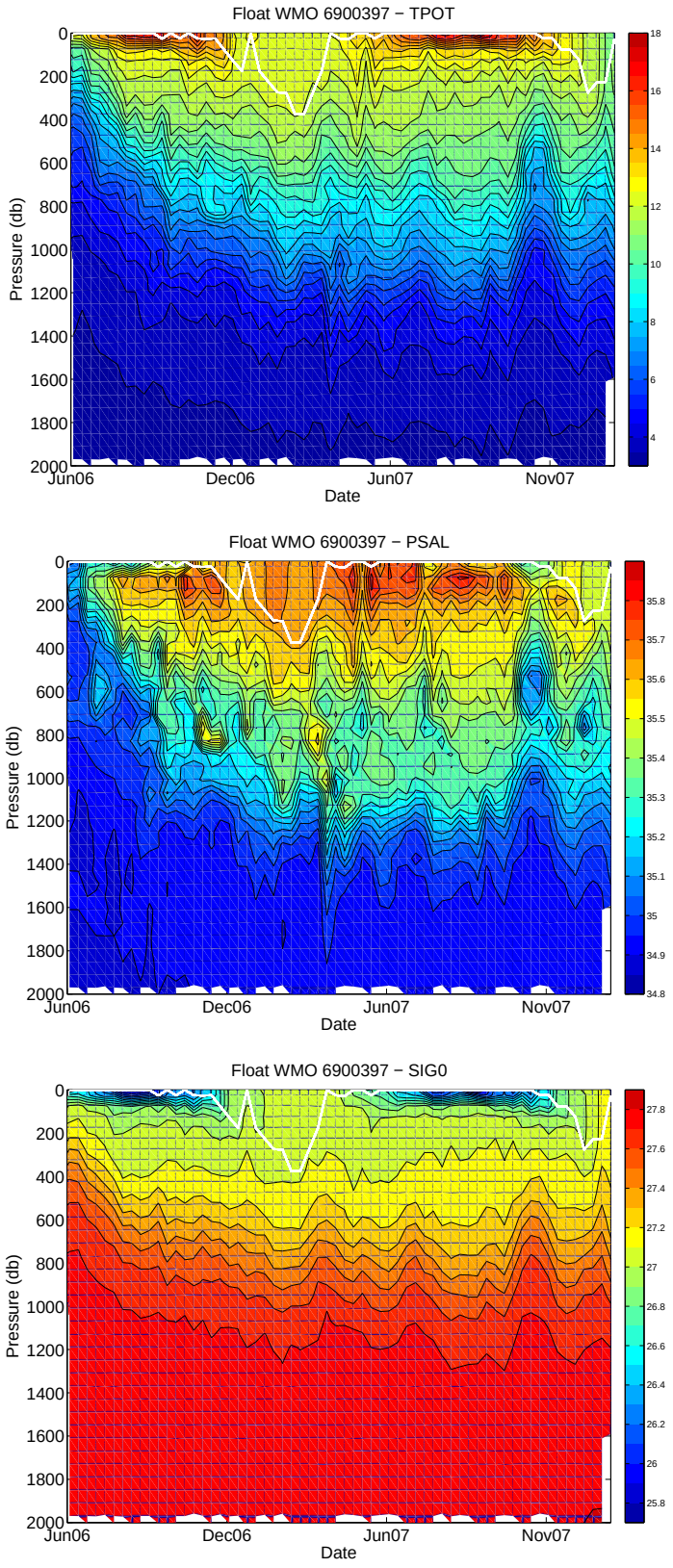


FIG. 7: Potential temperature, salinity and potential density sections along the float trajectory (interpolated on standard levels). Quality flags are taken into account.

3 Comparison to the OVIDE 2006 nearest CTD profile

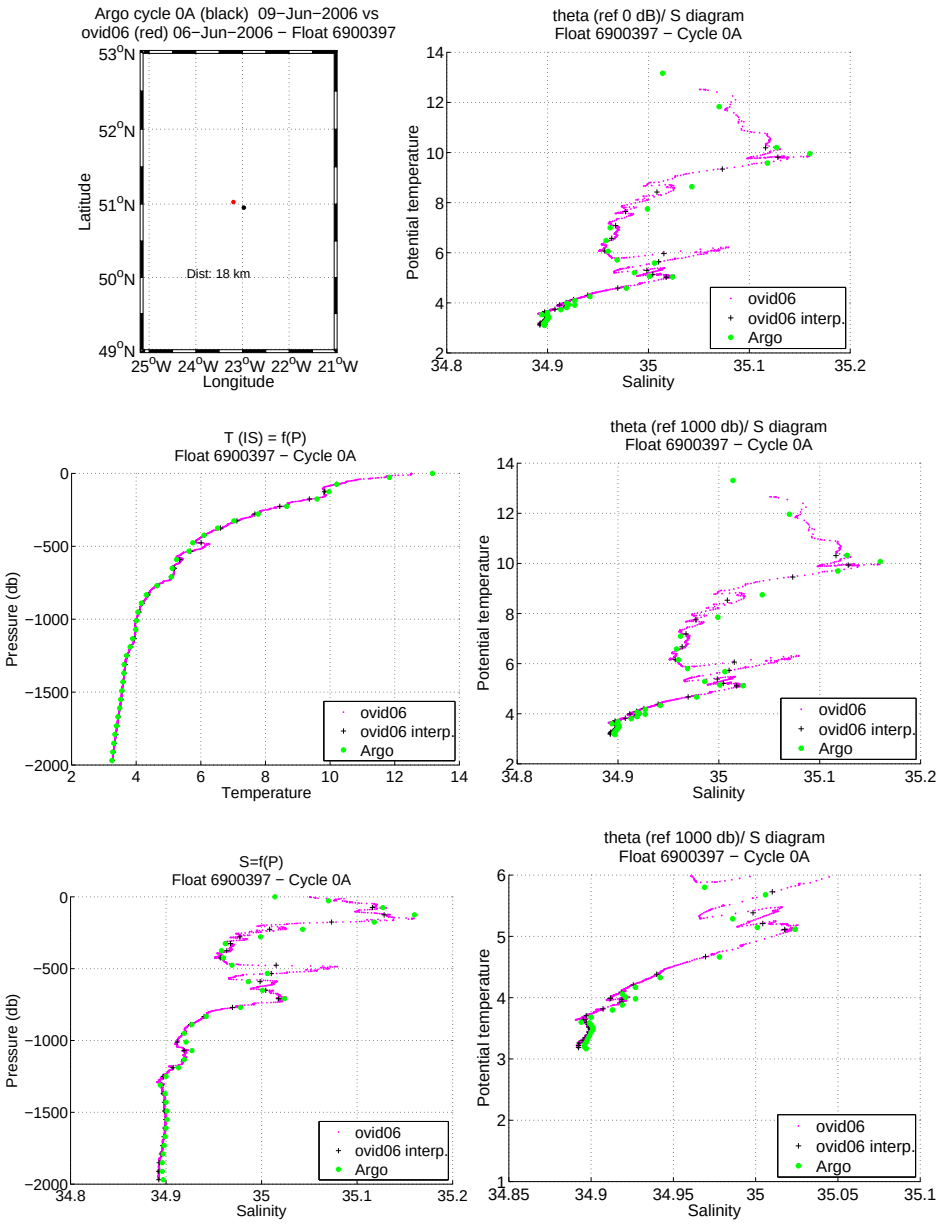


FIG. 8: Comparison of the cycle 0A with the nearest CTD profile done after the float deployment.

4 Cycle 20 - Comparaison to the nearest historical CTD profiles

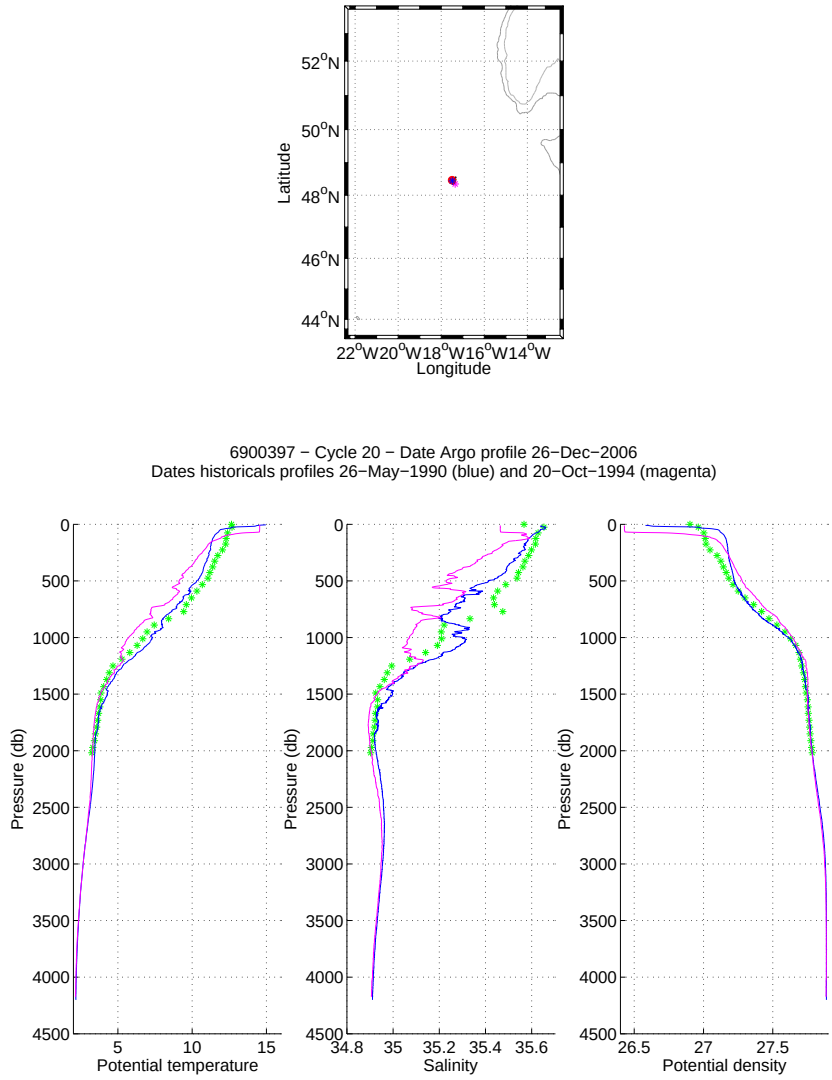


FIG. 9: Flotteur 6900397, cycle 20. Upper panel : Position of the Argo profile (red) and of the nearest CTD profiles (black). The nearest CTD profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function of pressure 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).

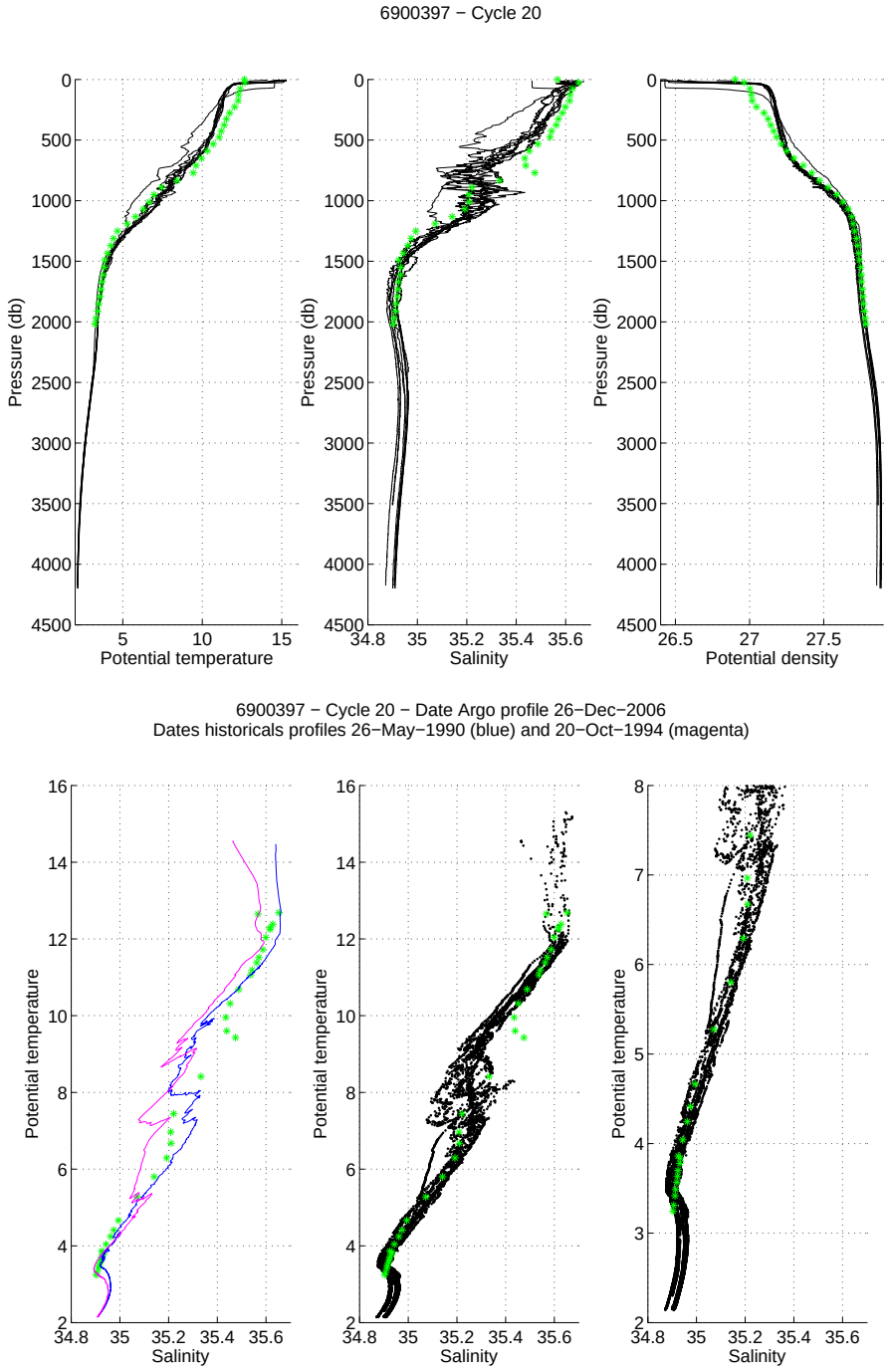


FIG. 10: Float 6900397, cycle 20. The Argo profile (stars) is compared to the nearest CTD profiles (black line) and to two specific profiles : the nearest profile in time (magenta) and the nearest profile in space (blue). The color of the Argo profile represents the QC flag (green for a QC=1 ; blue for 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.

5 Cycle 20 - Comparaison to the nearest ARGO profiles

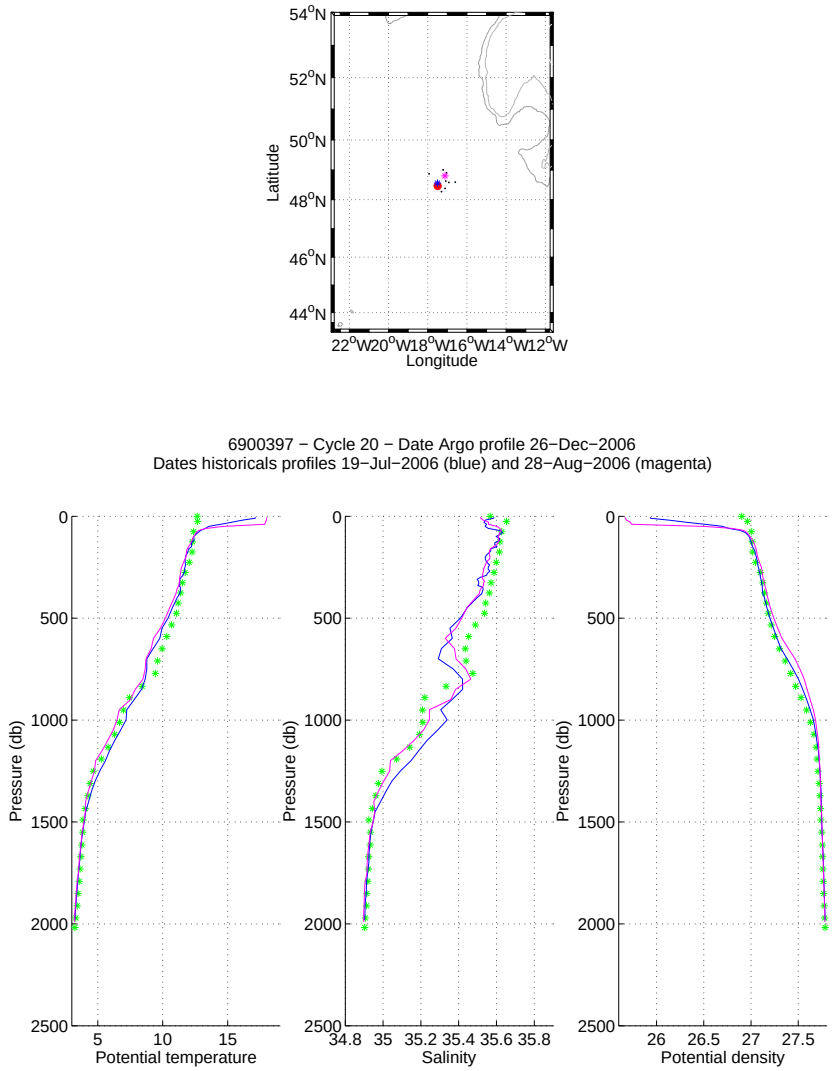


FIG. 11: Flotteur 6900397, cycle 20. Upper panel : Position of the analysed Argo profile (red) and of the nearest Argo profiles (black). The nearest Argo profile in time is in magenta while the nearest CTD profile in space is in blue. Lower panels : Temperature, salinity and potential density as function 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).

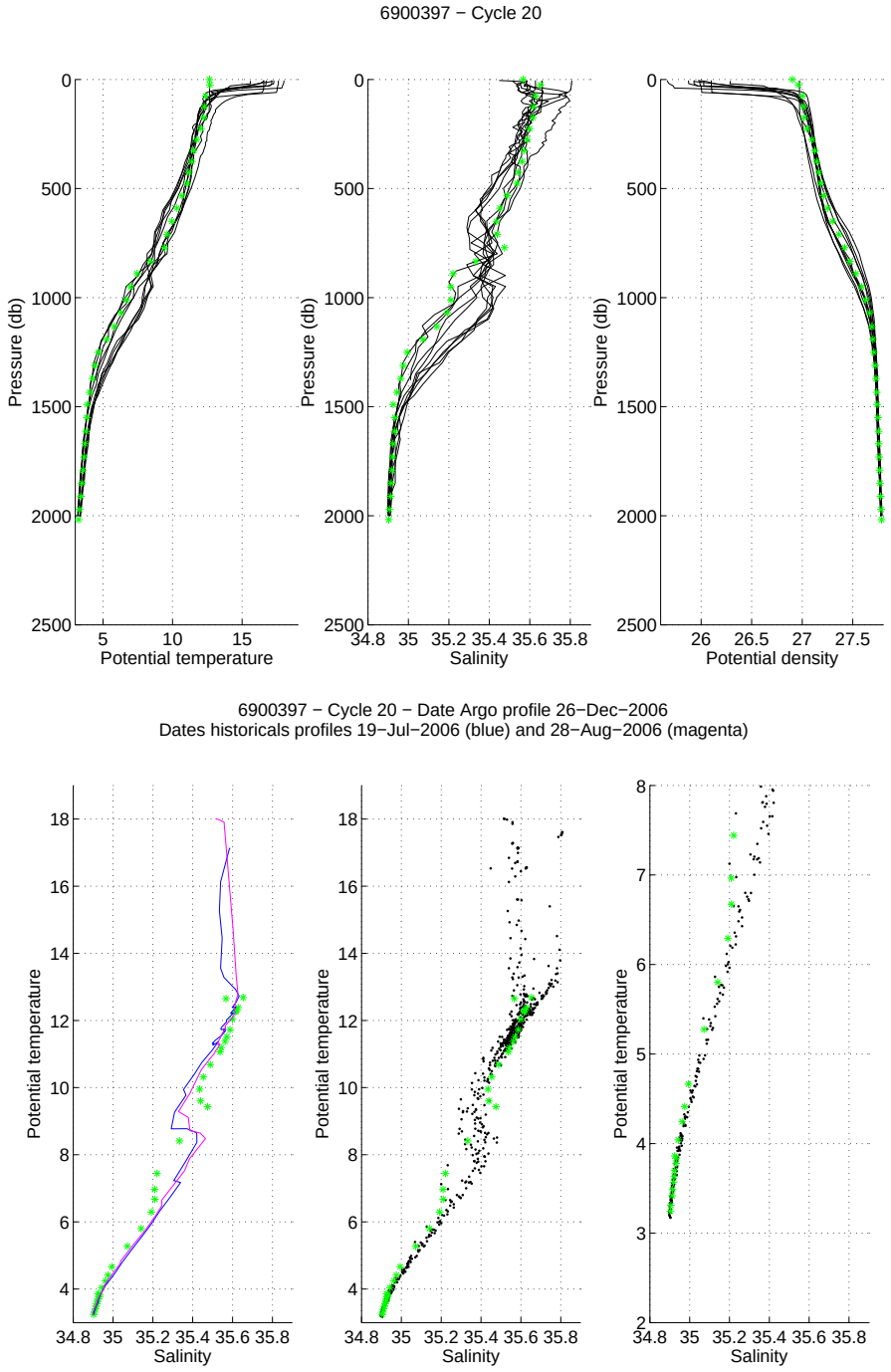


FIG. 12: Float 6900397, cycle 20. The analysed Argo profile (stars) is compared to the nearest Argo profiles (black line) and to two specific profiles : the nearest Argo profile in time (magenta) and the nearest Argo profile in space (blue). The color of the analysed Argo profile represents the QC flag (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 OW method, CONFIGURATION # 3

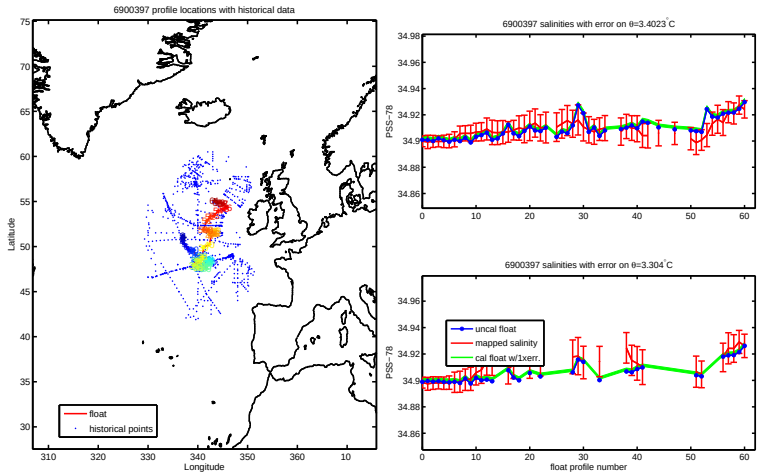


FIG. 13: Figures from the OW method. (Left) Position of the historical and float data. (Right) Comparison, on various θ levels, between the float data and the historical data interpolated at the float position.

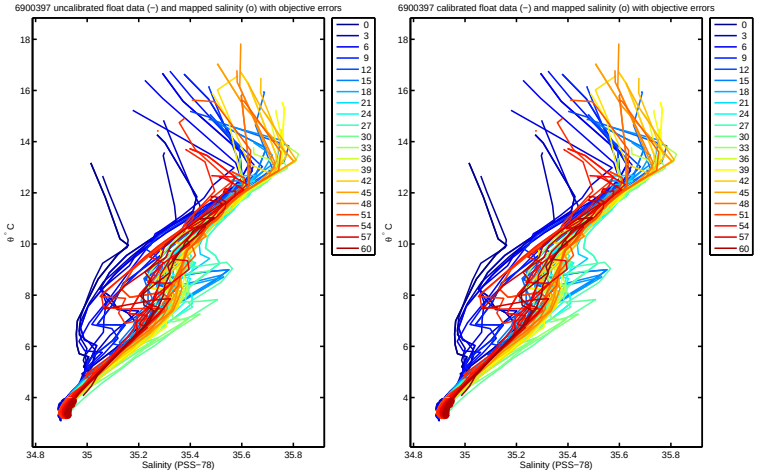


FIG. 14: Figures from the OW method. Compararison of the θ/S diagram of the float with the historial database. (left) raw data ; (right) corrected data using the OW correction.

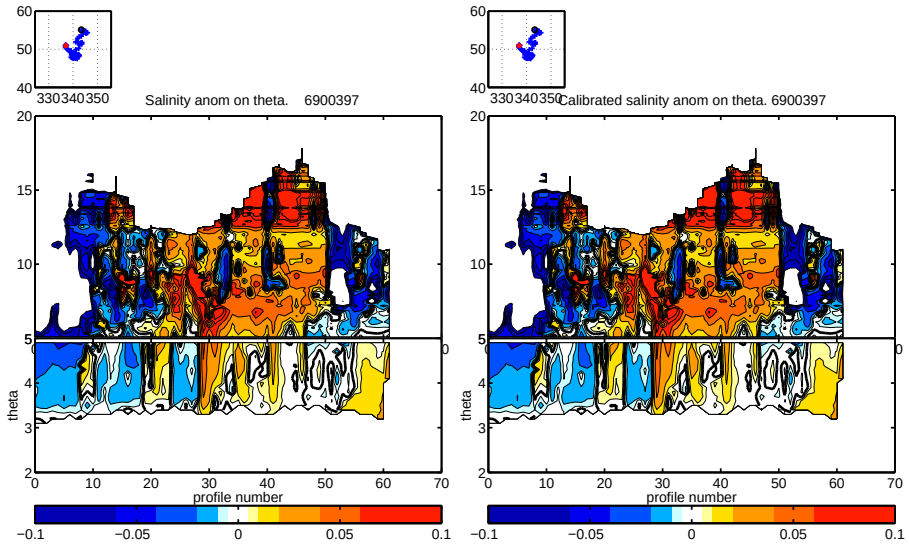


FIG. 15: Figures from the OW method. Salinity anomaly :(left) raw data ; (right) corrected data using the OW correction.

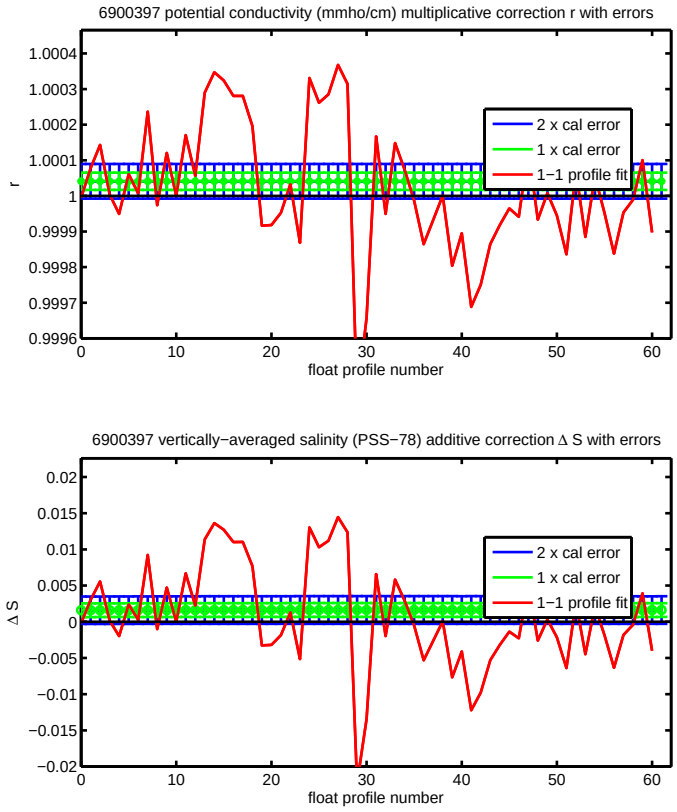


FIG. 16: Correction proposed by the OW method.

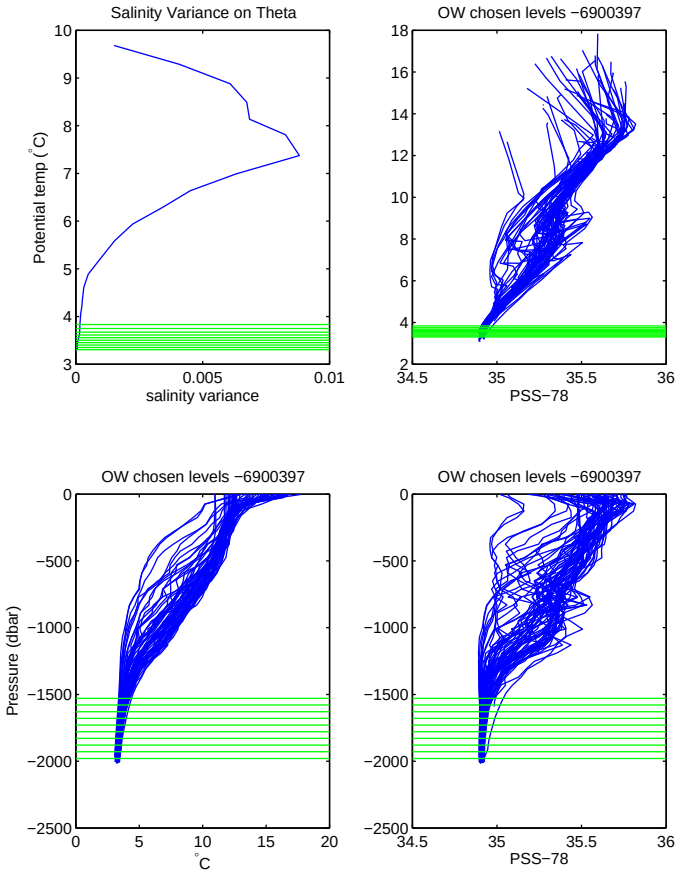


FIG. 17: Chosed levels by the OW method.