

DMQC of the float 3901905 (MOCCA-EU, Arvor I, status: active)

Profiles: 1-193 (1D)

Objective Mapping Parameters

% max number of historical casts used in objective mapping

CONFIG_MAX_CASTS=300

% 1=use PV constraint, 0=don't use PV constraint, in objective mapping

MAP_USE_PV=0

% 1=use SAF separation criteria, 0=don't use SAF separation criteria, in objective mapping

MAP_USE_SAF=0

% spatial decorrelation scales, in degrees

MAPSCALE_LONGITUDE_LARGE=5

MAPSCALE_LONGITUDE_SMALL=0.5

MAPSCALE_LATITUDE_LARGE=4

MAPSCALE_LATITUDE_SMALL=0.5

% cross-isobath scales, dimensionless, see BS(2005)

MAPSCALE_PHI_LARGE=0.5

MAPSCALE_PHI_SMALL=0.1

% temporal decorrelation scale, in years

MAPSCALE_AGE=10

MAPSCALE_AGE_LARGE=50

% exclude the top xxx dbar of the water column

MAP_P_EXCLUDE=700

% only use historical data that are within +/- yyy dbar from float data

MAP_P_DELTA=250

PARAMETERS =

PRES

TEMP

PSAL

SCIENTIFIC_CALIB_EQUATION =

(profiles 1-50)

PRES_ADJUSTED = PRES

'none '

PSAL_ADJUSTED = PSAL

(profiles 51-140)

'PRES_ADJUSTED = PRES '

'none '

'PSAL_ADJUSTED = PSAL + Delta_S, where Delta_S is calculated from a potential conductivity (ref to 0 dbar) multiplicative adjustment term r '

(profiles 141-193)

'PRES_ADJUSTED = PRES '

'none '

'none '

PARAMETER_ADJUSTED_QC =

See below, figures 1, 2, 3.

SCIENTIFIC_CALIB_COEFFICIENT =

(profiles 1-50)

'none '

'none '

'none '

(profiles 51-140)

'none '

'none '

'r= 0.9997 (+/- 5e-05) , vertically averaged dS =-0.011578 (+/- 0.01) '

(profiles 141-193)

'none '

'none '

'none '

SCIENTIFIC_CALIB_COMMENT =

(profiles 1-50)

'No adjustment was necessary -Calibration error is manufacturer specified accuracy '

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'No evidence of salinity drift. No adjustment is needed. Error = maximum [statistical uncertainty, 0.01]. OWC Method, 3.0, -CTD2021V02 & ARGO2021V03 -Map scales: x=5, 0.5; y=4, 0.5. P_Vort=0. MAP_USE_SAF=0,AGE_LARGE=50, AGE_SMALL=10. '

(profiles 51-140)

'No adjustment was necessary -Calibration error is manufacturer specified accuracy '

'No adjustment was necessary -Calibration error is manufacturer specified accuracy '

'Salinity drift detected. OWC adjustment is needed. Error = maximum [statistical uncertainty, 0.01]. OWC Method, 3.0, -CTD2021V02 & ARGO2021V03 -Map scales: x=5, 0.5; y=4, 0.5. P_Vort=0. MAP_USE_SAF=0,AGE_LARGE=50, AGE_SMALL=10. '

(profiles 141-193)

'No adjustment was necessary -Calibration error is manufacturer specified accuracy '

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'Bad data; not adjustable. OWC Method, 3.0, -CTD2021V02 & ARGO2021V03 -Map scales: x=5, 0.5; y=4, 0.5. P_Vort=0. MAP_USE_SAF=0,AGE_LARGE=50, AGE_SMALL=10. '

Reference dataset:
CTD and ARGO for_DMQC: CTD2021V02 & ARGO2021V03

DMQC summary graphs

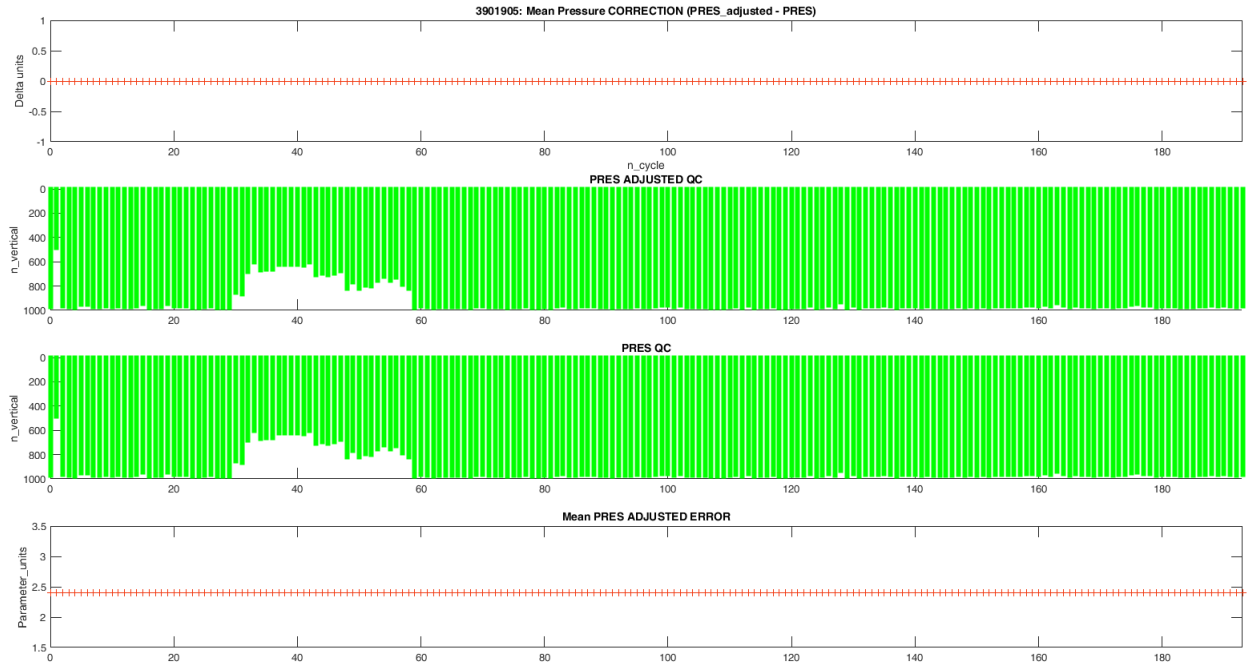


Figure 1. Corrections, QC flag (green for good data) and the adjusted error for pressure.

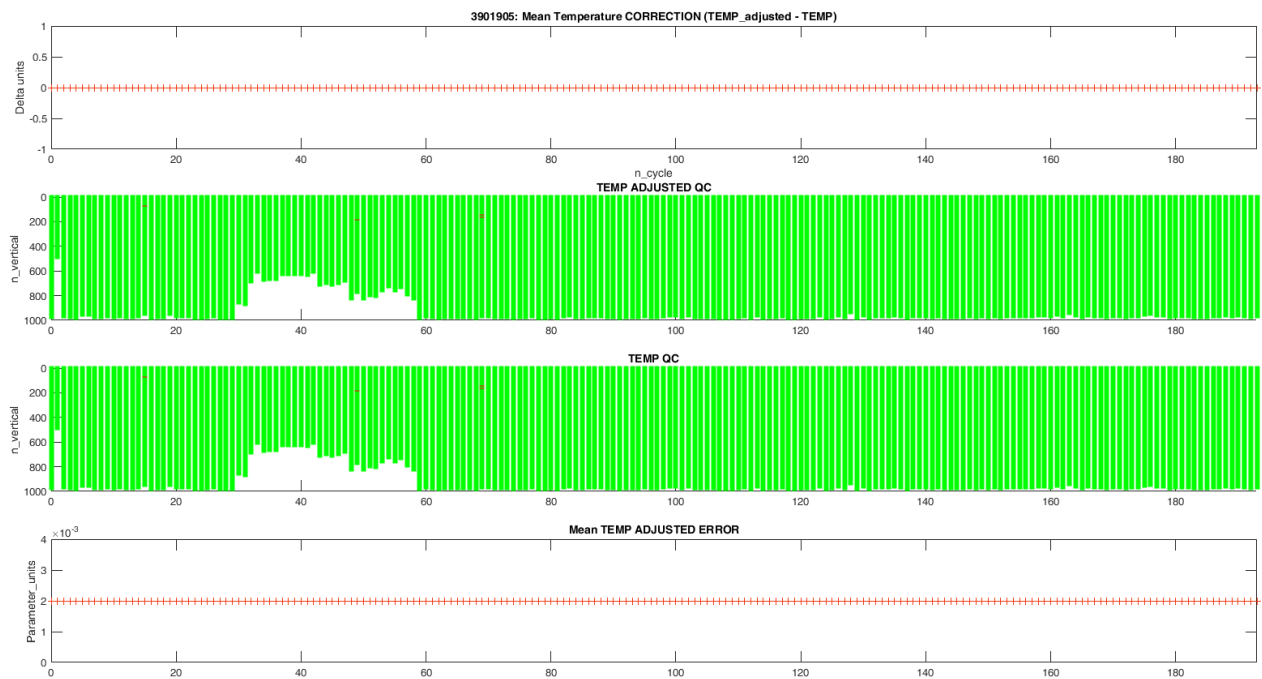


Figure 2. Corrections, QC flag (green for good data) and the adjusted error for temperature.

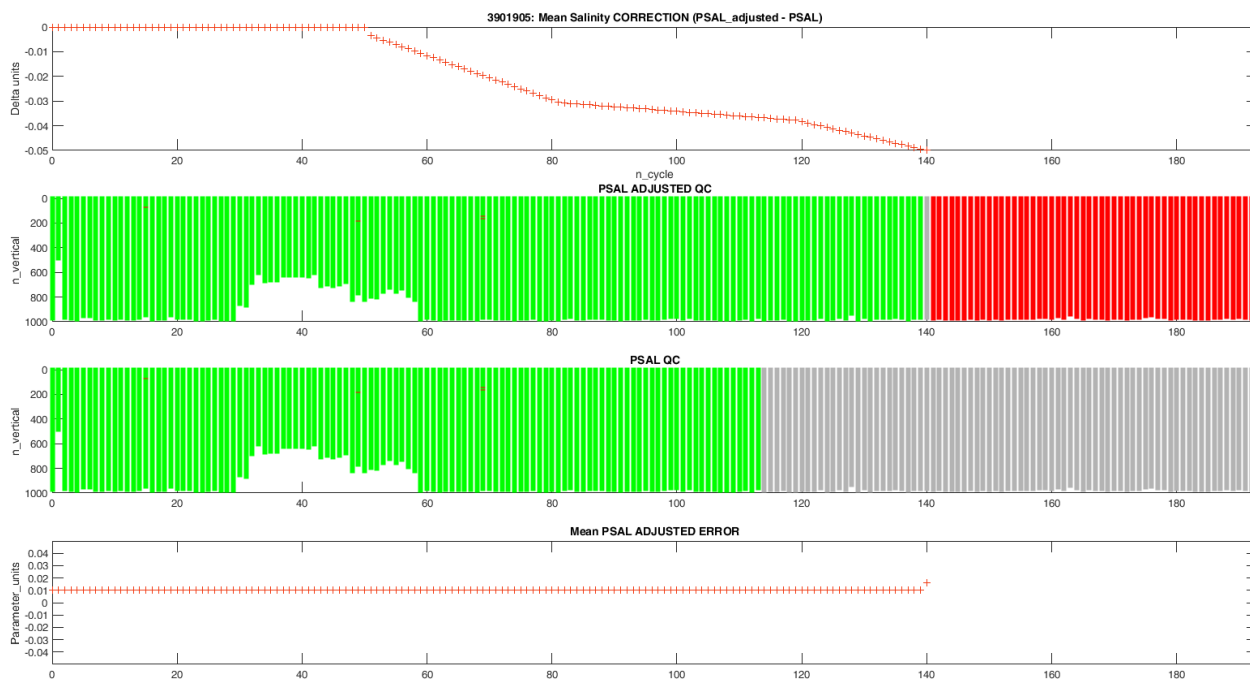


Figure 3. Corrections, QC flag (green for good data, red stands for QC 4 or 9, grey QC 3) and the adjusted error for salinity.

Additional comment:

The OWC correction works fine until cycle 140, after which the additive term exceeds the 0.05 upper limit threshold.

A specific execution was performed from cycle 1 to 140 to better estimate the OWC correction on PSAL.

Float WMO	Status	Correction on salinity	Flag applied to PSAL_ADJUSTED	Pressure	Other
3901905	Active	not required	Profiles 1 to 50 → flag 1	Autocorrecting	–
		required	Profiles 51 to 140 → flag 1	Autocorrecting	–
		not adjustable	Profiles 141 to 193 → flag 4	Autocorrecting	–

Table 1. Summary of possible corrections for this float.