

DMQC of the float 3901900 (MOCCA-EU, Arvor I, status: active)

Profiles: 1-194 (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 1-40)

PRES_ADJUSTED = PRES

'none '

PSAL_ADJUSTED = PSAL

(profiles 41-194)

'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 '

PARAMETER_ADJUSTED_QC =

See below, figures 1, 2, 3.

SCIENTIFIC_CALIB_COEFFICIENT =

(profiles 1-40)

'none '

'none '

'none '

(profiles 41-194)

'none '

'none '

'r= 0.99993 (+/- 7e-06) , vertically averaged dS =-0.0025347 (+/- 0.01) '

SCIENTIFIC_CALIB_COMMENT =

(profiles 1-40)

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

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'No adjustment was necessary. 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 41-194)

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

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'Salinity drift detected. OWC adjustment is needed. Error = maximum [statistical uncertainty,
0.016]. 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

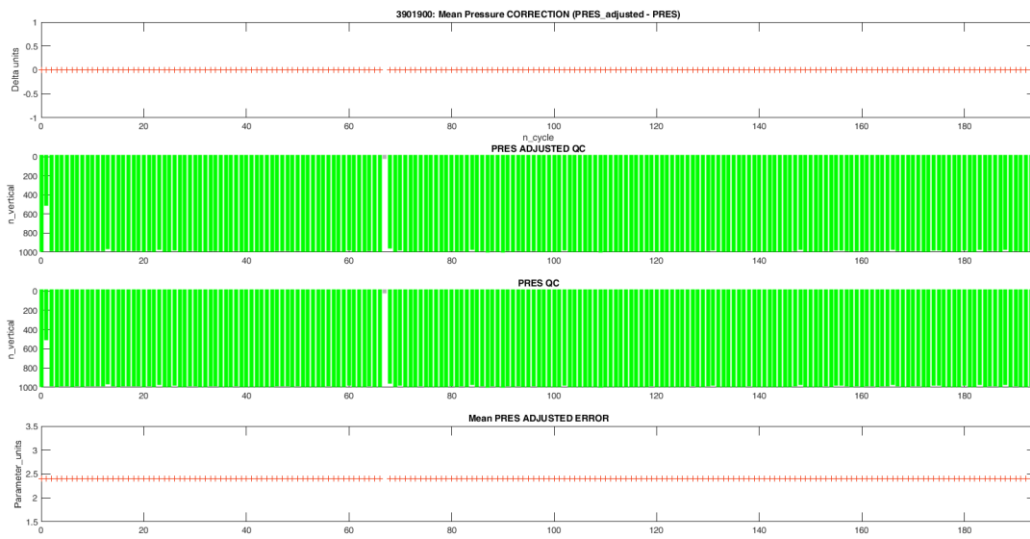


Figure 1. Corrections, QC flag (green for good data) and the adjusted error for pressure.

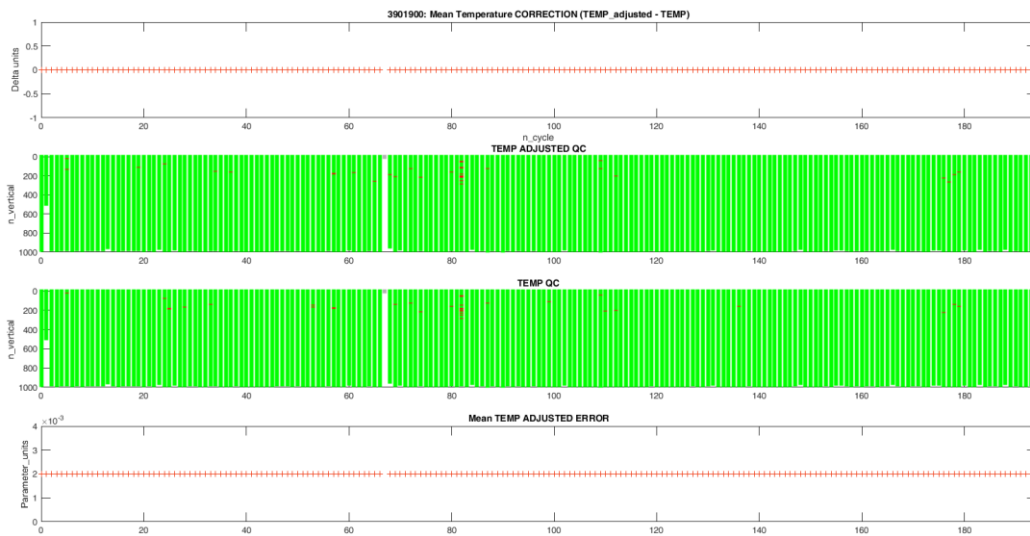


Figure 2. Corrections, QC flag (green for good data) and the adjusted error for temperature.

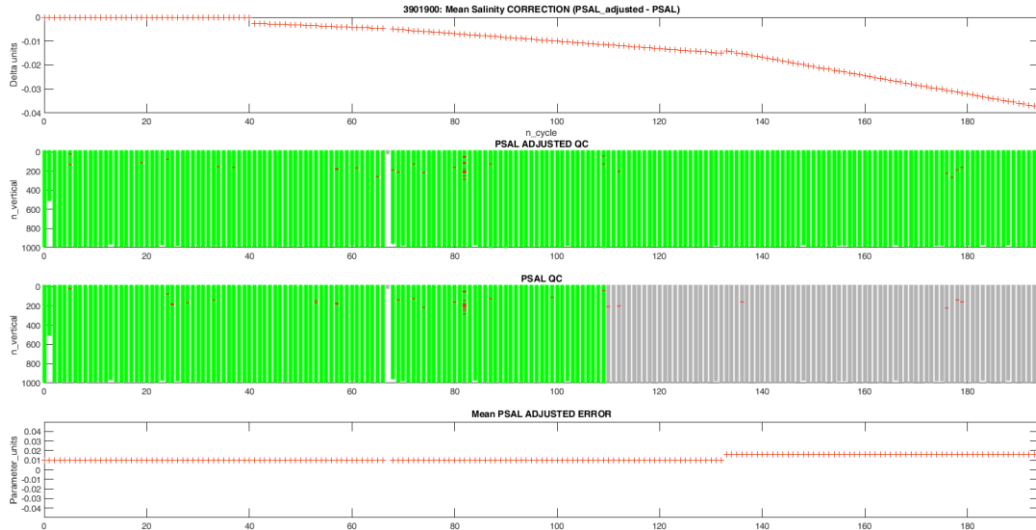


Figure 3. Corrections, QC flag (green for good data, red stands for QC 4 or 9, grey QC 3) and the adjusted error for salinity.

Additional comment:

Salinity drift detected after cycle 40. Two OWC executions (changing the theta range in set_calseries.m to optimize the calibrated salinity error) were applied, the first is used to correct from 41 to 132, while the second (theta between 1.5 and 2.0 °C) applies from 133 to 194.

| Float WMO | Status | Correction on salinity | Flag applied to PSAL_ADJUSTED | Pressure | Other |
|-----------|--------|------------------------|-------------------------------|----------------|-------|
| 3901900 | Active | not required | Profiles 1 to 40 → flag 1 | Autocorrecting | – |
| | | required | Profiles 41 to 194 → flag 1 | Autocorrecting | – |

Table 1. Summary of possible corrections for this float.