DM filler tool

Objectives of this presentation:

https://github.com/catsch/DM_FILLER

- Writing DM mode files can be tricky, time consuming, a nightmare …
- particularly for BGC files
- … More particularly for Provor CTS4 / CTS5 floats

⇒ I’ve made a R Tool that fills DM BD files
⇒ There is no obligation to use it
⇒ I just want to show that it exists (and that is not too complicated to use)
⇒ I will be happy to fill DM files for you with your adjustment

Main tools

Fill_DM_BP.sh => Script shell to define you input and generate the launch script

lance_DM_BP.sh => Script Shell to launch the writing of the DM

WRITE_DM_BP.R => R code with (History_xxx, scientific_xxx….)

Specific tools for DOXY

DOXY_adj.R => R code To calculate the DOXY Adjustment

DOXY_to_PPOX.R => Routine’s based on Henry’s work to go from DOXY to PPOX

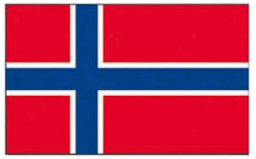
PPOX_to_DOXY.R => and vice versa

Example of text file sent by Siv Lauvset

```
FLOAT_NAME      6903551
CYCLE_NUMBER    "2-107"
DOXY_ADJUSTED_ERROR     equivalent to 19.2 mbar
DOXY_ADJUSTED_QC        1
SCIENTIFIC_CALIB_EQUATION       "DOXY_ADJUSTED=A*DOXY+B; "
SCIENTIFIC_CALIB_COEFFICIENT    "A=1.064; B=0 "
SCIENTIFIC_CALIB_COMMENT        "Partial pressure corrected as a linear function of PPOX using continuous in-air
measurements as in Johnson et al (2015); PPOX converted from DOXY and DOXY_ADJUSTED converted from
PPOX_ADJUSTED; ERROR calculated as 2std(A) x 205mbar + 2mbar "
NOTES   "Missing Float profile(s) for station(s): 1 108. Software: SAGE-O2 (https://github.com/SOCCOM-
BGCArgo/ARGO_PROCESSING). On cycle 31 there is bad PSAL data between 854-1202 dbar. The DOXY data in this range
is therefore given a flag 4 "

CYCLE_NUMBER    2-5
PRES>1940
DOXY_ADJUSTED   FillValue
DOXY_ADJUSTED_ERROR     FillValue
DOXY_ADJUSTED_QC        4

CYCLE_NUMBER    31
PRES>854
PRES<1202
DOXY_ADJUSTED   FillValue
DOXY_ADJUSTED_ERROR     FillValue
DOXY_ADJUSTED_QC        4
```



Fill_DM_NORWAY.sh
lance_DM_NORWAY.sh
WRITE_DM_NORWAY.R

```
dmqc@bgc-dmqc:/DMQC/PROGRAM/DM_FILLER$ ./Fill_DM_NORWAY.sh
```

```
##########################################
### Welcome in the DM mode filler Tool ###
##########################################
What WMO nc files you want to fill with DM ?
```

6903551

```
What is the parameter that interests you ?
 Enter
 1 for CHLA
 2 for BBP700
 3 for NITRATE
 4 for CDOM
 5 for DOXY
```

5

```
There are 109 B files to treat for 6903551 float
 How do you want to define the files to treat?
 Enter
 0  -For All profiles (you have one adjustment for the whole float life)
 1  -You want to define precisely the profile slot step by step for adjustment or from greylist
```

0

```
 You want to put the same adjustment on all the profiles
 Enter the Offset
0.
 Enter the slope
1.064
 Enter the Drift
0
```

From Siv Adjustment information

0, 1.064, 0

```
How this correction will improve the QC after the adjustment?
 Enter
 1 -If the ADJUSTED DOXY should be considered as GOOD (QC=1)
 2 -If the ADJUSTED DOXY should be considered as PROBABLY GOOD (QC=2)
```

1

```
 Enter the DOXY_ADJUSTED_ERROR
```

19.2

```
 Enter the SCIENTIFIC_CALIB_COMMENT, you want to write in the nc File [max 256 CHAR]
```

Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015), PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar

```
The DM input file is done, you can check it: DM_list_6903551

If it is Ok,
Enter on the command line
./lance_DM_NORWAY.sh

If it is not, go back ./to Fill_DM_NORWAY.sh
 or contact me :
 schmechtig@obs-vlfr.fr
```

./lance_DM_NORWAY.sh ……ET VOILA

Extract from DM_list_6903551

```
filename;filename_core;metadata_filename;param;type;offset;slope;drift;param_error;qc;scientific_comment;date_update
../../DATA/WORK/6903551/profiles/BR6903551_002.nc;../../DATA/WORK/6903551/profiles/R6903551_002.nc;../../DATA/RT/6903551/6903551_meta.nc;DOXY;
AD;0.;1.064;0;19.2;1;Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015),
PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar;20201119200030
../../DATA/WORK/6903551/profiles/BR6903551_003.nc;../../DATA/WORK/6903551/profiles/R6903551_003.nc;../../DATA/RT/6903551/6903551_meta.nc;DOXY;
AD;0.;1.064;0;19.2;1;Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015),
PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar;20201119200030
../../DATA/WORK/6903551/profiles/BR6903551_004.nc;../../DATA/WORK/6903551/profiles/R6903551_004.nc;../../DATA/RT/6903551/6903551_meta.nc;DOXY;
AD;0.;1.064;0;19.2;1;Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015),
PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar;20201119200030
../../DATA/WORK/6903551/profiles/BR6903551_005.nc;../../DATA/WORK/6903551/profiles/R6903551_005.nc;../../DATA/RT/6903551/6903551_meta.nc;DOXY;
AD;0.;1.064;0;19.2;1;Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015),
PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar;20201119200030
../../DATA/WORK/6903551/profiles/BR6903551_006.nc;../../DATA/WORK/6903551/profiles/R6903551_006.nc;../../DATA/RT/6903551/6903551_meta.nc;DOXY;
AD;0.;1.064;0;19.2;1;Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015),
PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar;20201119200030
../../DATA/WORK/6903551/profiles/BR6903551_007.nc;../../DATA/WORK/6903551/profiles/R6903551_007.nc;../../DATA/RT/6903551/6903551_meta.nc;DOXY;
AD;0.;1.064;0;19.2;1;Partial pressure corrected as a linear function of PPOX using continuous in-air measurements as in Johnson et al (2015),
PPOX converted from DOXY and DOXY_ADJUSTED converted from PPOX_ADJUSTED, ERROR calculated as 2std(A) x 205mbar + 2mbar;20201119200030
```