

## Objectives:

- Overview of DMQC process to ensure consistency across groups
- Raise awareness of recent issues with the Seabird CTD
- Propose recommendations for the ADMT on pressing needs within the DMQC community

## Format:

For those who haven't been to one of the DMQC workshops before: This is a workshop not a training course. Many of the topics have an identified person to introduce the topic or moderate the discussion. However, the conveners will be looking for much contribution in discussion from the participants. We are meeting so that we can learn from each other. Please come ready to contribute your experiences, whether those are of problems identified that need to be discussed, or new insights or problems solved about which you have things to tell others. There is a session on day 2 to identify and discuss floats or regions where the standard methodology breaks down or produces misleading answers. Bring along examples if you have them.

There will also be time for topics that participants suggest for discussion that aren't in the draft agenda. Where possible send suggestions to John Gilson ahead of the meeting.

# Agenda for the 6<sup>th</sup> Argo Delayed-mode QC Workshop for CTD data

2-3 December 2018, Scripps Institution of Oceanography

Conveners: John Gilson (jegilson@gmail.com), Brian King, Annie Wong

Day 1 8h30 to 17h00: Nierenberg Hall Room 101

Day 2 8h30 to 17h00: Martin Johnson House

## **Day 1**

1. 8h30 Welcome and local arrangements (J. Gilson)
2. 9h00 Overview/review of the DMQC process (J. Gilson, A. Wong, B. Klein)
  - Interpolate missing and/or bad latitude/longitude, check JULD
  - Confirm that pressure sensor is not returning questionable data
  - Edit point wise errors in PRES, TEMP, PSAL for pressure inversions, spikes, density inversions, salty hooks, biofouling, etc. Record in both PARAM\_QC and PARAM\_ADJUSTED\_QC as '4'. Be careful not to edit out real ocean features - these are usually density compensating and can be seen over several cycles.

**Coffee break: 10h00 - 10h15**

2. 10h15 Overview/review of the DMQC process continued (J. Gilson, A. Wong, B. Klein)
  - APEX pressure adjustment, re-compute salinity (pages 30-37 QC Manual) (15min, B.Klein)
  - Apply thermal lag adjustment if appropriate
  - Assess conductivity sensor drift and error bars – use least variable (tightest) part of T/S curve, not just the deepest isotherms
  - Generate D-files (V3.1) with emphasis on filling in calibration comment
3. How to identify floats showing signs of salinity drift (B. King, A. Wong moderating)
  - 3.1 11h00 General options for correction within netCDF files (20min J. Gilson)
    - Stable and hence need no adjustment, PARAM\_QC=1, PARAM\_ADJUSTED\_QC=1
    - Sensor drift is present and is adjustable, PARAM\_QC=1, PARAM\_ADJUSTED\_QC=1
    - Bad data and unadjustable, PARAM\_QC=4, PARAM\_ADJUSTED\_QC=4
  - 3.2 11h20 Community tools
    - Cabanes et al (2016) and OW (30min, C. Cabanes)
    - Johnson et al (2007) thermal lag correction (20min, J. Lyman)
    - PMEL GUI (20min, J. Lyman)

**Lunch break: 12h30 - 13h30**

- 3.2 13h30 Community tools continued
  - CSIRO GUI (20min, J. Lovell)
  - WHOI Climatological comparison (15min S. Wijffels)
  - Artificial Neural Networks (ANN) (15min, U.Bhaskar)
  - Discussion of other tools currently available or tools that are needed to be developed to aid the community (25min)
- 3.3 14h45 Recent development of Seabird CTD salty drifts
  - Seabird's understanding of cause (15min D. Murphy)

**Coffee break: 15h00 - 15h15**

- Characteristics and Discussion on how best to handle this issue in DMQC (45min, J. Gilson)

4. 16h00 DM trajectory files: (M. Scanderbeg)

**End of Day 1: 17h**

## Day 2

### 5. 8h30 Issues in correctly identifying salinity drift

Background reference datasets

- CTD for DMQC – Is there a need to refine the dataset? Regularity?  
(20min, C. Coatanoan, 10min S. Diggs, 15min Discussion)
- Argo for DMQC – Present and discuss if a revision of selection criteria is necessary? (45min, J. Gilson)

## Coffee break: 10h00 – 10h15

### 6. 10h15 Review frequency of DM visits and submission procedures. Make new proposals to ADMT if necessary (B. King)

- 6.1 How frequently should a float be DMQC'd?
- 6.2 How recent a profile should be DMQC'd? In instances of known sensor stability, what cycles can be submitted?
- 6.3 Correcting recent profiles that are identified in near-real time.

### 7. 11h45 Interaction of CTD delayed-mode data with BGC data (B. King?)

- How are groups coordinating DMQC experts across ocean state variables?

### 8. 12:15 Euro Argo DMQC activities (S. Pouliquen)

## Lunch: 12h30-1h30

### 9. 1h30 Difficult floats, difficult regions, etc. (Moderated by conveners)

Participants have a chance to show examples where the standard methodology breaks down or gives misleading answer. Discussion/recommendation of how these cases should be handled (methodologies, reference data, error estimates).

Participants are asked to bring examples: If none are brought, this will be a short session

- 3903703 (Tatiana-CSIRO)
- 3901852 (G. Notarstefano- Black Sea)
- 4901140 (I. Gaboury-Coastal Environments)
- 4900494 (I. Gaboury-Inversions)
- Malvinas Confluence (B. Klein)

## Coffee break: 3h00 – 3h15

### 10. 3h15 Further discussion of previous or new topics brought up by attendees

### 11. 4h15 Review of bullet points and Action Items to be sent to ADMT

## End of Day 2: 17h