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Biogeochemical-Argo ADMT 20
Meeting Report

Villefranche-sur-Mer, 14 - 15 October 2019

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14-15 oct. 2019, Villefranche-sur-Mer

General overview (1)

- Creation of the BGC data management task team with TOR, first visioconference in September 2019
- New BGC data managers in CSIRO(Christina), WHOI (david), UW(Matt), AOML(?)
- A DM BGC operator position open in LOV in January
- There is a urgent need to increase the number of profiles that have been Qceed and adjusted in the data system and flag all the bad profiles
- All BGC PIs that have published data should consider sending their DM data to the DAC
- Several DACs have started to push ADJUSTED data (NITRATE, pH, DOXY)
- The metadata should be consistent (and filled) across DACS
- Decision tree for all the parameters should be finalized and documented precisely
- Because the BGC sensors are relatively new and processing routines are likely to evolve, DACS are REALLY encouraged to develop a flexible processing system which allows reprocessing

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General overview (2)

Actions items:

- Organize the transfer from publication to BD files
  - BBP, CHLA: Herve, Uday, Marin, Catherine, Josh, Christina
  - DOXY : (Catherine, Henry)
- Gather the information of other data that have been published
- Document how to fill the metadata in the processing documentation
- Fill the metadata according to the documentation (all DACS)
- Organize and link all the open source software repositories on the BGC Argo Website (Catherine)
- Final decision tree
  - DOXY, pH, NITRATE (Josh, Henry, Virginie)
  - CHLA (Xiaogang, Herve, Catherine, Josh, Emmanuel)
  - BBP (Emmanuel, Giorgio)
  - Radiometry (Emanuele, Emmanuel, Antoine)

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Radiometry summary

- A RTQC method has been published (Range test), the deployment of this method is on going.
- Recommendation to perform a night profile once a year (when the gradient of temperature is the largest)
- A publication that address the temperature dependence of the sensor will be soon finalized, this method should be tested to propose a DM correction

Action items:

Propose a DM temperature correction at the next ADMT (Xiaogang, antoine, Nathan, Emanuele)

BBP summary

A DMQC and uncertainty determination subgroup will be formed and lead by Giorgio

CHLA summary

- A test on the sun angle will be added in the RTQC test to prevent NPQ correction to be made for night profiles
- The slope of FCHLA vs CHLA has been shown to be potentially dependant on accessory pigments (photosynthetic vs non photosynthetic)
- The variability on the calibration slope appears to be dependant upon the excitation wavelength of the sensors

Action items :

- Find a suitable calculation of the sun angle (Xiaogang, Emmanuel)
- Update the documentation (Catherine)
- Remove the quenching correction when applied at night (DACs)
- Continue investigation on the calibration slope (Herve, Julia, Flavien, Josh, Xiaogang)
- DMQC group to locally, vertically adapt the slope of the calibration (Emmanuel, Fabrizio, Xiaogang)
- Fill the ADJUSTED_ERROR with the uncertainty recommended (previous ADMT)(DM operator)

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DOXY summary

- 180k profiles, 80k with DOXY_ADJUSTED (mostly new data): Keep up the effort – DOXY is the low hanging fruit!
- DM reference data: in-air obs. (SCOR WG142) better than surface O_2% sat better than single Winkler profiler / deep DOXY climatology
- DM adjustment method: Gain on PPOX_DOXY for optodes – Error following reference data
- Time response correction on horizon for RT: Needs timing information on profile (MTIME)

Action items:

- Implement Ken's recommendation on RT oxygen gain adjustment (Josh, Ken, Marine, DACs)
  (provide quarterly audit on surface O_2% sat gain for floats >1 year; float list with mean gain + error estimate)
- Add surface saturation test to QC manual with QC='3' (Catherine, Henry, Virginie)
- Apply DOXY RTQC (mandatory) and DOXY RT adjustments (desired) (DACs)
- Take action on questionable profiles identified by the quarterly audit (DACs, Josh)
- Evaluate NB_SAMPLE parameter for MTIME estimation (Josh, Matt, Henry, Annie)
- Check BGC-decoders for provision of timing information / MTIME (DACs)
- Identify correctly the in-air measurements for CTS4 (Antoine, Catherine)

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NITRATE summary

- Better temperature characterization of bromide absorption
- NO_3 QC Manual soon to be ready
- NO_3 adjustments as a continuous function of profile/time encouraged, not profile-by-profile; often need DOXY_ADJUSTED
- US with high fraction of DM NO_3 already; Coriolis ready for DM; other DACs soon

Action items:

- Update NO_3 cookbook with new T-dependence of Br^- absorption (Ken, Catherine, DACs)
- Reprocess NITRATE if needed with the new T-dependence (DACS)
- Finalize and publish NO_3 QC manual (Ken, Catherine)
- Implement NO_3 RTQC (DACs)
- Implement CANYON-MED in SAGE (when published) (Marine, Tanya)

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combined traj file

Proposal to combine c- and b-traj files (trajectory file format version 3.2)

- File size is not a reason for trajectory files to be split into c- and b-traj files
- c- and b- file connection: DACs need to understand what MCs to include in the trajectory file even if kept as c- and b-traj files
- Parameter stability: processing of raw <BGCPARAM> should remain fairly stable
- Only one file for users to look at
- Coordination between core- and BGC-DM operators will be needed
- Comment : Urgent need to produce (b-)traj files (for Oxygen in-air data calibration)

Action items:

- Present proposal to ADMT, finalize format version 3.2 and propose workflow for DMQC, report back to AST/ADMT (Annie, Josh, Tanya, Henry, Megan)

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