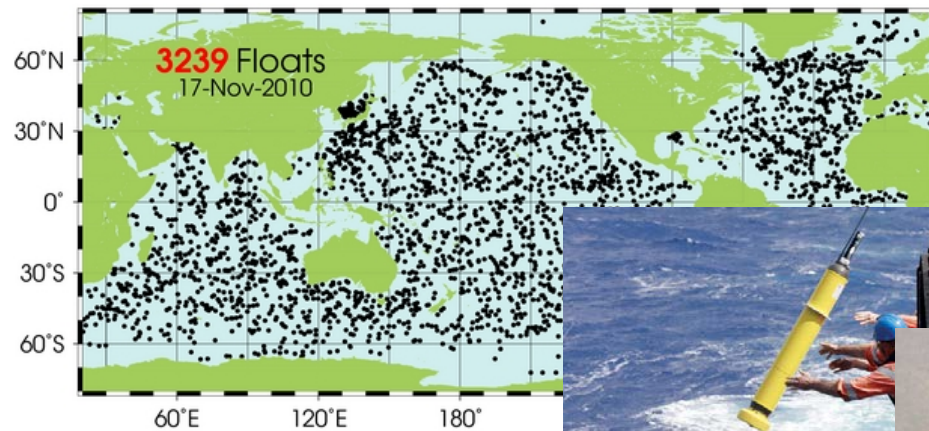




# ADMT 15

## 3<sup>rd</sup> Bio-Argo Workshop

### Introduction



# Bio-Argo Task Team: term of references (outcome of AST 15)

Within the Argo program, the Bio-Argo task team acts as a scientific committee of Bio-Argo national representatives, which provide recommendation and guidance for the progressive development and implementation of a Bio-Argo program. More specifically, its terms of reference are to:

- Develop and update the Bio-Argo science plan with respect to regional pilot projects and to a global network.
- Coordinate the implementation plan, in particular to optimize the various national efforts.
- Interact with other task teams (e.g. “marginal Seas”, “polar areas”) to prepare and coordinate the possible implementation of a Bio-Argo component to these new developments of Argo.
- Elaborate “good practice” recommendations with respect to float and sensor preparation, calibration, deployments and associated in situ simultaneous measurements.
- Provide advice regarding new variables in the BIO-Argo data stream, in particular based on an evaluation of the degree of readiness of their sensors.
- In close interaction with ADMT coordinate and organize the Bio-Argo data management.
- Establish and /or strengthen interactions and exchanges with international programs (IMBER, SOLAS) or group of experts (IOCCP, IOCCG).
- Establish and develop interactions with the operational oceanography community (e.g. Marine Ecosystem Analysis and prediction task team of GODAE OceanView)

## The variables ready to be implemented

- **Oxygen**: exchange with atmosphere, marine photosynthesis and respiration.
- **Nitrate** : New production (build up of organic material) ; remineralization; biogeochemical modeling
- **Chlorophyll a** : Proxy of phytoplankton biomass, photosynthesis
- **Particulate scattering** : Stock of particulate matter (detrital and living). Proxy of Particulate Carbon (POC) and Suspended Particulate Matter (SPM)
- **pH**: acidification, CO<sub>2</sub> drawdown
- **radiometry**: photosynthesis, ocean color, heating rate

## Status of documents (version 1) related to « Bio-variables »

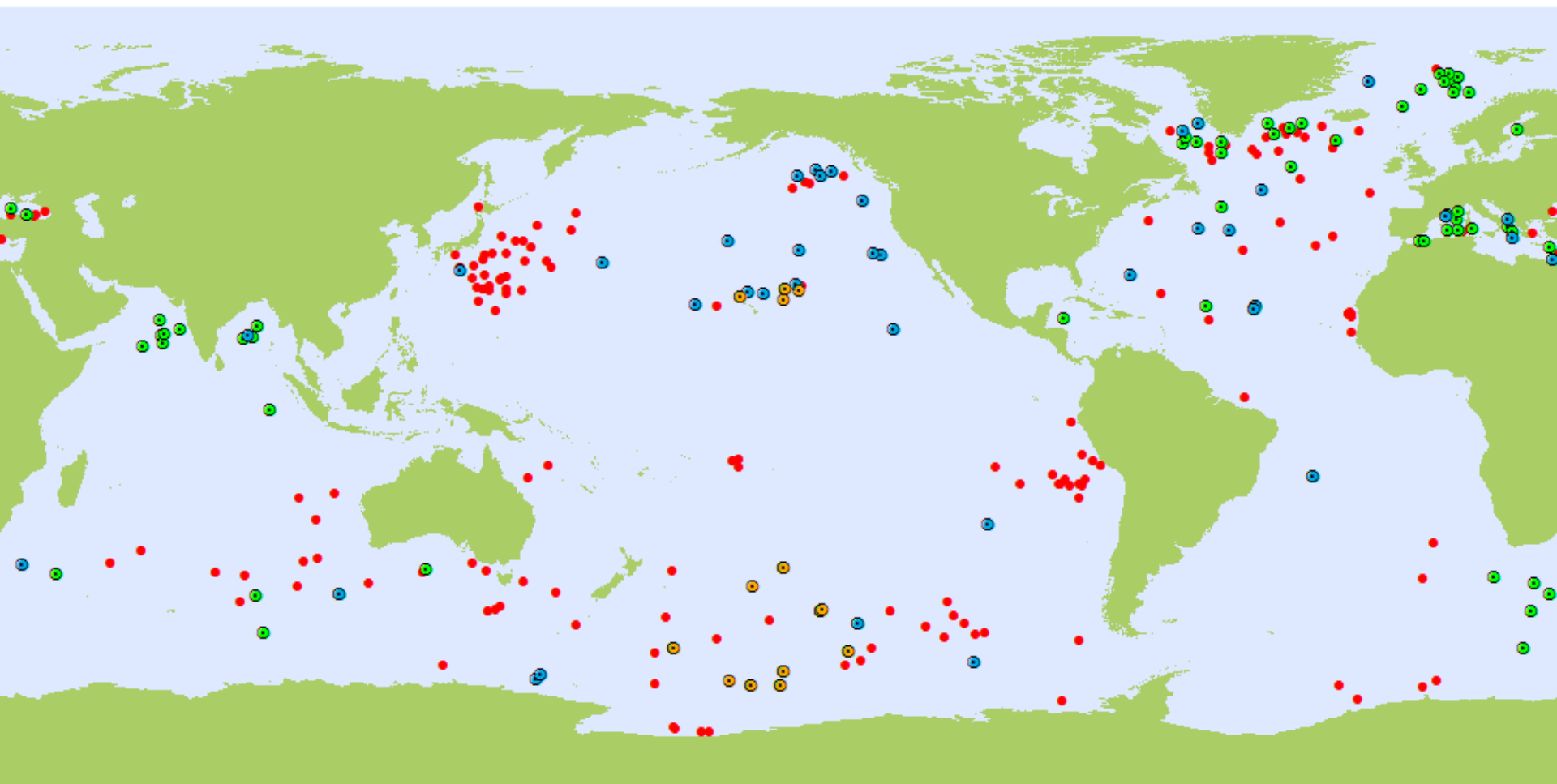
|                 | Processing at the DAC level | RT-QC      | DM-QC      |
|-----------------|-----------------------------|------------|------------|
| O <sub>2</sub>  | Done                        | Done       | On-going   |
| Chla            | Done                        | Done       | On-going   |
| b <sub>b</sub>  | Done                        | On-going   | On-going   |
| NO <sub>3</sub> | On-going                    | To be done | To be done |
| radiometry      | Done                        | To be done | To be done |
| pH              | To be done                  | To be done | To be done |

Done

On-going

To be done

# Bio-Argo floats: 2014 / 2012



Bio-Argo (267)

- Dissolved Oxygen (249)/190
- Bio-optics (77)/12
- Nitrate (47)/18
- pH (14)/1

September 2014



## (presently known) activities/future plans for BGD/Bio-Argo

- **India** (INCOIS): **50 floats** (10 per year) over the next 5 years: bb (POC), Chla, O<sub>2</sub>, NO<sub>3</sub>(?). Arabian Sea, Indian sector of the Austral Ocean
- **Japan** (Jamstec, Univ. Tokyo, Fishery Research agency): **3 floats**: Chla, O<sub>2</sub>
  - ✓ Argo plans (including BGC) for the next 10 years in discussion.
- **South-Africa** (CSIR): **3 floats**: bb, Chla, O<sub>2</sub>, transmissiometry. Atlantic Sector of the Austral Ocean
- **Australia** (CSIRO). **15 floats**: bb, Chla, O<sub>2</sub>, NO<sub>3</sub>, transmissiometry. Indian Ocean (collaboration with INCOIS **India**); **2 floats/year**: Southern Ocean Time Serie;

## (presently known) activities/future plans for BGD/Bio-Argo

- **Italia** (OGS): **7 floats** : bb, Chla, O2, CDOM, radiometry NO3 (2 floats). Mediterranean Sea
- **Romania** : **1 float**: bb, Chla, O2, CDOM, radiometry. Black Sea
- **UK** (Plymouth Marine Laboratory): **11 floats** (some of them being presently deployed)
- **Canada** (Univ. Laval) : **26 floats** : bb, Chla, O2, CDOM, radiometry, NO3. Arctic (starting in 2015 over two years)

## (presently known) activities/future plans for Bio-Argo

- **France** : Chla, bb, O2, CDOM, radiometry, (NO3), pH(?)
  - ✓ **25 floats**: Austral Ocean (Atlantic and Indian sector).
  - ✓ **14 floats**: Mediterranean Sea
  - ✓ **4-5 floats /year**: **distributed** to the national community through an open call (3 new labs recently applied)
- **EU/ ERIC Euro-Argo**: Chla, bb, O2, CDOM, radiometry, (NO3), pH(?)
  - **8 floats**: Atlantic (North).



# USA : 185 Floats: O2, NO3, pH, Chla, bb: Austral Ocean



## SOCCOM

Unlocking the mysteries of the Southern Ocean

**SOCCOM is launched!**

The SOCCOM project has been awarded funding from the National Science Foundation and was officially launched on September 9, 2014.

SEARCH SOCCOM

ABOUT US | RESEARCH | BROADER IMPACTS | RESOURCES | NEWS | BLOG | CONTACT US | MEMBER LOGIN

### Latest News



#### Southern Ocean Town Hall at AGU

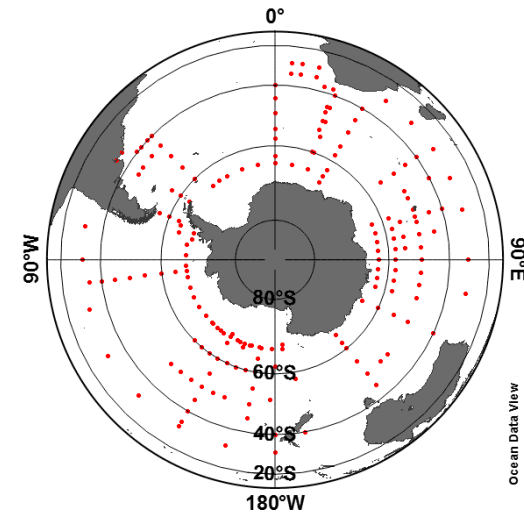
Join us on Dec. 14th to discuss SOCCOM and other progress



### SOUTHERN OCEAN CARBON AND CLIMATE OBSERVATIONS AND MODELING

The Southern Ocean Carbon and Climate Observations and Modeling project (SOCCOM) is an NSF-sponsored program focused on unlocking the mysteries of the Southern Ocean and determining its influence on climate.

Housed at Princeton University and administered by the [Princeton Environmental Institute](#), SOCCOM draws on the strengths of teams of investigators across the U.S. as well as participating in international observational and simulation efforts.



<http://soccom.princeton.edu>



**Session 085** - Towards a Global Ocean Biogeochemical Observing System Based on Profiling Floats and Gliders

- Claustre, H., CNRS & UPMC, LOV , France
- Johnson, K. S., MBARI, USA

**Tutorial** – Towards a global ocean biogeochemical observing system based on profiling floats.

- Johnson, K. S., MBARI, USA
- Claustre, H., CNRS & UPMC, LOV , France
- Sarmiento, J. L., Princeton University, USA

**WG 142** Quality Control Procedures for Oxygen and Other Biogeochemical Sensors on Floats and Gliders

- Arne Körtzinger (Germany)
- Ken Johnson (USA)





# International Ocean Carbon Coordination Project

Towards a sustained global observation network for marine biogeochemistry



## INSTRUMENTING OUR OCEANS FOR BETTER OBSERVATION: A TRAINING COURSE ON AUTONOMOUS BIOGEOCHEMICAL SENSORS

*Sven Lovén Center for Marine Sciences, Kristineberg, Sweden.  
June 22-July 1, 2015*

The International Ocean Carbon Coordination Project (IOCCP) is pleased to offer a 10-day international Summer Course on best practices for biogeochemical sensors. The goal of the course is to further develop proficiency in the use of a suite of biogeochemical sensors and to improve the quality of the data currently generated by autonomous biogeochemical sensors. This intensive, 10-day Summer Course will provide trainees with lectures, hands-on laboratory experiences, and informal interactions to improve in-depth knowledge on instrument know-how, troubleshooting, data management, data reduction and quality control. The product of this course will be a best practices guide on the usage of the selected biogeochemical sensors. Because of the nature of the course and expected outcomes, the course is designed for researchers with prior experience who will bring to the course existing protocols and their know-how with sensors. Leading experts in oceanographic sensors, together with sensor engineers, will give lectures and take part in the discussion and exercises. Target sensors will include carbonate system (pH, pCO<sub>2</sub>), oxygen, nitrate and bi-optical (e.g. fluorescence, backscatter, radiometers).

**The workshop will be limited to a total of 25 participants selected through a competitive process at the discretion of the organizers.**

Funding to cover full/partial participation costs will be available to selected applicants. More information on the course and application process will be available soon.

*Save the dates and stay tuned...*

| Actions | what  | who                                   | Status      |
|---------|---|---------------------------------------|-------------|
| 1       | Write the minute of the meeting ADMT13  | Hervé, Catherine                      | D           |
| 2       | Contact seadatanet for variable names (and close the action 45 of ADMT)   | Catherine, Justin                     | D           |
| 3       | Write the document "Processing Argo Chla data at the DAC level" (e.g. similar document produced by V. Thierry et al. for Argo-O2)           | Catherine                             | D           |
| 4       | Write the Chla RT-QC document   | Catherine                             | WBP         |
| 5       | Database harmonization: producing reference materiel => interaction with manufacturers  | Tom & Antoine                         | not started |
| 6       | Propose a Quenching test for Chla.  | Xiaogang & Clare                      | D           |
| 6b      | Propose a method to keep the profile variance   | Xiaogang & Catherine                  | D           |
| 7       | Propose a depth correction for Chla   | Antoine, Haili, Xiaogang              | D           |
| 8       | Propose a spike test  | Catherine, Xiaogang, Hervé            | D           |
| 9       | Write the document "Processing Argo backscattering data at the DAC level" (e.g. similar document produced by V. Thierry et al. for Argo-O2) | Catherine, Giorgio, Emmanuel          | D           |
| 10      | Write the backscattering RT-QC document   | Emmanuel, Catherine                   | WBP         |
| 11      | Write the document "Processing Argo NO3 data at the DAC level" (e.g. similar document produced by V. Thierry et al. for Argo-O2)            | Ken, Catherine                        | WBP         |
| 12      | NO3: review the RT test for Argo identify the useful, define new ones   | Ken, Fabrizio                         | D           |
| 13      | Write the NO3 RT-QC document  | Ken, Catherine                        | stopped     |
| 14      | Evaluation of the need for two Chlas: e.g. operational, blended synthetic Chla vs science Chla (AST action?)                                | Fabrizio, Hervé, Tom, Emmanuel, Sandy | stopped     |
| 15      | Interact with IOCCG / maintain the link with spatial agency (e.g. yearly summary of Bio-Argo progress on their web site) (AST Action)       | Hervé                                 | D           |
| 16      | Write the minute of the meeting ADMT14  | Hervé, Catherine                      | D           |
| 17      | Write the NO3 RT-QC document  | Ken, Catherine                        | WBP         |
| 18      | Finalise the document "Good Practices"  | Antoine, Catherine                    | WBP         |
| 19      | Finish the Configuration Parameters for Bio (name, use, mandatory...)   | Antoine, Catherine                    | WBP         |
| 20      | Find metrics for CHLA DM (sensor drift in DM, satellite...)   | LOV, Nick, Xiong                      | WBP         |
| 21      | Biogeochemical provinces for CHLA DM  | Nick, LOV                             | on going    |
| 22      | using Radiometric comparison for CHLA DM  | Xiaogang                              | on going    |
| 23      | Find metrics for BBP DM (sensor drift in DM, satellite...)  | LOV, Nick, giorgio                    | on going    |

# Meeting agenda

## Monday November 3

|       |   |       | time (hours)  |      |
|-------|---|-------|---|------|
| 14:00 | - | 14:15 | Welcome, practical issues   | 0:15 |
| 14:15 | - | 14:30 | <b>Hervé.</b> Introduction/ general objectives of this meeting                | 0:15 |
| 14:30 | - | 15:00 | <b>Thierry.</b> New file organisation   | 0:30 |
| 15:00 | - | 15:30 | <b>Justin.</b> Variable naming  | 0:30 |
| 15:30 | - | 16:30 | <b>Catherine &amp; others.</b> Technical & configuration parameters, metadata | 1:00 |
| 16:30 | - | 17:00 | Pause   | 0:30 |
| 17:00 | - | 18:30 | <b>Virginie.</b> O2: real-time QC, delayed mode QC                            | 1:30 |

# Meeting agenda

## Tuesday November 4

|       |   |       |  |      |
|-------|---|-------|--|------|
| 9:00  | - | 10:00 | <b>Catherine/Hervé.</b> Chlorophyll a: real-time QC, delayed mode QC | 1:00 |
| 10:00 | - | 11:00 | <b>Catherine / Hervé.</b> bb: real-time QC, delayed mode QC          | 1:00 |
| 11:00 | - | 11:30 | Pause  | 0:30 |
| 11:30 | - | 12:00 | <b>Antoine.</b> Hardware : good practices for good data              | 0:30 |
| 12:00 | - | 13:00 | <b>Jean-Philippe &amp; Antoine:</b> Trajectory files for Bio-Argo    | 1:00 |
| 13:00 | - | 14:30 | Lunch  | 1:30 |
| 14:30 | - | 17:00 | <b>Ken &amp; Catherine.</b> NO3: real-time QC, delayed mode QC       | 2:30 |
| 17:00 | - | 17:30 | Pause  | 0:30 |
| 17:30 | - | 18:30 | <b>Catherine / Hervé.</b> Radiometry: real-time QC, delayed mode QC  | 1:00 |