

Cal/Val Meeting Overview and Objectives

January 10, 2017

Overview

- Focus of meeting is to understand where we stand with the V5 product and determine what is left to do and how to do it
- Meeting is a working/interactive format
- Not a series of conference style presentations
- We'll roughly follow the agenda order, but may skip around based on where the discussion leads

Summary of March 2016 Cal/Val Meeting

- Instrument-only wiggle correction implemented in V4.1 and the new ancillary (Canadian) SST field implemented in V4.2 were improvements and will be kept for future processing versions
- Main objective for the team now is the identification of the seasonal/regional residual biases that are present in the SSS product
- Consensus that if the cause of these biases cannot be identified by Fall 2016, then an empirical correction will be developed for V5 and the work to identify their source will fall to future investigators and possibly be included in V6+ should that processing occur
- The form of this empirical correction is to be determined, but the team was clear that the correction needs to be well documented and both the corrected and uncorrected SSS should be made available on the V5 product, similar to what was done with V3.

March 2016 Cal/Val Marching Orders

- Understand the uncertainty in cold sky temporal biases observed in V4.1
- Along with the cold sky observations, the team should evaluate other ocean regions to help identify and separate the instrument contribution from the biases.
- The 3rd stokes channel calibration, if off, could cause regionally and seasonally dependent errors. A detailed assessment of the 3rd stokes calibration is warranted
 - Bias over cold sky, temporal variation over cold sky
 - Bias over amazon
 - Bias as a function of independent FRA
- In addition to the regional/seasonal biases, there is still an apparent long term drift, particularly in the first several months of the mission. A vicarious method using Antarctica shows promise to either correct, or at least support an ocean model correction. This approach, along with its uncertainty should be documented
- It is evident that some of the residual errors, particularly in the southern hemisphere are due to residual galaxy errors. Updated galaxy maps are being generated, tuned in part from galactic maps derived from SMAP. The next step is to remove the empirical symeterization, apply the updated galaxy maps and reprocess the data.
- As mentioned above, if the cause of the biases cannot be identified by the Fall of 2016, then an alternative empirical method must be implemented. This method will need to be developed, but the concept is some type of map based correction using Argo.

Objectives of this meeting

- Evaluate performance improvements from algorithm changes in version 4.5.x processing
- Re-assess seasonal and regional biases in latest product with the objective of identifying cause or if empirical correction needed
- Use of SMAP to better understand Aquarius residual biases with respect to Argo/HYCOM
- Assess state of instrument calibration analysis both for absolute end-to-end calibration and drift
- Evaluate SPURS-2 results and how they can support Aquarius validation
- Evaluation of additional products included in version 5 (including RIM, spice etc)
- Finalize list of v5 product contents
- Update schedule for finalizing algorithms and processing for v5 (including approach for empirical corrections)
- Identify and set schedule for final documentation