

Utility of SSES in L4

- Main goals & questions
- Proposed experiments
- Next steps
- Participants

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Main goals & questions (1/3)

1. Establish utility of current SSES (bias, SD)
 - a. Are they useful?
 - Need to decide on metrics (*e.g.* analysis vs. ARGO, reduction in magnitude/structure of stochastic bias correction fields, O-B, internal consistency, etc.)
 - b. Which ones are most useful?
 - Evaluate differences from methods employed by various data providers (& sensors)
 - c. Recommendations to data providers regarding various methods
 - Features of schemes which ones work well, which don't work, etc.)

Main goals & questions (2/3)

2. Following on from 1c, How best to use current SSES?
 - a. Variations in usefulness between different analysis schemes
 - (e.g. CMC didn't find them useful, BoM recalculate their own SSES and use that instead of bias correction)
 - b. Understand why SSES have different impacts in different analysis schemes
 - E.g. underlying methods of analysis bias correction schemes
 - c. Recommendations to L4 producers as how best to employ SSES

Main goals & questions (3/3)

3. Forum on future evolution of SSES

- a. How L2 providers might calculate correlated errors?
 - Using NWP for synoptic biases is "straightforward", but what about, *e.g.*, correlated error due to cloud detection issues?
- b. How L4 producers might use correlated errors?
- c. How to remove dependence on drifting buoy and obtain properly representative uncertainties that are appropriate for assimilation into L4
 - *N.B.* Some analyses use ARGO data

Proposed experiments (1/2)

Time periods: Dec 2016 - Feb 2017 & June 2017 - Aug 2017

- With spin-up periods as deemed appropriate by individual L4 producers

1. Baseline experiments

- Control with standard provider setup
- No SSES (e.g. bias=0, fixed SD - possibly vary by sensor - decide on values)
- With bias (+ fixed SD)
- With SD (+ bias=0)
- With SD+bias

L4 producers should perform the variants that they are able to, *e.g.* if system cannot use SD, just do with and without SSES bias

Proposed experiments (2/2)

2. Further experiments

- Only use SSES for some sensors (*e.g.* reference sensor, if used)
- Runs with doubled and halved SSES SD

Next steps (1/2)

- Agree datasets
 - Maybe not all providers use all datasets, or use L3U instead of L2P
 - Report improvements relative to individual baseline configurations
- Agree metrics
 - Comparison with, *e.g.*, ARGO
 - Question of independence
- Agree timeline
 - Obtaining datasets, running experiments

Next steps (2/2)

- Propose email exchanges, telecons & workshop
 - Purpose of latter is to discuss results and refine experiments (original date Nov 2018, but...?)
- Report findings at next GHRSSST Meeting

Participants

- L4 providers
 - NOAA Geo-Polar Blended
 - UK Met Office OSTIA
 - CMC
 - BoM
 - Others...(JPL, CMEMS, Ifremer, ?)
- L2/L3 providers
 - NOAA
 - Eumetsat/ESA (appropriate ESLs, *e.g.* U. Reading)
 - OSI-SAF(?)
 - BoM(?)
 - Others...?