

CCISI Algorithm Review

Summary

Legos

4. 5. 2012



General Remarks (1)

- Many (!!!) thanks to the referees for the excellent input, spend energy, demonstrated interest in the project and the subject at large.
- In principle this should be a multi-agency international OSTST effort with partners and involvements on both side of the Atlantic as a minimum.

General Remarks (2)

- There remain many (!!!!) open.
- Not surprising for many of us! After all, we are dealing with many difficult and open science questions. There is no turn-key ready solution available. It needs to be an ongoing effort.
- The ultimate goals needs to be a merged homogenized sea level data record from all altimeter missions. Involves US participation.
- Therefore: Extend the CCI-SL project to also improve the climate reference missions T/P Jason-1/2.
- Strong concern about contribution from France to extension of CCI-SI and about continuity of altimetric constellation.

Orbit Computations

- How to account for time-varying gravity fields?
- J_2 remains an issue (presently modeled through linear function plus 6/12 months sin waves).
- However, it is not linear (laser ranging result). Why not using the SLR-based $J_2(t)$? Similar for other low-order/degree terms.
- Different gravity models, reference frames, etc are used for different missions. Shouldn't those be the same (no consensus reached).

Ionosphere

- Consensus to reach CLS recommendation.

Instrumental Correction

- 59 day oscillation remains a problem. Cause and impact on climate analysis not clear (at least to me).
- SWH is still a problem with “climate consequences”.
- I found the statement useful: “CCISL is helpful”. Many problems are research problems without answers on the table.
- ERS-1/2 work not proposed – at this point just ENVISAT.

Sea State Bias

- Recommended: no change at this point, which seems reasonable.
- Intense work required to see what SSB model is an improvement vs. just reducing variance.
- Again a research topic.

Wet Tropo

- Recommendation: use GPD; use ERAinterim to analyze quality of radiometers.
- Wet tropo analysis/corection needs a common analysis/approach between different communities. Requires joint meeting.
- Better instruments should be constructed ...

Atmosph. Correction

- Recommendation: use DAC correction with 20-day highpass filtered DAC component.
- Many research aspects remain!

Regional Sea Level Bias

- Should be corrected in the reference missions.
- But: we need to understand where it comes from and correct it there.
- Should be done also for ERS-1/2 and ENVISAT (part of mapping procedure?).
- Also: climate studies are not just global sea level; regional sea level is a VERY important aspect of it.

Mapping

- What is the CCISl product?
- In my view first of all corrected GRDs for ENVISAT, ERS1/2 – ultimately also T/P, Jasons1,2,3...
- Level 3 and 4 products are then a next step but should not be the only or ultimate product.
- Recommendation: besides maps provide time series of global mean separately. For assimilation purposes, the trend should not be in the maps!

Tidal Models

- Recommendation:
- GOT4.8 for global ocean
- DTU10 for Arctic; transition between both models needs to be worked out.
- LP tides: not clear if it should be removed or not. But having it as a correction would be useful for assimilation purposes.

High latitudes

- DTU10 MSS for high latitude.
- Closer analysis of data (including EMB) which might lead to a much better data coverage in the arctic. Might apply also to other parts of the world. What about Antarctic?
- Reprocessing/retracking over sea ice?

Coastal Areas

- GPD wet tropo correction is good for coastal areas.
- Along-track data should contain the data in coastal waters (at least 1Hz).

Closing Remark

- There are parameters that should be used by all all missions; others might be mission specific.
- Thanks again to all!!