

ALTIKA LEVEL2 PRODUCTS PROCESSING EVOLUTIONS

CNES and CLS team

Content

1. Current Version : Patch 1
2. Update of the current processing baseline
 1. V2 to be implemented by end 2013 – TBC
 2. V3 by end 2014 – TBC

Current processing baseline

V1

Patch 1 :

- **Patch 1 was developed and implemented to**
 - ◆ correct some anomalies
 - ◆ and implement some evolutions.
 - ◆ Refer to the SALP presentation for more details on the context of this patch
 - ◆ **We remind that there is obviously still some disclaimers – mainly due to Ka band. All disclaimers are recorded in the SARAL User Handbook**
- **Products are already very good for most of the applications:**
 - ◆ a few evolutions are however possible to improve the data quality. This shall not impact the current operational use of SARAL data by ocean models – PEACHI could be a suitable prototype to assess algorithms before operational implementation if required (sea-ice, inland water, ...)
 - ◆ **We propose to disseminate to all users the GDR_T products in V1.**

Update of the current processing baseline : V2

Another version will be prepared by end 2013. This version shall be available by early 2014 to support the calVal meting foreseen in April 2014. In this version we could implement (perimeter to be assessed further in front of the impact on the ground segment):

● Geophysical evolutions updates :

- ◆ Wind look up table based on the proposal from J. Lillibridge and R. Scharroo.
The 1D model could be the best candidate.
- ◆ SSB look up table based on the proposal from J. Lillibridge and R. Scharroo
The 1D model could be the best candidate. More flight data is required to better account for the Ka band Sigma0. A 2D model based on SWH and sigma0 (and not the wind ...) could also be envisaged. The ground processing algorithms could be adapted to account for this.
- ◆ Matching Pursuit algorithm (remove the data over land, sea ice, update the tuning parameters, ..) based on the proposal from J. Tournadre and CLS
CLS approach could be the best candidate. For rain flagging, the proposal from Graham has to be analysed, it should be at least documented in the User Handbook.
- ◆ Radiometer neural algorithm (2012 data base) based on the proposal from CLS.
We need to verify the problems of resolution on sigma0 and atmospheric corrections.
- ◆ Coastal radiometer correction based on the method used on ENVISAT mission
Based on the presentation from M.L.D.

Update of the current processing baseline : V2

Another version will be prepared by end 2013 (schedule to be precized once the perimeter will be defined) to account for:

- **Geophysical evolutions updates :**

- ◆ **Ice2 retracking algorithm to comply with Ka band based on the proposal from LEGOS and CLS.**

Based on the presentation from CLS and LEGOS, depending on the data quality analysis on going on LEGOS side.

- ◆ **Ice1 and Sealce retracking algorithm outputs require additional validation and analysis.**

- ◆ **Upgrade Triode to reduce the periodic signal observed on the altitude differences with MOE/POE**

Based on the presentation from C.J.

- ◆ **Implement FES 2012**

- ◆ **Implement a surface flag based on GlobCover**

- ◆ **Implement the distance to the closest coast information (and to the closest land ...)**

- **Review the configuration files in order to explain the range bias observed (about 6 cms)**

Update of the current processing baseline : V2

Another version will be prepared by end 2013 (schedule to be precized once the perimeter will be defined) to account for:

● Instrument processing updates :

- ◆ Implement the processing of the altimeter I&Q calibrations
- ◆ Update the altimeter characterization file to account for 63 values (currently limited to 62).
- ◆ Modify the altimeter calibration algorithm – the PTR shall not be corrected by the LPF.

● Product updates :

- ◆ Update the MQE parameter scale factor (currently 10^{-4})
- ◆ Update the manoeuver flag in the OGDRs products like what was performed on Jason-2
- ◆ Review the SARAL product spec to identify potential new parameters like
 - » distance to the coast,
 - » GlobCover surface flag
- ◆ Modify the product version from 'T' to 'D' ??
- ◆ Account for the AGC control loop in the waveforms recorded in L2 products to ease understanding and analysis over all surfaces

Update of the current processing baseline V3 – end 2014 TBC / TBD

Another version could be prepared by end 2014 to account for:

- **Ongoing studies as part of the PEACHI prototype :**
 - ◆ **Sea ice flag**
 - ◆ **Land ice flag**
 - ◆ **Wind speed look up tables based on collocation with scatterometers values**
 - ◆ **New approach to compute the wet tropospheric correction accounting for the SST and the profile**
 - ◆ **SSB look-up table with one year of Ka band flight data and wind speed derived from Sigma0_Ka**
 - ◆ **Waveforms classification flag**
 - ◆ **Coastal wet tropospheric correction based on a method used on Jason-2 mission**
- **Update the radiometer neural algorithm**
- **Implement FES 2012 (if not already done in V2) and/or FES2014**
- **Implement a surface flag based on GlobCover (if not already done in V2)**
- **Implement the distance to the closest coast information (if not already done in V2)**
- **Implement a manoeuver flag in the offline products**

Update of the current processing baseline V3 – end 2014 TBC / TBD

Another version could be prepared by end 2014 to account for:

- Upgrade the sea-ice processing (TBC)
- Align the algorithm applied on ground on the 2 tracking values (no impacts for users – only used to monitor the quality of the MNT tracking mode)