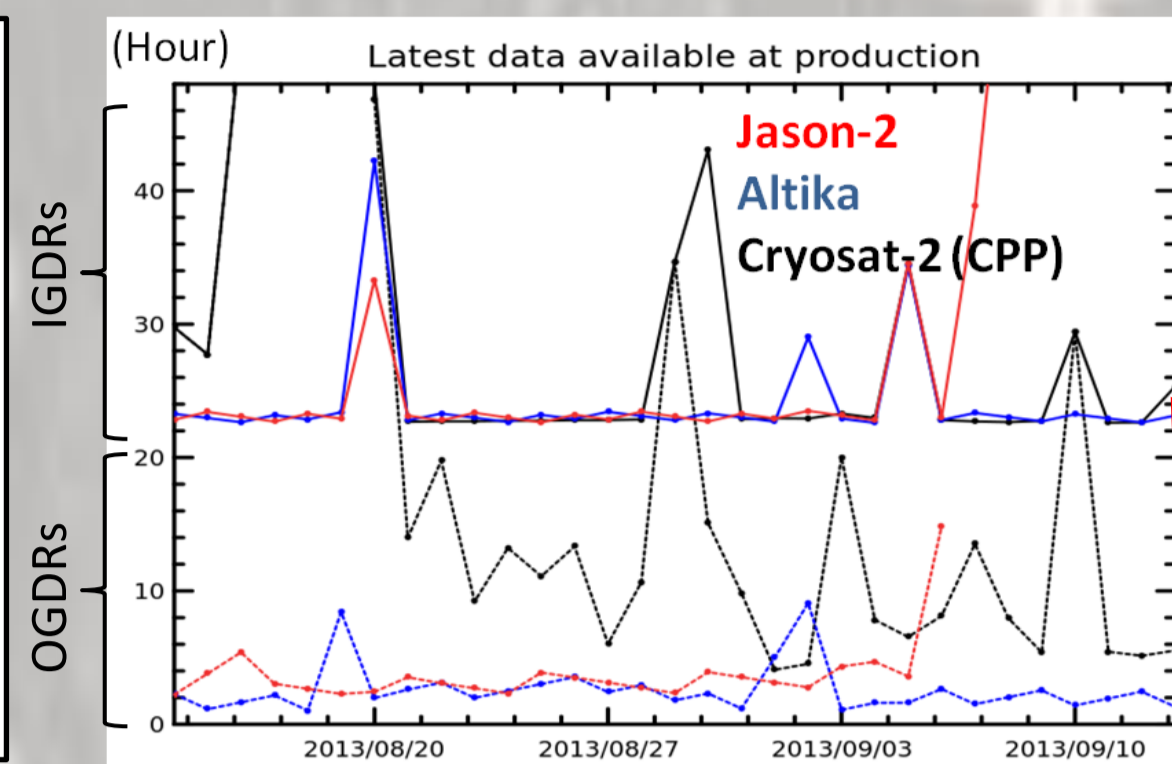
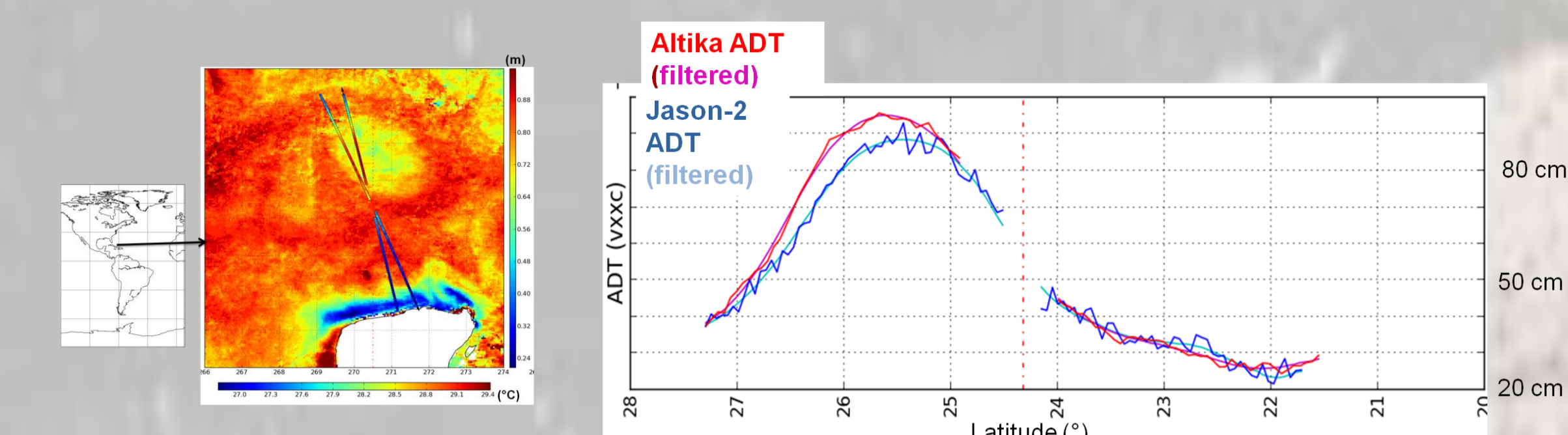


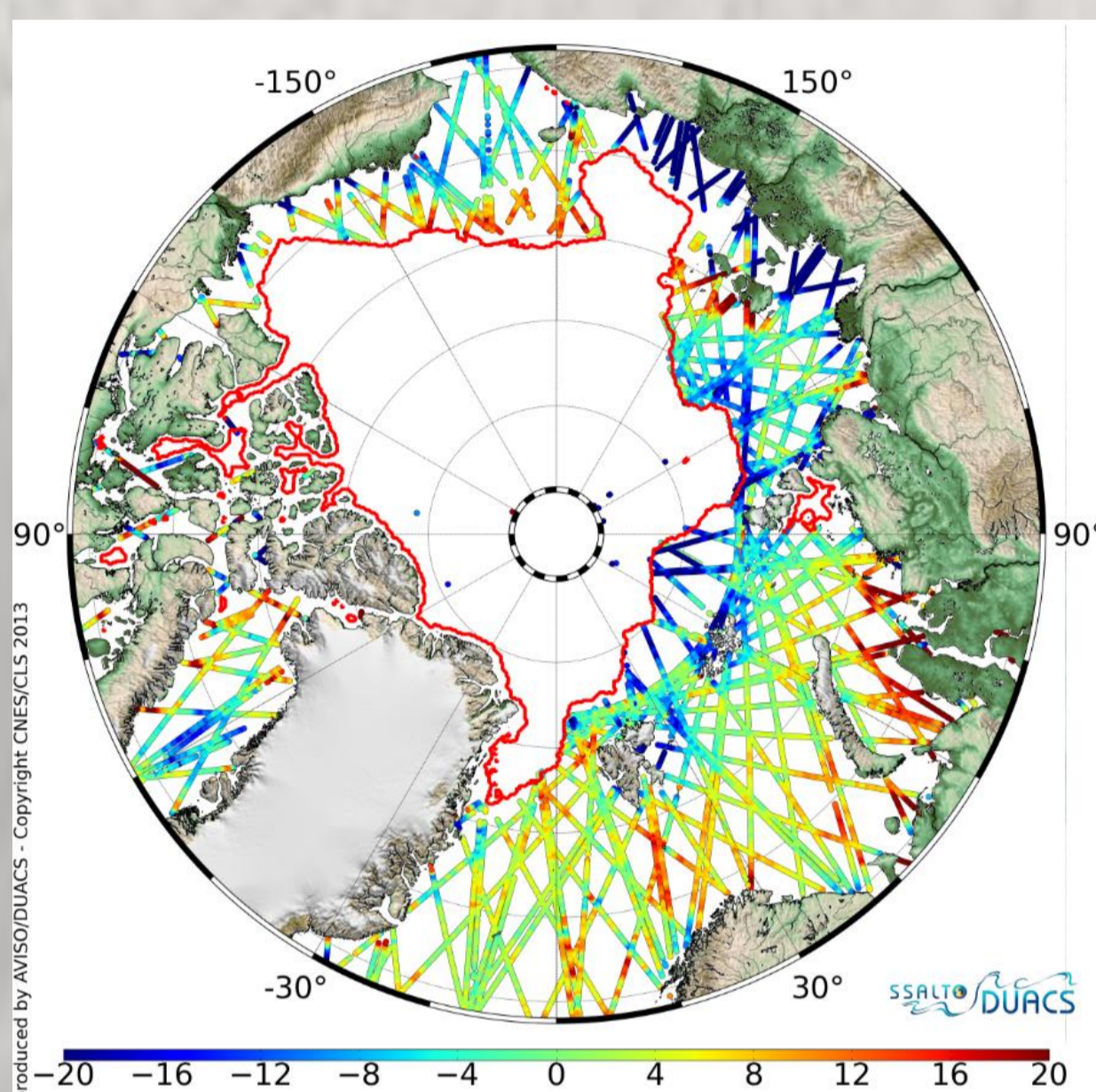
IGDR and OGDR Altika data are ingested in the system. At the start of production, the latest available product is rarely older than 3 hours (idem for Jason-2). Since July DUACS also ingested real time Cryosat CPP data, which still increase the availability of fresh measurements which is of crucial interest for operational modellers



This year, Jason-1, the oldest satellite of the altimeter constellation used in the Duacs multimission system, was impacted by a severe anomaly and was definitively stopped on the 21 June 2013. Fortunately, the data from the Altika mission, launched in February, were released publicly in July 2013. As soon as they were available, the OGDR and IGDR Merged with Jason-2 and Cryosat-2 have been used in the system allowing us to maintain the product quality. The first analyses on Altika demonstrated to even improve the DUACS products in terms of resolution.

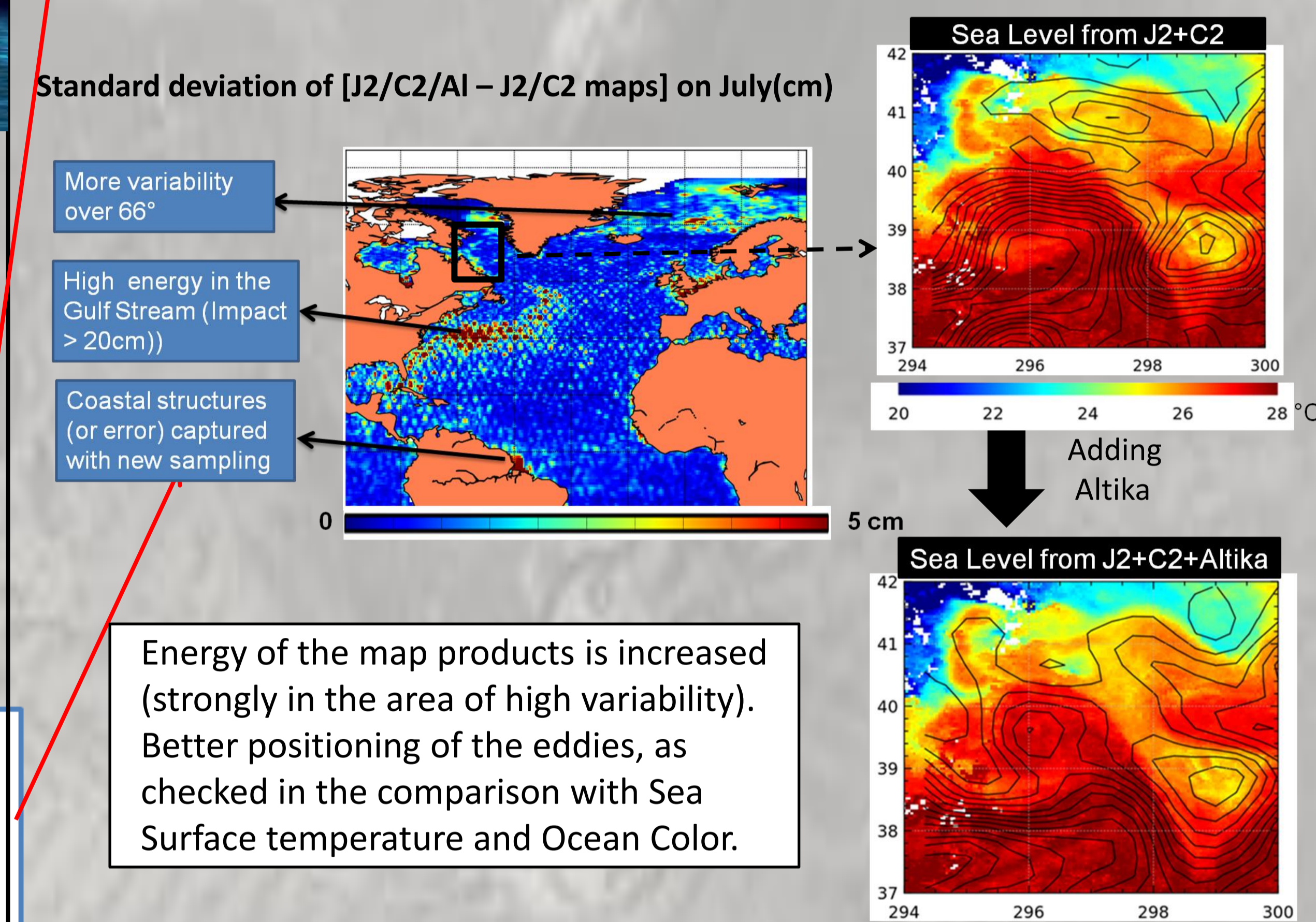
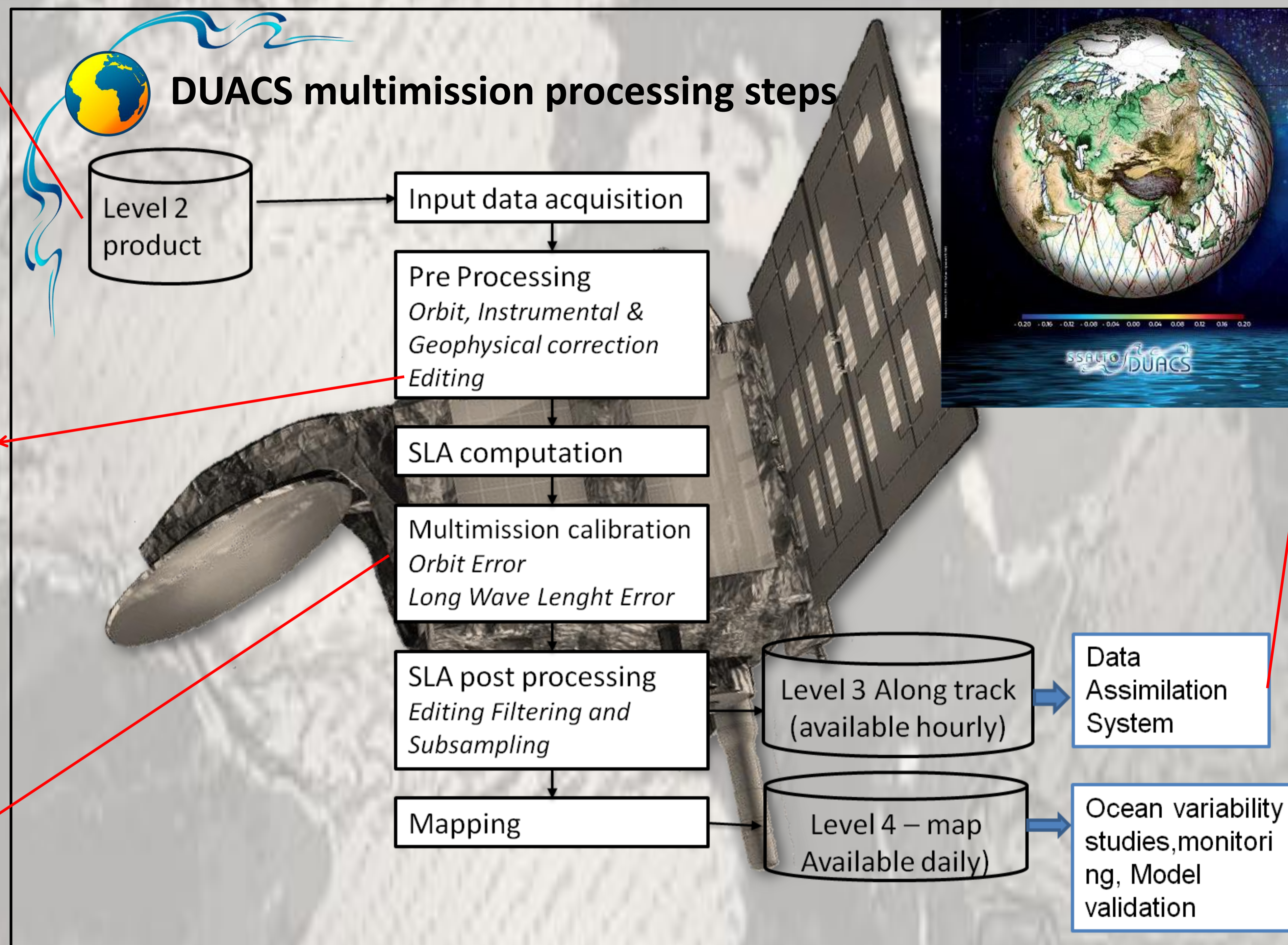
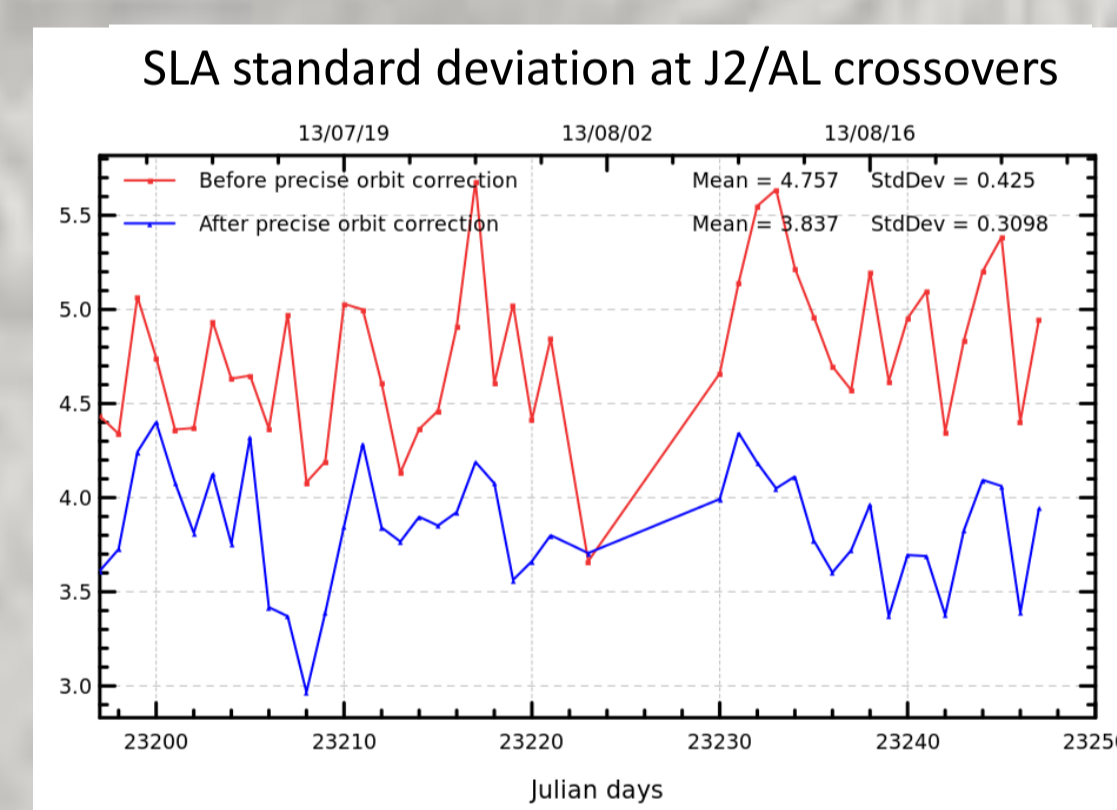


Filtering is a crucial step of the DUACS processing, that allows us to remove the high frequency errors to keep only the ocean signal that will be useful in the assimilation process. This example shows the signature of an eddy measured by Altika and Jason-2 in the Gulf of Mexico at almost the same time (35mn interval). This large eddy is well monitored by Jason-2 and Altika, but we see some differences at high frequency. Notably we feel that the level of filtering to apply to Altika data may be relaxed.
→ There is certainly a real interest of Altika to improve the resolution of Duacs products



Low editing ratio for Altika are found almost everywhere, especially in the Arctic areas. This highlights the good quality of Altika data but might also indicate that some DUACS thresholds are today too permissive on Altika, at least for a global product. The figure on the left represents the Arctic Sea Level unprecedently sampled by Cryosat-2 (CPP) and Altika during the (nearly) minimum of ice coverage between the 12th and the 15th September 2013. In red, sea ice limit distributed by Eumetsat SAF O&SI

Impact of Orbit error reduction procedure on Altika/Jason-2 differences at 1-day crossovers (cm)
The variance at crossovers is reduced by 6.6 cm² (to be compared to 7.9 cm² for Cryosat-2/Jason-2).



Energy of the map products is increased (strongly in the area of high variability). Better positioning of the eddies, as checked in the comparison with Sea Surface temperature and Ocean Color.

Comparison between DUACS Absolute Dynamic Topography (black lines) and SST(background image) on the Gulf Stream on 26 of July 2013

Coming soon on DUACS

- Later, early 2014, some improvements will also be applied on the real time, in terms of content and format. A full reprocessing will be released in the mean time to have an homogeneous data set over more than 20 years.
- Upgrade of the global and regional Level3/4 processing (editing, filtering/subsampling, correlation, MDT, Reference period ...) and format
 - Reference period : 20-year instead of 7-year → several cm of impact regionally
 - Mean profiles : reprocessed with new standards, averaged using 20 years
 - Updated methodology for mapping and geostrophic current calculation
 - Global product delivered with 1/4° Cartesian resolution instead of 1/3° Mercator
 - Along-track filtering reduced for noise reduction only (see Poster from Dufau et al)
 - Formal mapping error expressed in cm
 - New format for grids ...
- Reprocessing of the 20 year time series with homogeneous standards, improving the whole time series (see Poster from Pujol et al)
- Upgrade of the Arctic product: An improvement of high latitude processing will be implemented and, additionally, we will insure a continuity between the global and Arctic product
- Integration of HY2 data (activity TBC)

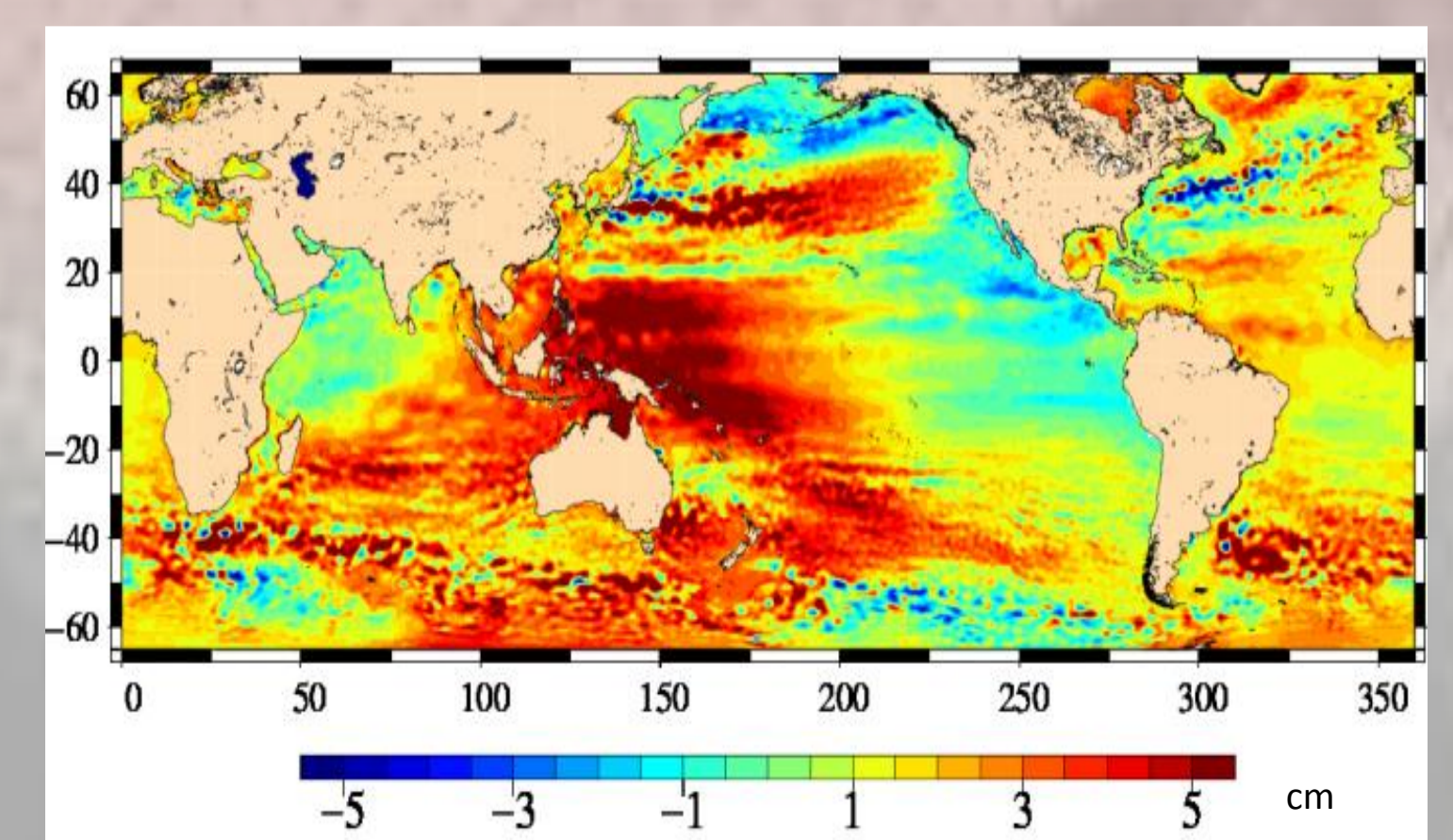


Fig : Corrective term to convert a 7-year referenced product to a 20-year reference. The reference change will impact the mean of the SLA at regional scales

In Summary

- Introduction of Altika allowed us to maintain a rather good quality despite the loss of Jason-1
- Duacs Quality control outputs confirms the very good performances of Altika, as already shown exhaustively by the Altika Calval teams: good orbit, good availability of data, good noise level, ...
- The mesoscale is better resolved with Altika (3 satellites) with a better positioning of the eddies.
- First results highlights the potential interest of Altika to even improve the resolution of Duacs products

Overall performance of the multimission system and contribution of each missions

