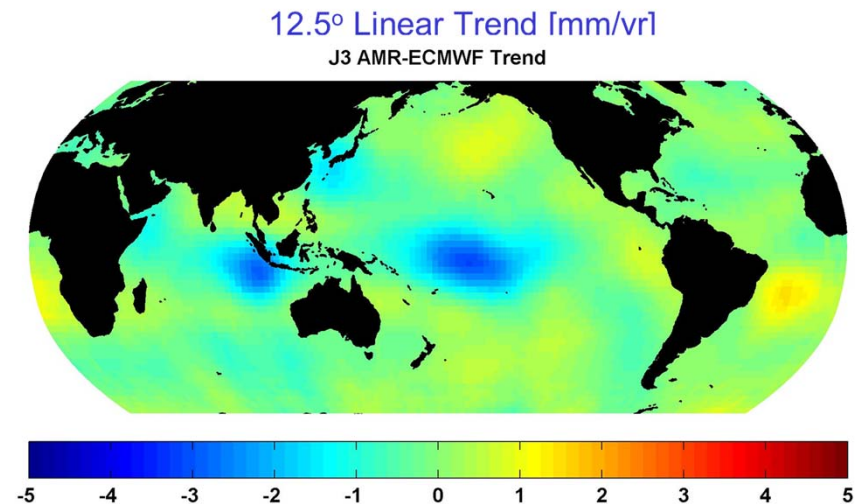
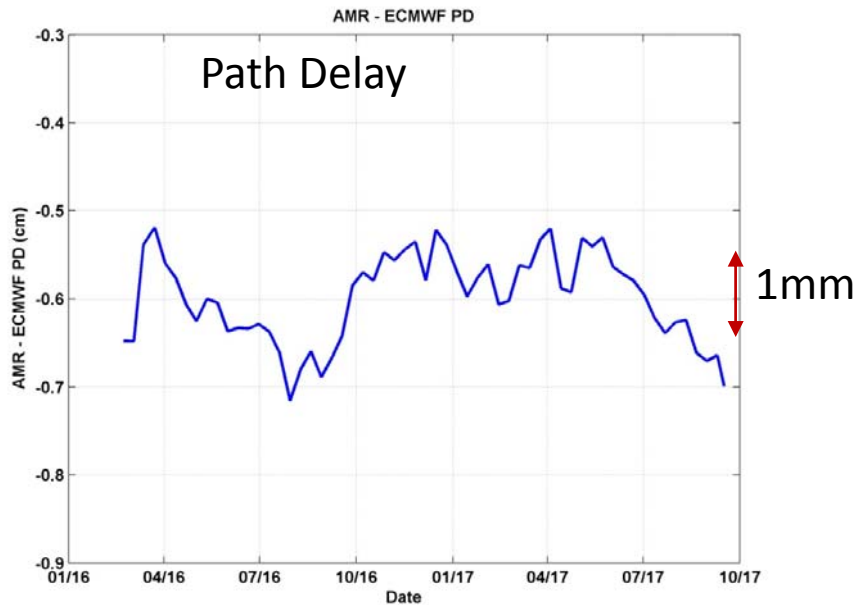


Instrument Processing: Corrections Summary

5 oral presentations and 2 poster presentations

Jason-3 Cold Sky Calibrations

- Cold sky calibrations shown to be critical to stabilizing Jason-3 AMR
 - Radiometer is stabilized to $\pm 0.1\text{K}$ level
 - Path delays stabilized to better than $\pm 1\text{mm}$ over mission to date
- More frequent calibration schedule implemented by CNES will reduce overall GDR latency
 - 20-day latency achieved after most recent calibrations
 - Makes derived calibration more robust to shorter term radiometer instability



Multi-surface assessment of the Sentinel-3A MWR

Overview of MWR performances :

- Good stability of MWR instrument: the instrument is performing well
- Good performances, similar to other instruments

Towards improved/dedicated MWR products:

Coastal areas

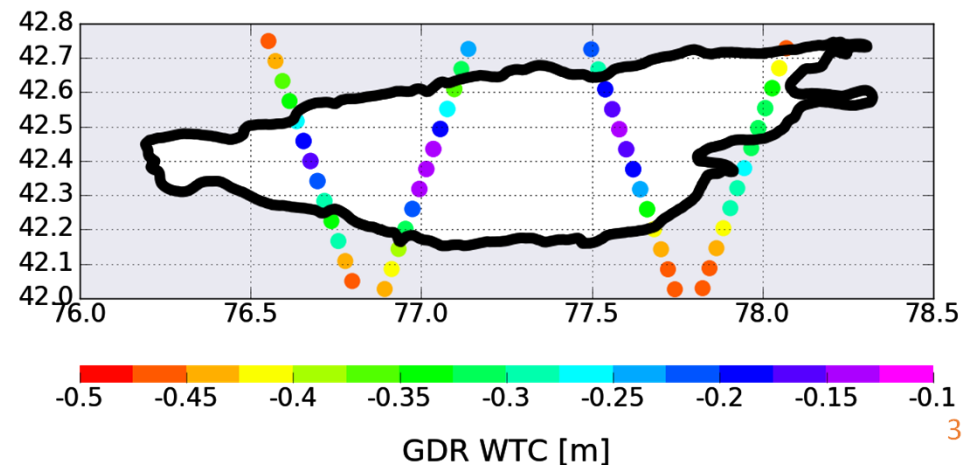
- Empirical algorithm improves retrieval of WTC near Corsica, validation on-going
- A new interpolation scheme will be soon available to improve the retrieval of WTC close to the coast

Hydrology

- Empirical algorithm improves retrieval of WTC over lake Issyk-kul, validation on-going

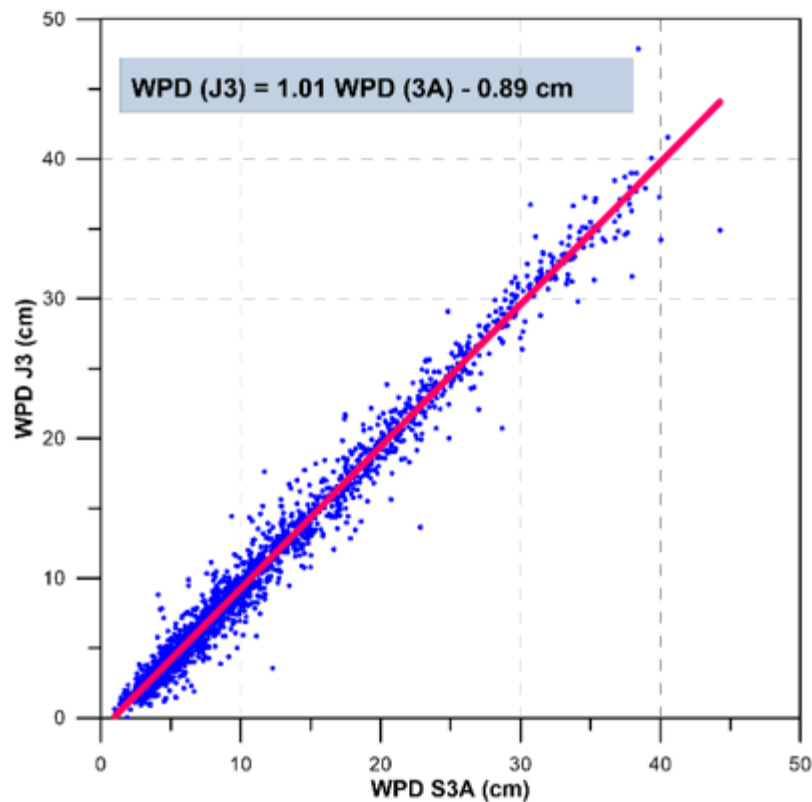
Sea ice

- New algorithm under development to estimate sea ice type



Assessment of Sentinel-3 Path Delay

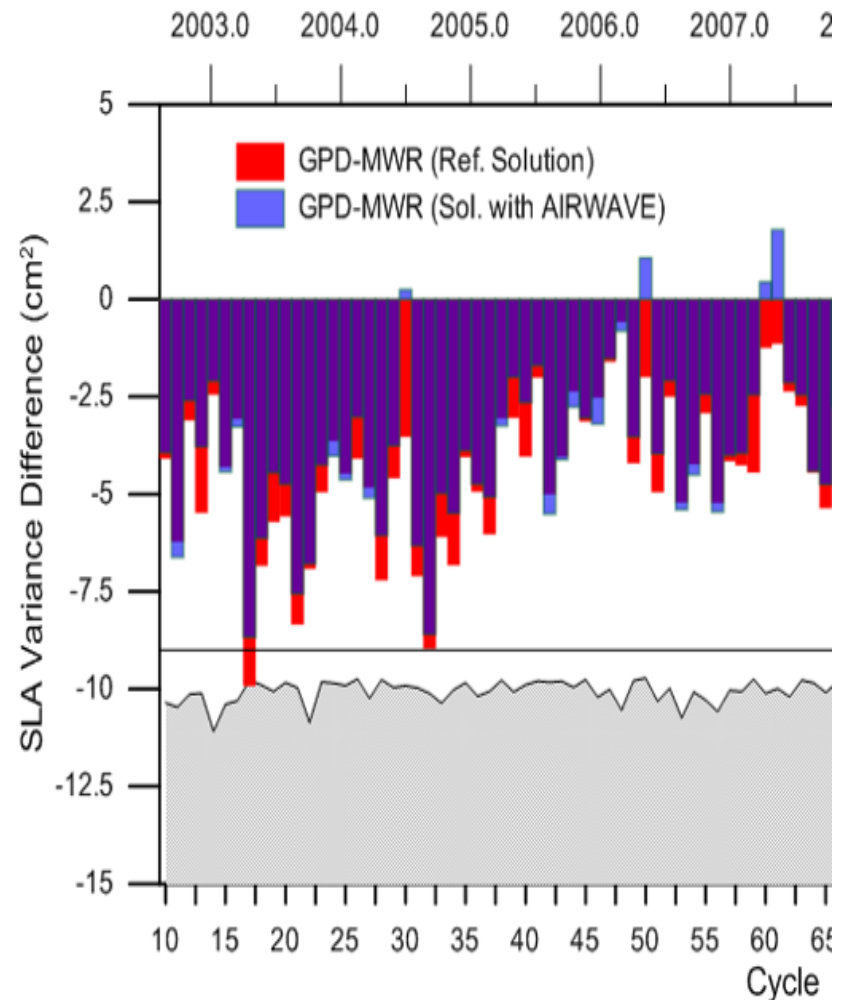
S3A vs J3 WPD



- Evaluation of S3A MWR shows good performance
- RMS differences < 1.3cm with respect to Jason-2 and Jason-3
- GNSS comparisons show land contamination up 20-25km from coast

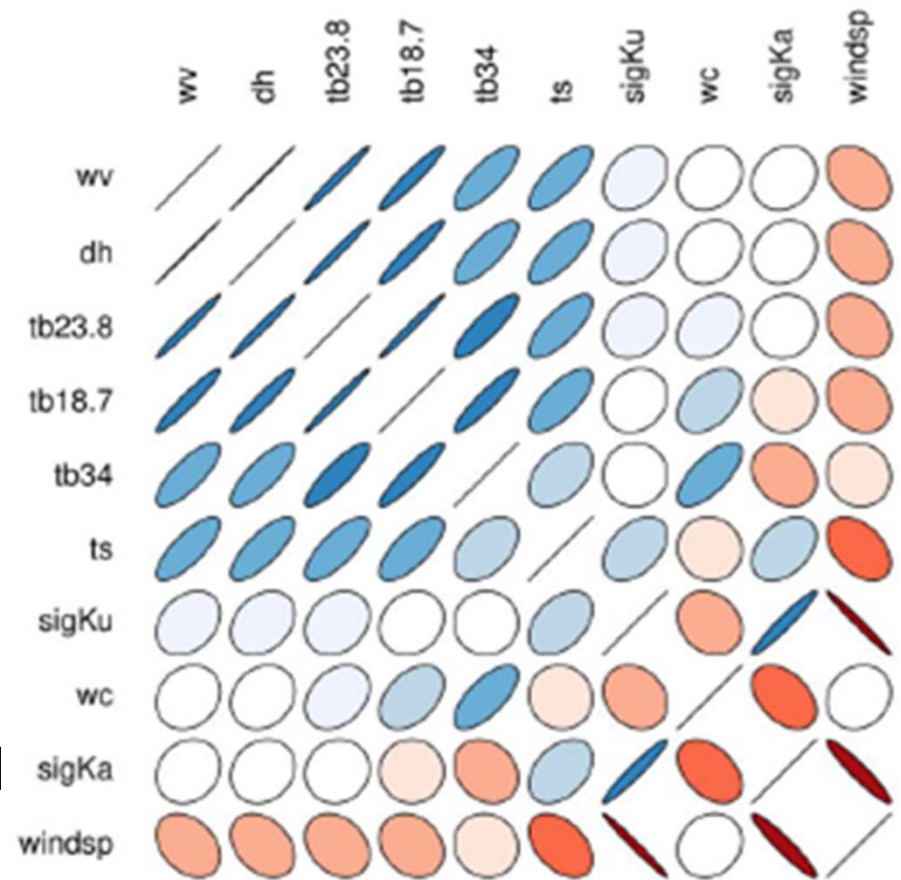
Using AIRWAVE Water Vapor to Improve Coastal WPD

- Use high-resolution infrared measurements from AIRWAVE to improve GPD+ algorithm near land
- At present, GPD+ algorithm still better without AIRWAVE data
- Improvements to spatial filtering of AIRWAVE data (e.g. clouds) and inter-calibration with MWR are needed



Need for 18.7 GHz Channel for WPD

- Evaluated need for 18.7 GHz channel in radiometer WPD retrieval (e.g. 2 vs 3-freq rad.)
- 18.7 GHz channels is sensitive to surface conditions (roughness + SST = emissivity) but also well sensitive to WV from a simulation point of view:
18.7 GHz > sigma0_Ka > sigma0_Ku
- Conclusion is valid in a global statistical sense, but may not represent results near land or in areas of high-spatial variability at the surface – could lead to regional biases
- Some answers may be found using GMI + Ka/Ku PR observations on GPM



Roundtable Discussion/Recommendations

- **Would increasing the frequency of the Jason-3 AMR cold sky calibrations to improve the long term stability?**
 - Mathematically yes, but given current constraints, the benefit would be minimal given current radiometer drift rate
 - Newly implemented calibration schedule based on 2016 OSTST recommendation is nearly optimal
 - We thank the project for implementing 2016 recommendation and do not recommend an additional increase in frequency at this time

