

CALVAL splinters summary

Local and Global Calibration/Validation

Chairs: P. Bonnefond, B. Haines, S. Nerem; S. Desai, N. Picot

Local calibration/validation
(focusing on bias)

Monday, October 18

Chairs: P. Bonnefond, B. Haines, S. Nerem

7 oral presentations

10 posters

Local Cal/Val summary report

- [Good coherence of absolute biases](#)
 - from in-situ studies but also from regional approach
- [Enhanced Path Delay for JMR and AMR](#)
 - **Clear improvement for sites very close to the coast** (from 10-20mm bias removed, confirmed at Corsica with comparison with GPS)
- [Frequency analysis in the bias time series](#)
 - shows a clear 60d signal for T/P-ALTB from Harvest (not as clear for ALTA as well as for Jason-1&2)
- ...

Local Cal/Val summary report

- Cross-comparisons of Sea Surface Height derived from in-situ and altimeter measurements
 - No significant trend is detected in Jason-1 time series (+ 0.1 mm/yr) within the method error (+/- 0.5 mm/yr). After filtering out signal lower than 2 months and removing periodic signals, a parabolic curve is highlighted (~ 5 mm) and is under investigation.
 - Regional MSL trend differences between Jason-1 and Envisat underline East/West discrepancies which increased in time.
 - Further investigation required – additional support from OSTST POD (US teams) to provide independent solutions would be of interest.

Global calibration/validation

Tuesday, October 19

***(focusing on corrections quality assessment
and error budget assessment)***

Chairs: S. Desai, N. Picot

6 oral presentations

3 posters

Global Cal/Val summary report

- All speakers reported that Jason-2, Jason-1 and EnviSat missions have high data availability and quality. Meeting mission scientific requirements.



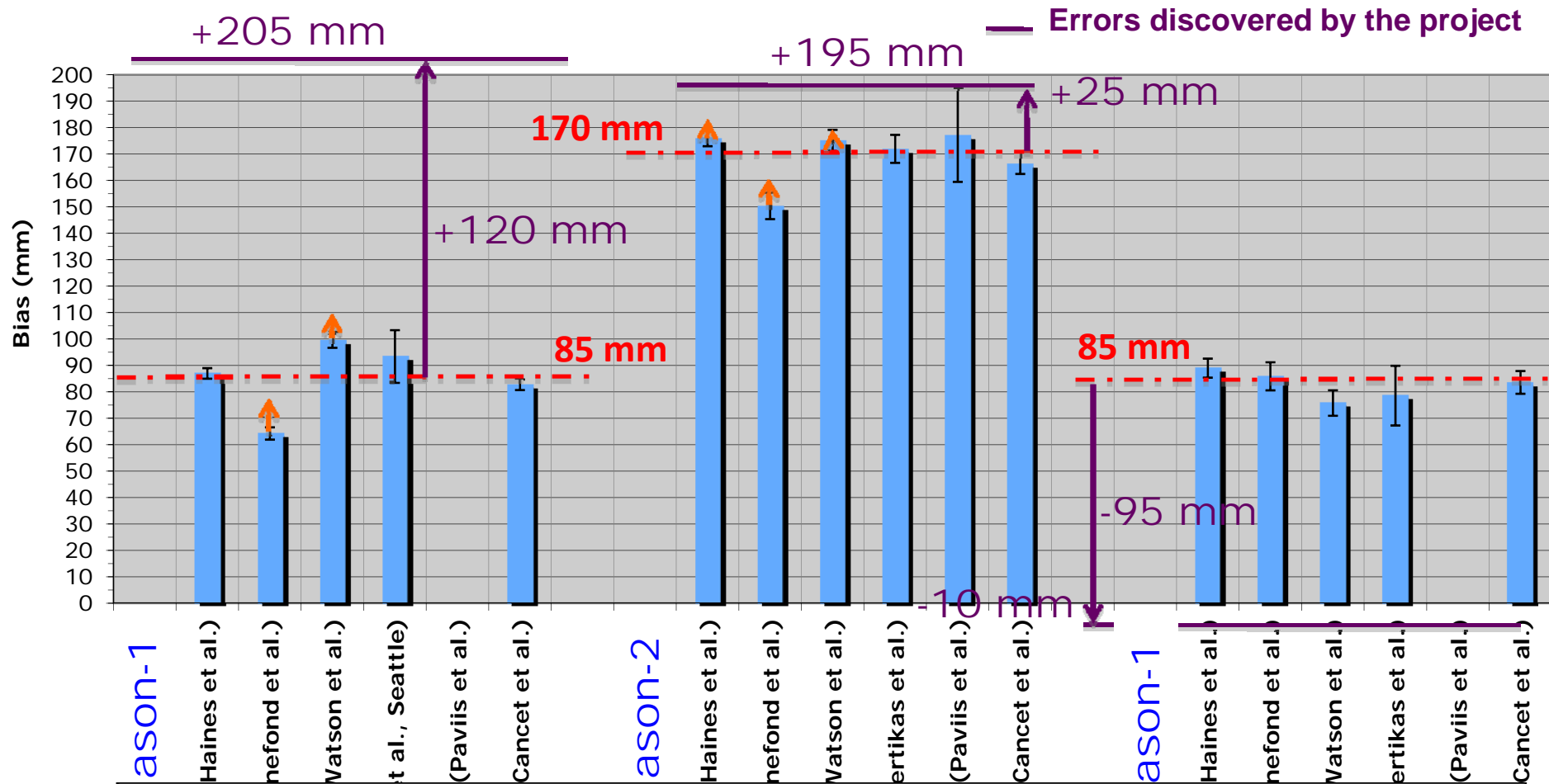
- Following EnviSat orbit change manoeuvres, ERS2 is once again becoming of interest. 4 altimetry missions (5 if we consider CryoSat) will be available.
- ...

Global Cal/Val summary report

- They however reported the following concerns:
 - Jason-1&2 orbit solutions from GDRs depict geographically correlated patterns of the order of 2 cm and a signal at 120 days on the Xover mean values.
 - Jason-2 JPL GPS-based orbit solution appears to have smallest geographically correlated errors.
 - **JPL GPS orbit solution could be considered for additional orbit altitude field, at least for GDR** (and perhaps IGDR?) products.
 - Growing interest in wind speeds measured by altimeter missions for climate studies.
 - Increased effort to monitor stability of wind speeds.
 - Define reference for σ_0 , and use identical algorithms for wind speed computation.
 - Jason-1 pointing stability has an impact on the long term drift.
 - Long term stability of radiometer wet troposphere correction should be known more precisely.

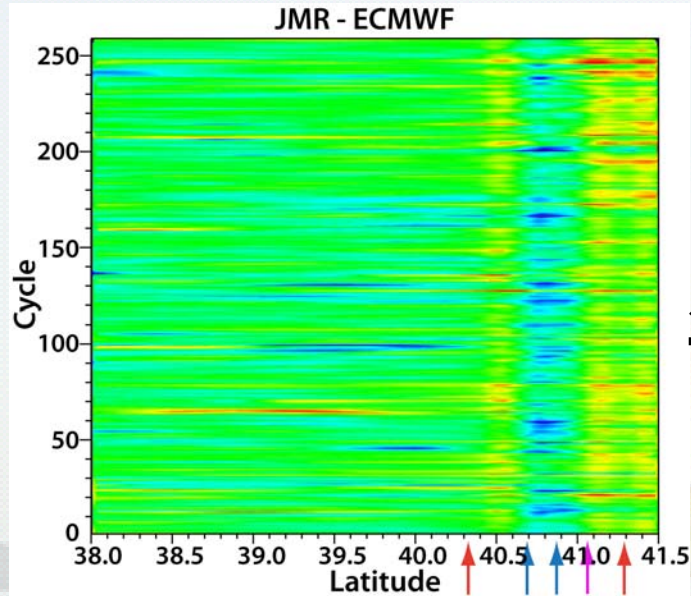
Summary of the absolute biases from in-situ calibration sites

Impact of the use of the Enhanced Path Delay (Brown et al., JPL)

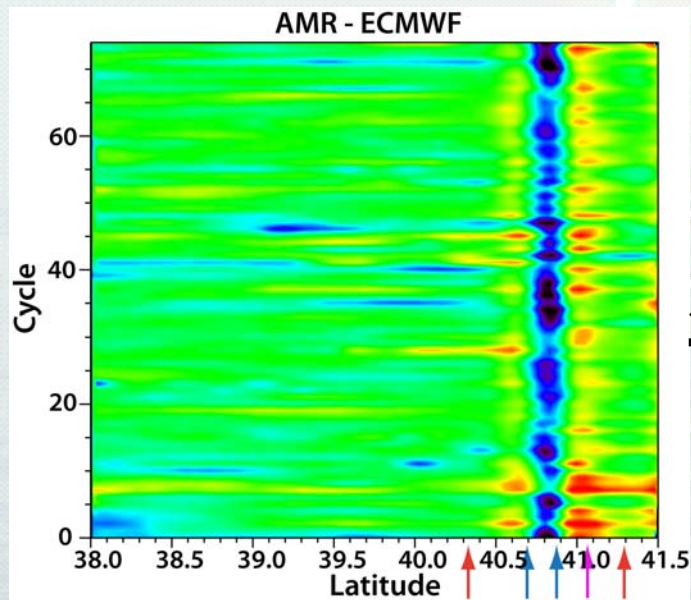
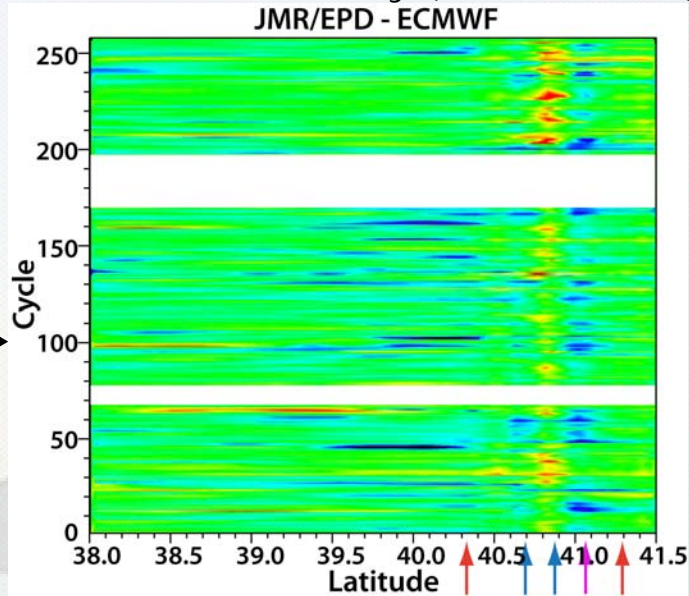


This will only be corrected in Jason-2 GDR-C:
 ⇒ The relative bias between Jason-1 and Jason-2 GDR-C will be recommended by the project (see N. Picot talk)
 ⇒ Estimated for the moment to 110-120mm

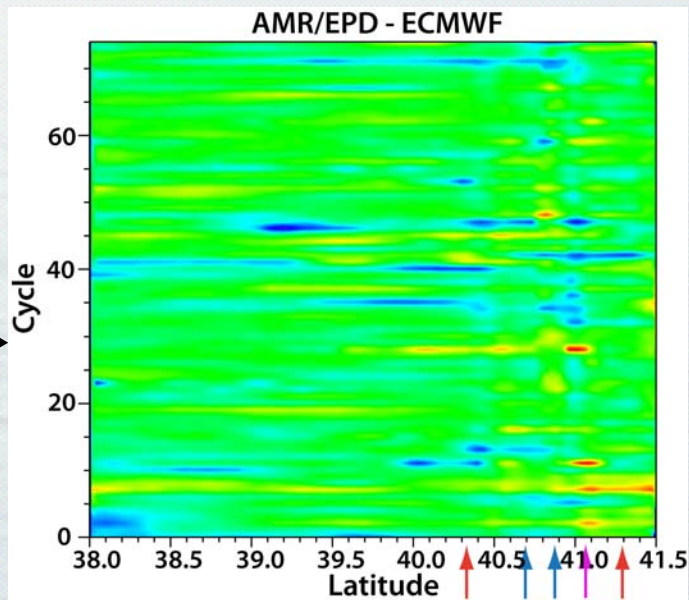
Jason-1, Jason-2 Wet Tropospheric Path Delay (whole set of available products)
Original Path Delay (GDRC) Enhanced Path Delay (Brown et al.)



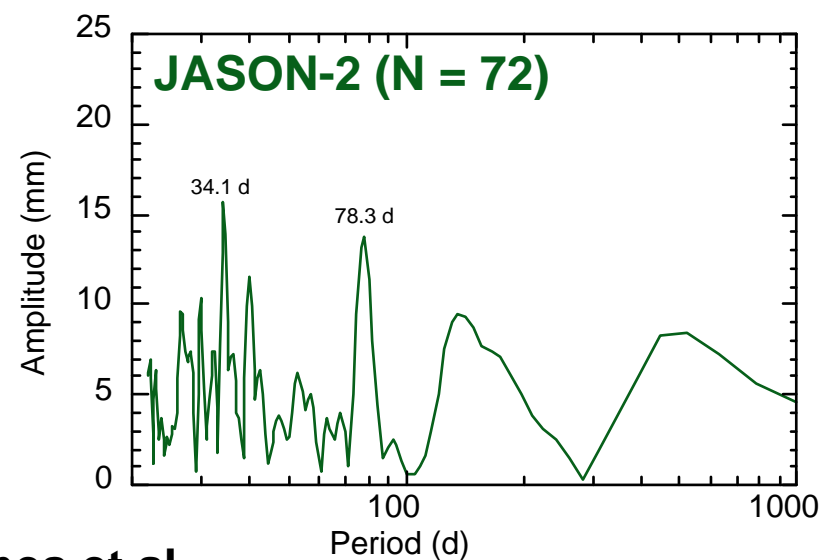
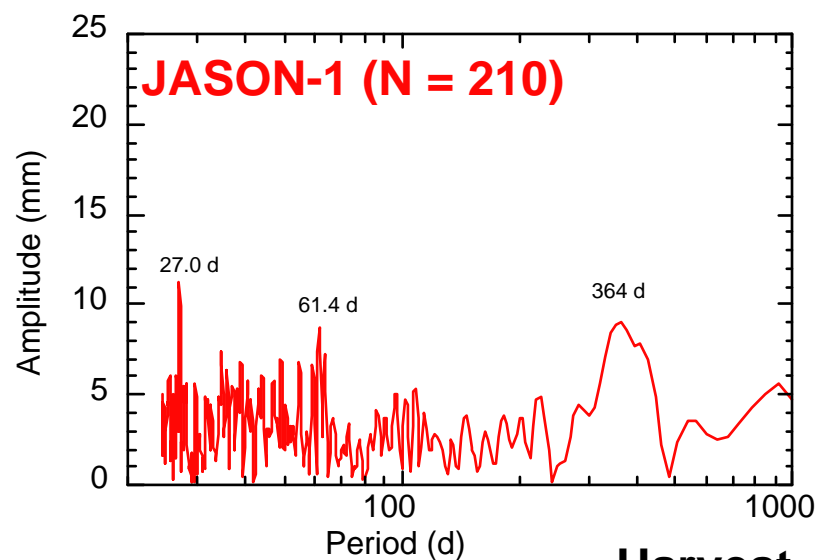
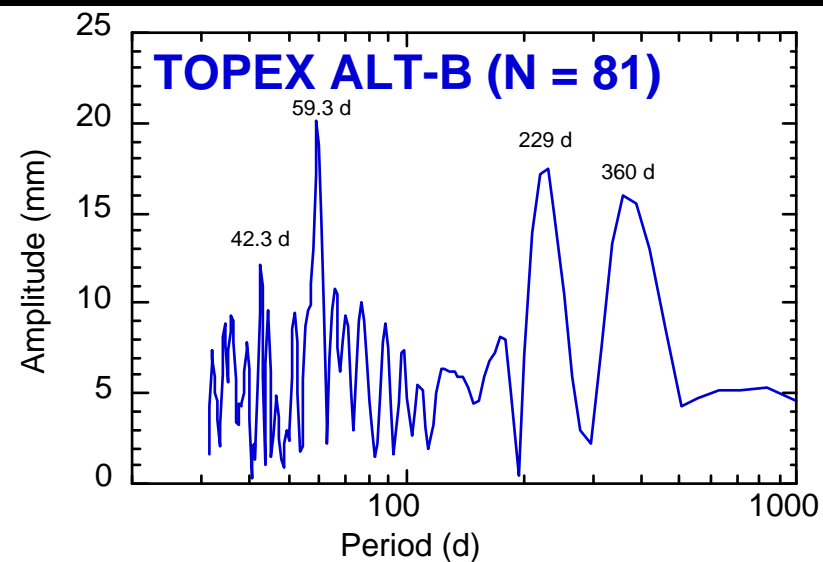
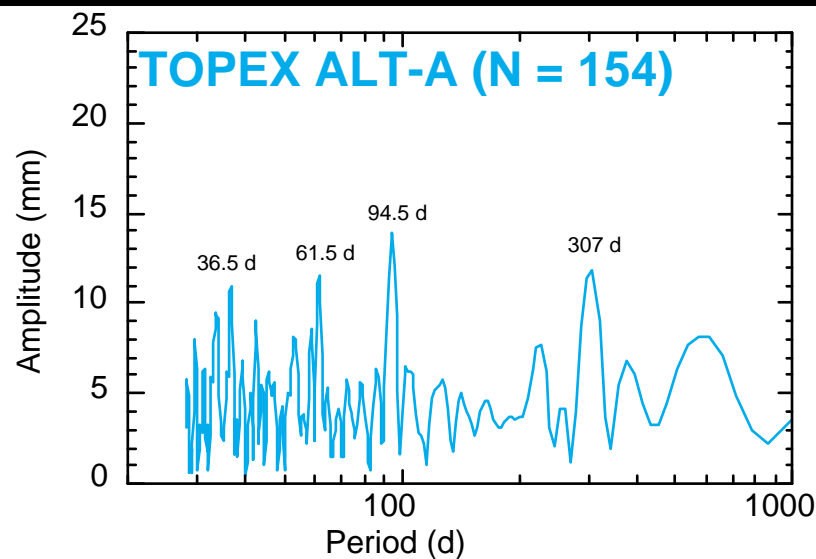
Jason-1



Jason-2



Corsica, Bonnefond et al.



Harvest, Haines et al.

Envisat/Jason-1 regional MSL discrepancies

- Regional MSL trend differences between Jason-1 and Envisat underline East/West discrepancies (see Faugere's talk) :
 - ⇒ -3 mm/yr on East Ocean [0° ,180°] and + 3mm/yr on West Ocean [180° ,360°]
 - ⇒ This strong longitude dependence displays a sinusoidal shape

Regional MSL Trends differences (period : Nov-2003 to Sep-2009)
Jason-1 – Envisat

