

OSTST 2012  
Instrument Processing  
Summary

# Instrument Processing Summary (1)

- **Jason-CS recommendations will be presented separately**
- **What is “good agreement” at this stage of altimetry?**
- N. Tran: SSB on GDR-D
  - A difference of  $\sim -3$  cm between J1 GDR-C SSB and J2 GDR-D has been noted in a number of presentations. It results from change in method, SSH standard, WS reference.
  - SSB on J2 GDR-D was computed on J2 GDR-T, but does not include small  $\sigma_0$  corrections or atmospheric attenuation and hence can be improved.
  - New solutions are available (tables). Users can update products to improve homogeneity of J1, J2.
  - The difference  $J2\_New - J1\_NewOrb$  is  $< \sim 5$  mm. No SWH-WS structure.
  - The effect on the ionosphere should be checked
- E. Obligis: Improved Analysis of Scanning Radiometers
  - About 92% of ocean is covered in 4 hr considering all radiometers
  - It is possible to support CryoSat-2 NRT with results from the set of scanning radiometers

# Instrument Processing Summary (2)

- D. Sandwell: Double Retracking
  - Parameters are correlated in retracking solutions. Therefore, fixing one or more allows better retrieval of others: gain of 1.56 in range noise if fix SWH
  - Use smoothed SWH from MLE3 over  $\sim 40$  km to get highest precision range. Interestingly, Jason-2 can be smoothed over  $\sim 20$  km
- P. Thibaut: Numerical Retracker
  - Useful for SAR or systems with non-standard (e.g., TPX Alt-A) PTRs
  - Performs derivatives numerically
  - Reduces WF residuals noticeably vs MLE4
  - May be some issues at very low SWH

# Instrument Processing Summary (3)

- CryoSAT SAR Processing (several papers)
  - See Jason-CS discussion
  - Much progress in processing. Groups in general agreement on approaches to SAR and pseudo-LRM.
  - Cannot directly compare SAR and LRM, so compare SAR with Jason. Comparison show difference of a “few” cm.
  - Without global SAR data it is difficult to fully develop a bias or SSB correction
- SAR Processing Issues
  - Optimal weighting of Doppler beams needs to be evaluated (width of range function increases for off-nadir beams)
  - Main low SWH problem seems solved, but not clear about  $<\sim 1$  m
  - Is SAR sensitive to swell and/or wave direction?
  - For full accuracy need to develop SSB correction

# Instrument Processing Recommendations

- Recommendation: Bump in SSH spectra near 10-30 km wavelength needs a clear explanation
  - Aliasing/correlation of error from other parameters with this sort of correlation length ?
- The recommendations of the Coastal Altimetry group on (3) data distribution and (5) Sentinel-3 are endorsed
- Noting the benefits of SAR mode data and the value of comparing various versions of processing, the OSTST recommends that ESA authorize the distribution of CryoSAT SAR data products from these groups for cal/val purposes. Furthermore, distribution of raw data should be considered.

# SLA Spectrum (F. Boy)

