

Instrument Processing Summary

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Continued,
enhanced ocean altimetry
and climate monitoring
from space

31 October > 4 November 2022

IDS workshop
OSTST meeting

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<https://ostst-altimetry-2022.com/>

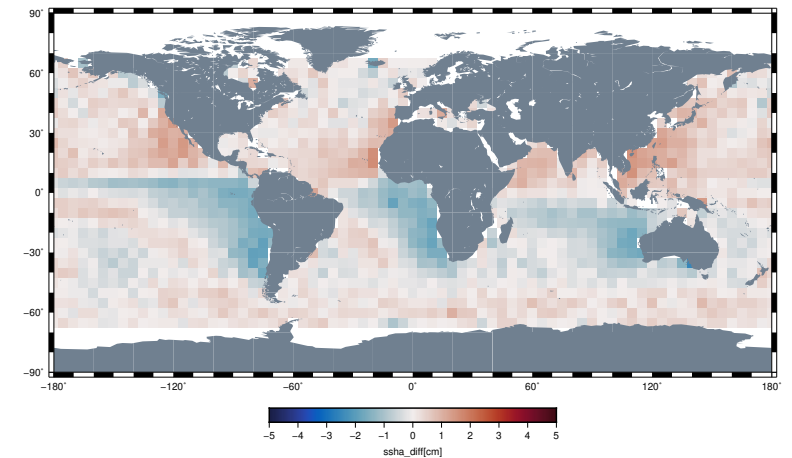
The banner features a colorful background with a satellite in the upper left, a map of Europe in the center, and a silhouette of the Venice skyline at the bottom. Logos for Cnes, Copernicus, EUMETSAT, NASA, and JPL are displayed on the right side.

Outcomes and recommendations (I)

Excellent session with high quality presentations and outstanding results.

Great advances in the understanding of surface motion impact on UF-SAR mode performance:

- Look-Up Tables (A. Egido) for correcting HR SWH from the vertical velocities impact are fully validated and ready for operational implementation (S6/PDAP end Q2 or end Q4 2023, eligible to S3 & CS2).
- Good progress on 2D retracking (C. Buchhaupt), vertical and horizontal velocities are estimated, explaining differences between HR and LR related to surface motion (VV & Meridional winds)



Discussion on **the need to increase the posting rates** (F. Ehlers):

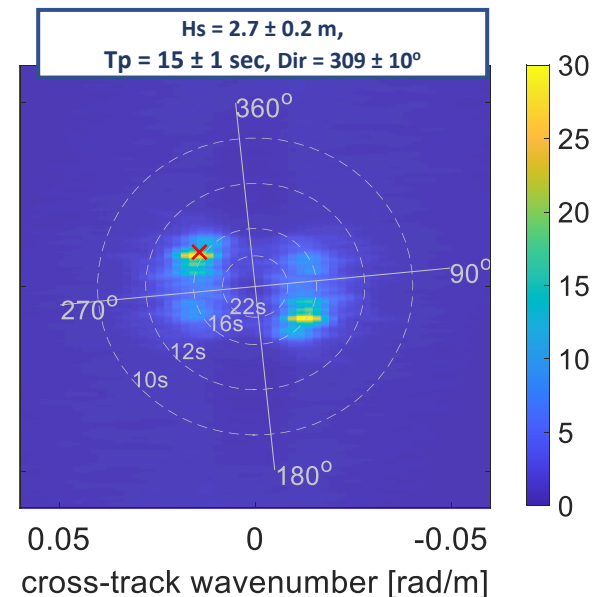
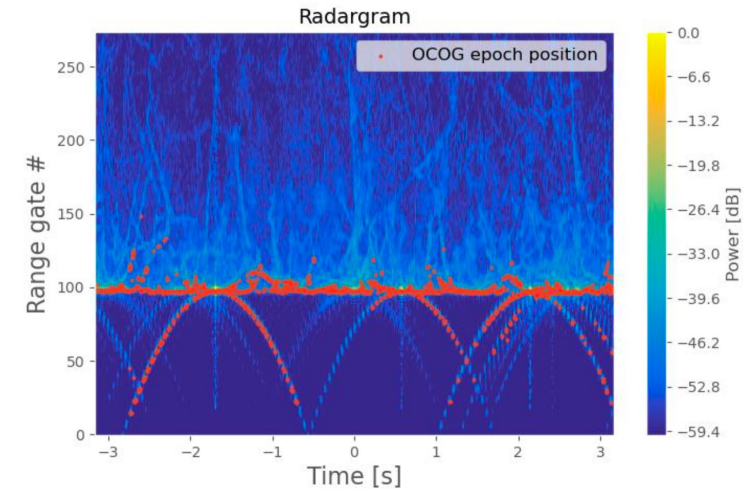
- At least 40Hz, to compute unaliased spectra in case of a perfect sinc² decorrelation. Additional efforts needed to better quantify the gain.

Outcomes and recommendations (II)

Fully-Focused SAR processing progress:

- SAMOSA model (adapted) could be used to retrack fully-focused SAR data (F. Ehlers)
- Replicas in the S6 data over hydrology targets and sea ice arise from gaps in the radargram (CAL + C-band pulses) (S. Amraoui). Removing those is challenging, further investigation is needed.
- FF-SAR offers new science perspectives as swell detection/characterization (O. Altiparmaki)!

Sentinel-6 radargram of sea-ice, Antarctica



Outcomes and recommendations (III)

Adaptive retracking for conventional altimetry:

- 20 years of homogeneous data (J1,J2,J3,EN1,CFOSAT) reprocessed with the Adaptive retracker soon available (FDR4Alt, F. Piras)
- New formulation can make it faster with equivalent performance (FastAdaptive, A. Mangilli)

