Near Real Time Products & Applications
OSTST 2013, Boulder

Round Table Summary
~100 attendees
NRT products and applications
Development summary

• New data used in multimission analysis and forecast systems (AltiKa, HY-2)
• New corrections (wet troposphere for CryoSat-2 or others without radiometer)
• New retracking and datasets (DAHITI for hydrological monitoring)
• New sensitivity analysis through MERCATOR (quantification of data volume impact)
• New impact on waves (AltiKa reduces scatter index to <10%)
• New impact to science studies (NASA equatorial salinity and eddy effects)
• New real time applications (MARACOOS)
NRT products and applications
Round table summary

- NRT applications are critically reliant on altimeter observations
- Increasing independent observations has highest priority
- Severe degradation in NRT products occurs with < 2 sensors. There is perceived risk of time periods with only 1 sensor through Sentinel

Recom: Future satellites and constellations must be ensured (use of CFOSAT? HY-2?)
NRT products and applications
Round table summary

• Jason-2/Jason-3 interleaved orbit: 5 day interleaved phase similar to Jason-1/Jason-2
• Some differences between TOPEX/Poseidon and Jason-1 are not fully understood
• Some differences between Jason-1 and Jason-2 are not fully understood

Recom: Jason-2 / Jason-3 interleaved phase occur as soon as differences are sufficiently characterized during formation flight / tandem phase
NRT products and applications

Round table summary

• Tradeoffs of future sampling under various orbit configurations could provide added value for NRT applications

Recom: Quantify the impact of sampling provided by different options for future missions
NRT products and applications
Round table summary

• Progress is impeded by lack of clear data sources for ocean observations
• Altimeter data sources have some defined availability (GTS, RADS, EUMETCAST, AVISO)
• Other data sources are scattered
• QC is inconsistent, formats are inconsistent, duplication of effort in research community, ...

Recom: At national level (Mercator, NOAA/NCEP/NOS, ...?), data dissemination coordination should be defined
NRT products and applications
Round table summary

• Concern regarding maturity of SAR / LRM consistency
• Sentinel 3A will provide SAR information that will aid progressing processing
• Risk of gap in ability to use Sentinel 3A data

Recom: Ensure SAR / LRM consistency is well understood and Sentinel 3A processing is ready
Questions?

Cool pictures follow
HY-2A RS-IGDR

Assessment over cycle 24: Sea Surface Height

- A comparison to DUACS multi mission maps does not display large geographical patterns which is a clear indication of the high level data quality of RS-IGDR HY-2A data. Which is again largely different from IGDRs products

Nicola Picot
Along-track statistics

Variance of ECMWF - RAD
Mission j2, cycles 148 to 157

Variance of AO - RAD
Mission j2, cycles 148 to 157
Lake Mweru (5,120 km²)

Lake Michigan (58,016 km²)

- Correlation with gauge (red): 0.95
- Very good absolute agreement due to same height reference (WGS84)
Mercator OSE sensitivities

RMS misfit, full domain.

Green line: No altimetry,
Light blue line: Jason 1,
Orange line: Jason 1 + Envisat,
Black line: Jason 1 + Envisat + GFO,
Blue line: Jason 1 + Envisat + GFO + T/P,
Green dotted line: Progressive loss.

Drifter trajectory superimposed on mean SSH; bottom right: satellite tracks. (Benkiran et al.)
Zhijin Li, Improved Representation of Eddies in Regional Real-Time Forecasting Systems Using Multi-Scale Data Assimilation of Satellite Altimetry
MARACOOS [assets.maracoos.org](http://assets.maracoos.org) map server displays Near Real Time data and models.