

Ocean Surface Topography Science Team (OSTST)
Meeting and 7th Coastal Altimetry Workshop (CAW-7)

7 Oct 2013 to 11 Oct 2013

Boulder, CO



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

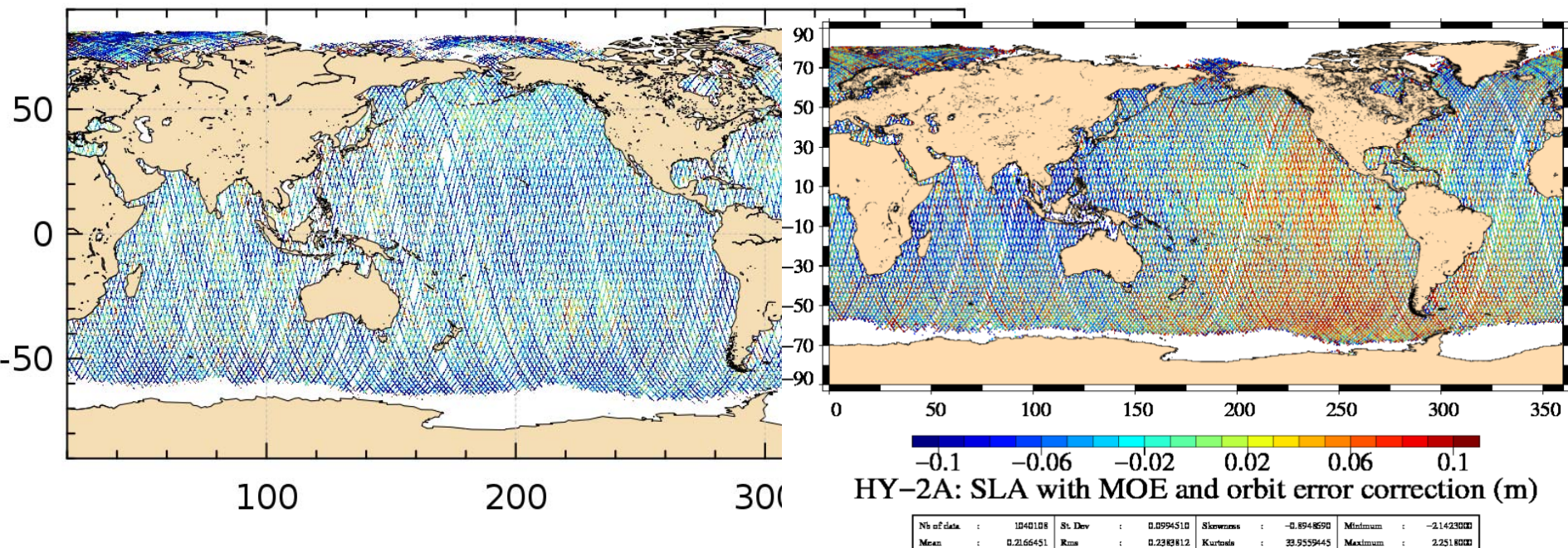
Recom: Ensure SAR / LRM consistency is well understood and Sentinel 3A processing is ready

Questions?

Cool pictures follow

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



SLA HY-2A IGDR (HPP) - DUACS NRT (m)



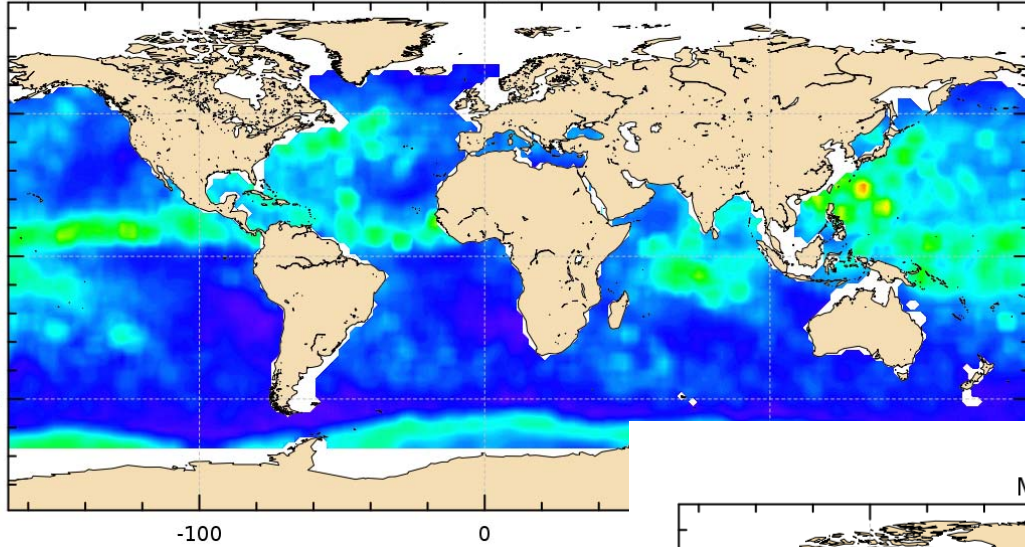
Nbr :	547284	Std Dev :	0.064765789	Min :	-2.0250236
Mean :	-0.039991019	Median :	-0.039134119	Max :	1.8135587



Along-track statistics

Variance of ECMWF - RAD

Mission j2, cycles 148 to 157

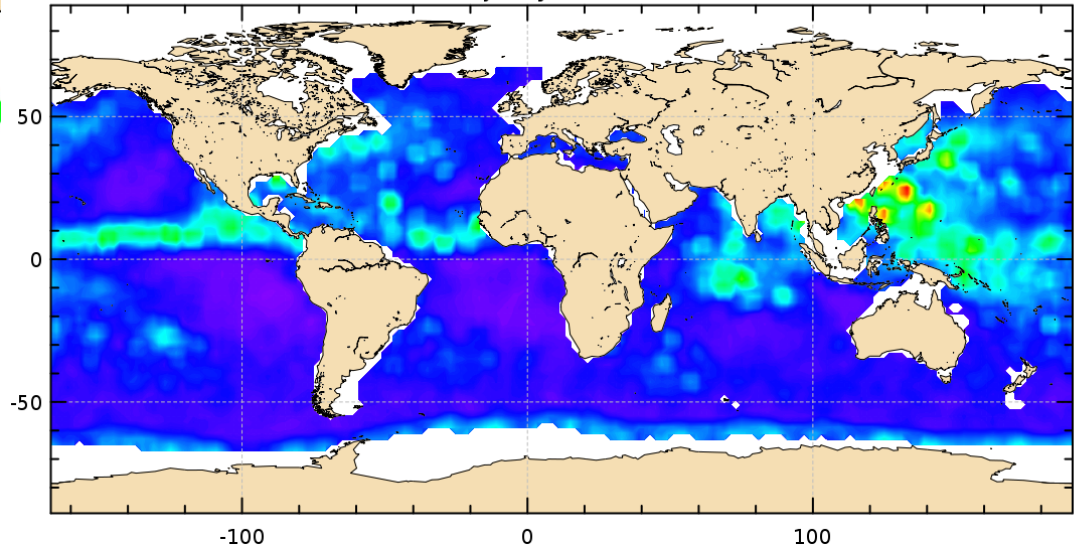


Variance (cm)



Variance of AO - RAD

Mission j2, cycles 148 to 157

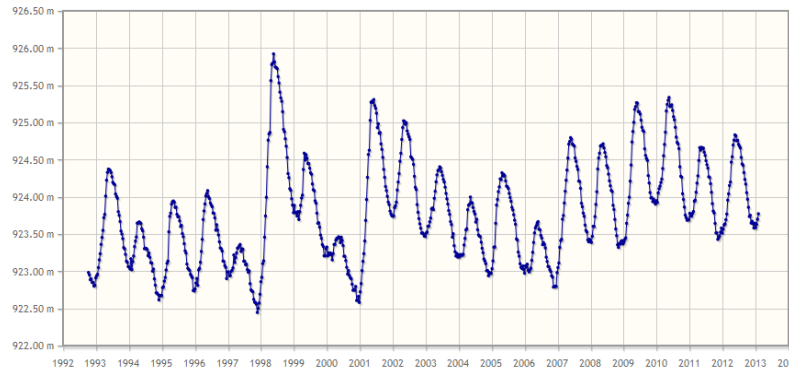


Variance (cm)



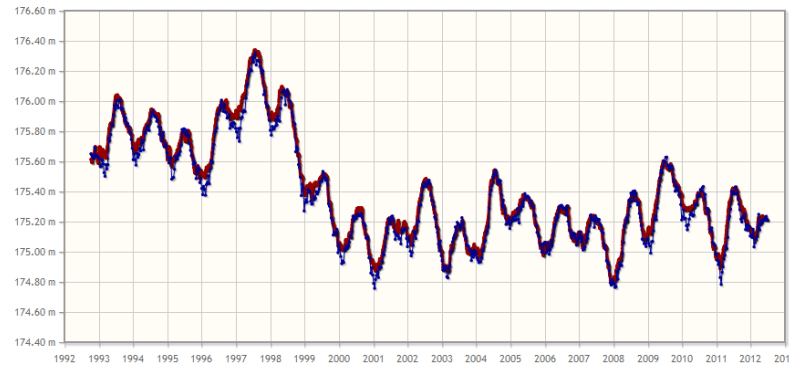
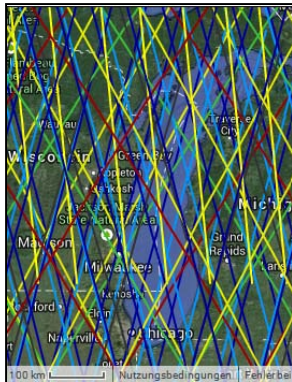
DAHITI: Database for Hydrological Time Series of Inland Water

Lake Mweru (5,120 km²)



Mission	Passes
Envisat (20Hz)	0915
Jason-1 (20Hz)	209
Jason-2 (20Hz)	209
Topex (10Hz)	209

Lake Michigan (58,016 km²)

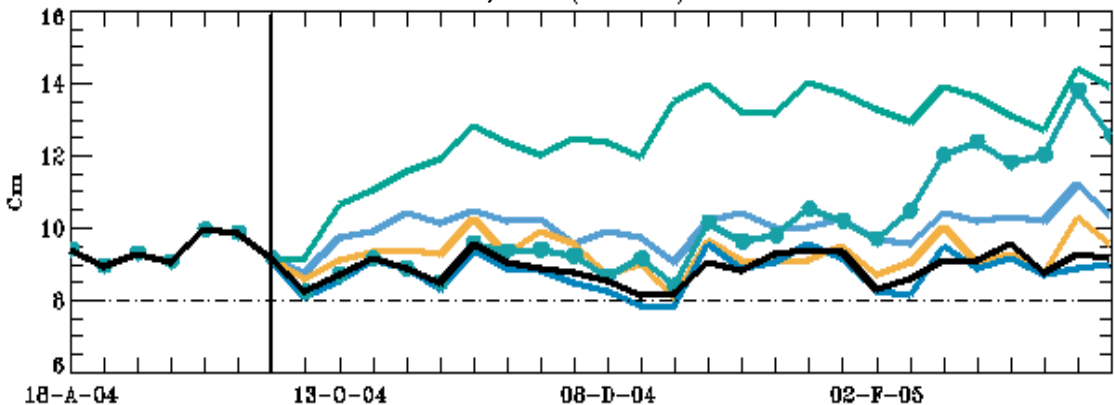


Mission	Passes
Jason-1 (1Hz)	041, 076, 219, 254
Jason-2 (1Hz)	041, 076, 219, 254
Topex (1Hz)	041, 076, 219, 254
Envisat (1Hz)	7, 338, 465, 551, 882, 923
Topex-EM (1Hz)	041, 076, 054
Jason1-EM (1Hz)	041, 076, 054

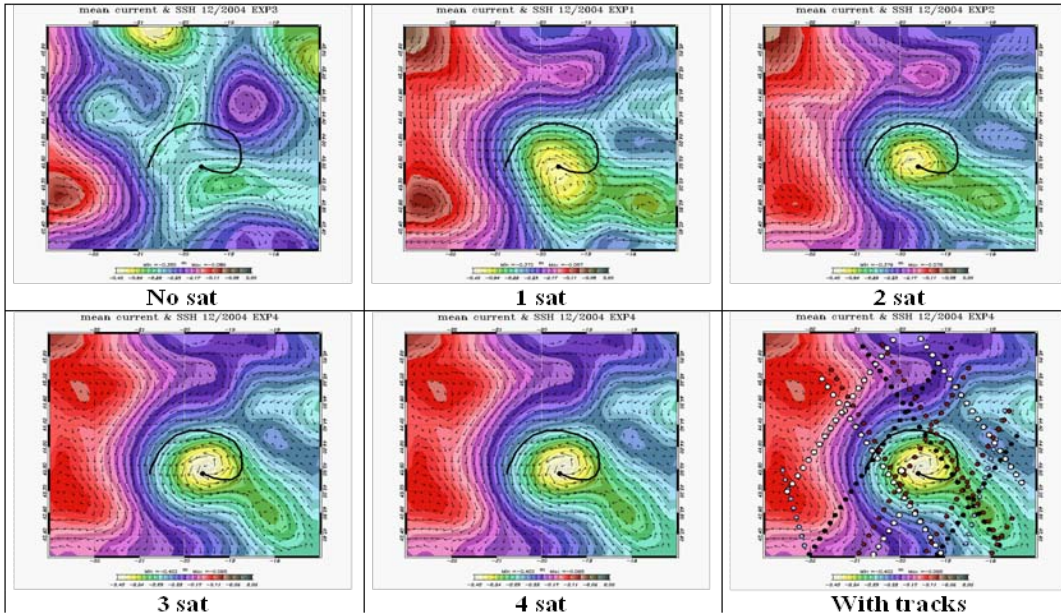
- Correlation with gauge (red): 0.95
- Very good absolute agreement due to same height reference (WGS84)

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.

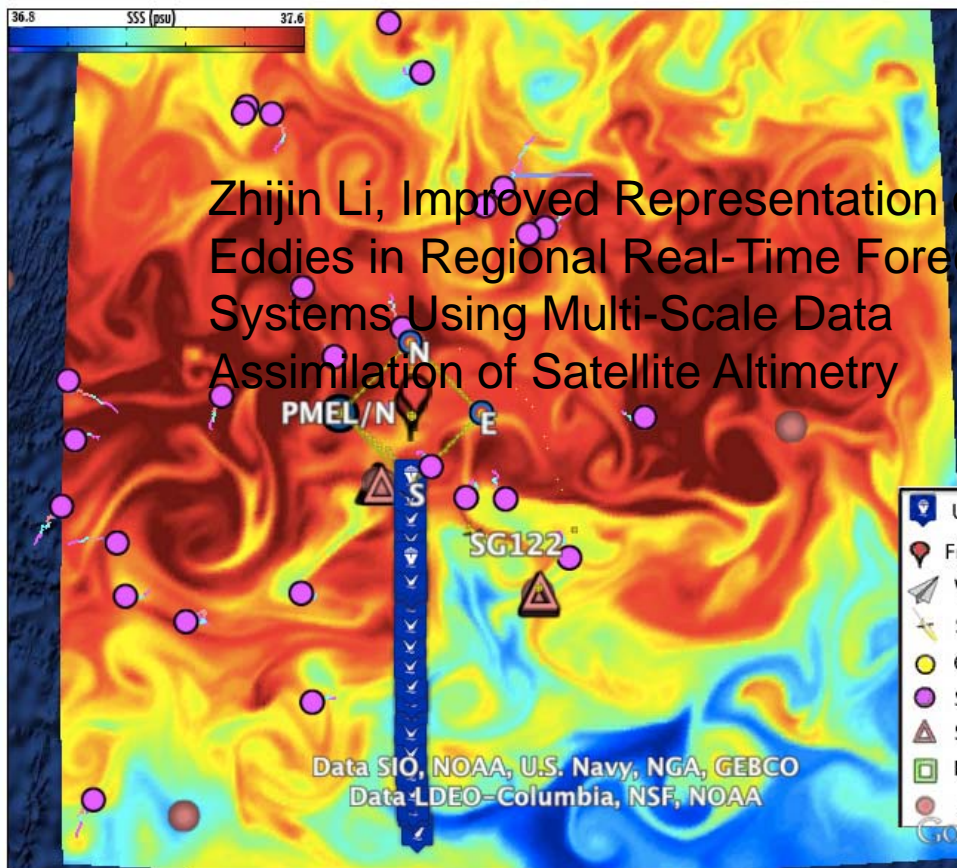


Drifter trajectory superimposed on mean SSH; bottom right: satellite tracks. (Benkiran et al.)

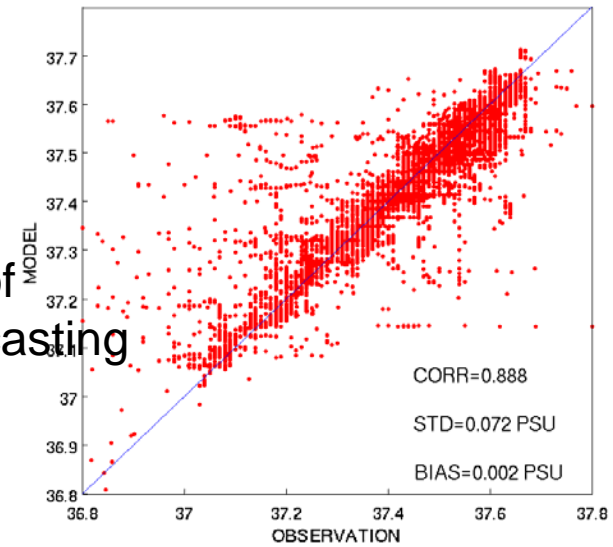
September 2013

Su	M	T	W	Th	F	S
01	02	03	04	05	06	07
08	09	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

In-Situ Routine
 Profiles
 GTS Drifters
 In-Situ SPURS
 Underway
 Endeavor
 Sarmiento
 Flux Moorings
 Wave Gliders
 Sea Glider
 SG122
 SG144
 SG160
 SG189
 SG190
 SG191
 SVP/S Drifters
 STS Floats
 Satellite Data
 Aquarius SSS L3 7-day
 JPL G1SST
 NCEP OI SST



Zhijin Li, Improved Representation of Eddies in Regional Real-Time Forecasting Systems Using Multi-Scale Data Assimilation of Satellite Altimetry



R/V Endeavor, 9/19-10/15, 2013

MARACOOS assets.maracoos.org map server displays Near Real Time data and models

