



'Take home messages' from the 2nd Coastal Altimetry Workshop

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Smith, Helen Snaith, Ted Strub, Phil Woodworth



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1) Coastal altimetry is inherently interdisciplinary

- Need constant interaction with hydrographers, modellers, in situ scientists on the application side, engineers on the technical side
- Can't "walk alone" BUT it is perceived as pretty legitimate (and very useful) component of coastal observing systems
(and, yes, we are now confident we can recover 15+ years of data...)

RECOMMENDATION: we need to reach out to more (potential) users



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2) Coastal altimetry research feeds back into open ocean altimetry

- Most (if not all) Cal/Val sites are coastal!
- It is a useful training ground to tackle many instrumental and geophysical correction problems.
- Challenges all elements of the altimetry system and encourages/motivates a revisit of not-completely-solved problems...
 - example: SSB



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3) Very promising improvements on tracking/retracking

- DIODE/DEM on J2 looks good (but on-board DEMs are not so good)

RECOMMENDATION: put higher resolution DEMs on future missions

- Retracking: several different algorithms being implemented and tested (like those in the PISTACH and COASTALT processors)

RECOMMENDATION: we need proper validation/intercomparison of retrackers (incl. assessing biases)

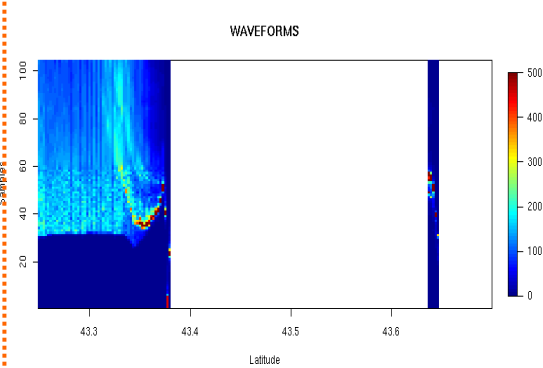
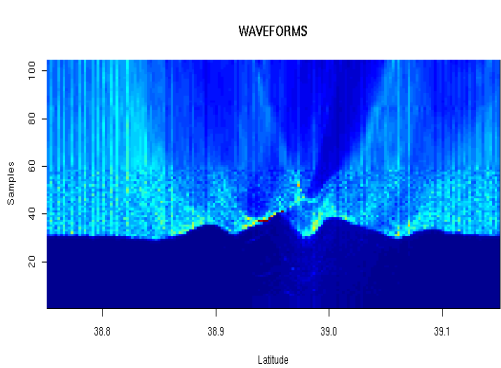
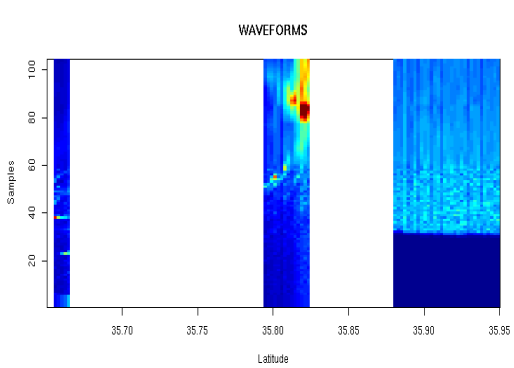
Jason-1/Jason-2 comparison on coastal zones : P187 on med. sea

*From land
to ocean*

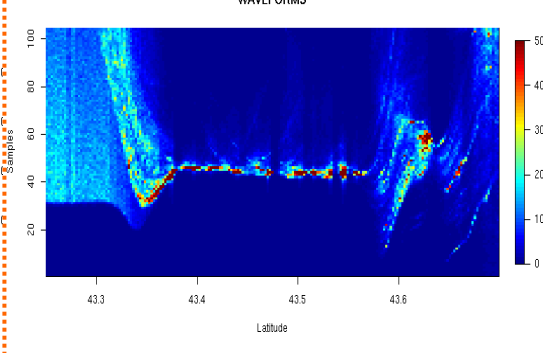
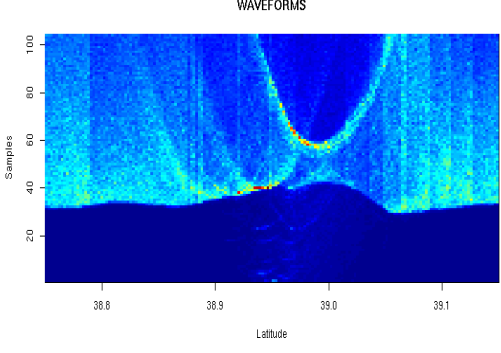
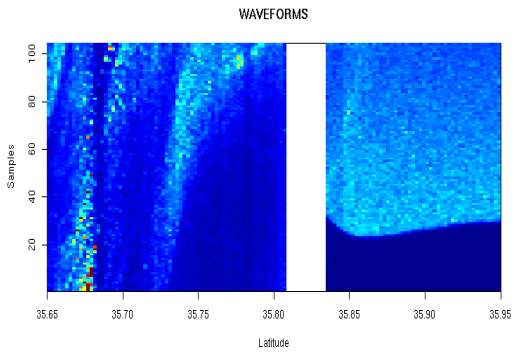
On islands

*From ocean
to land*

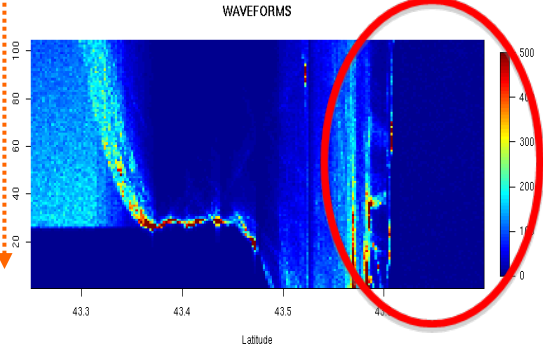
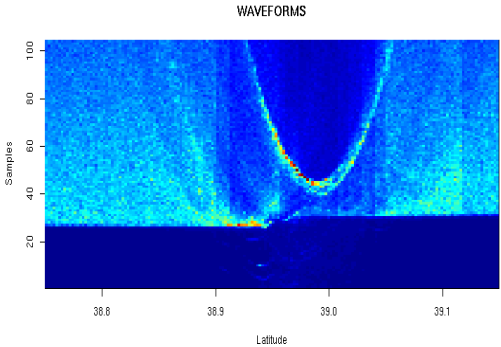
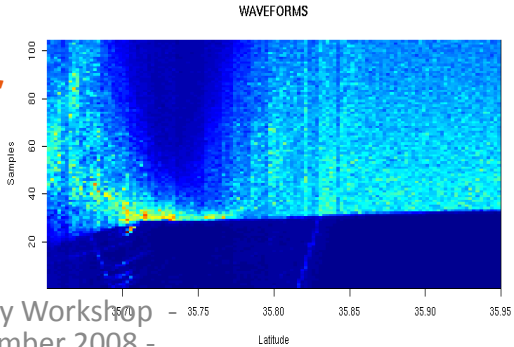
*J1
(cycle 240)*



*J2 Median
(cycle 8)*



*J2 DIODE
DEM
(cycle 7)*





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4) Very promising improvements on corrections

- Wet tropospheric
 - Land decontamination (CLS: operational PISTACH algorithm; JPL: new approach)
 - GPS-derived (U Porto; accurate but needs extending globally)
 - MODIS-derived – useful for comparison (cloud-free)
- Ionospheric
 - Recomputed from dual-freq. re-tracked ranges
 - GIM

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4) Very promising improvements on corrections (cont.)

- Tides
 - Recent progress (GOT 4.7, EOT08a) promising
 - Need more work on local models
- IB/HF
 - Form collections of outputs from local models using extensive local expertise

RECOMMENDATION: need better bathymetry (1km or even 200m, global)

- For all corrections, we need to quantify improvement on a regional basis



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5) Products are coming out!

- Jason-2: PISTACH v1.0 L2 products available
 - First pass (cy 12 tr 4) released last Friday
- Envisat: COASTALT products over selected pass in 3 test areas (NW Med, W Britain, W Iberia) in Spring 2009
 - Fully expandable (users can easily add local/new fields)
- In parallel, new ideas for data distribution (such as Web Services – JPL)
- Future: Reprocess all missions? NRT data?

A vibrant international community



78 participants, **16** countries, **5** continents

Does cross-cutting research, reports to OSTST

Mailing list [COASTALT-SWT] with 200+ contacts

Agencies' effort: COASTALT (ESA), PISTACH (CNES), some OSTST projects



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www.coastalt.eu

- **Summary of 1st WS**
 - Links to all presentations
- **Summary of 2nd WS** (*DRAFT – comments are welcome!*)
 - Links to all presentations (in a few days)
- Links to project activities, research, documentation
- Links to datasets (as soon as available)

To be added to the mailing list, e-mail cipo@noc.soton.ac.uk

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→ TOPICS

- 1 → User requirements for coastal altimetry
- 2 → Retracking
- 3 → Corrections: Dry/Wet Tropospheric, Ionospheric, Tides & HF
- 4 → SSB & Waves
- 5 → Data Products, quality and dissemination
- 6 → Synergy with other data and models
- 7 → Forthcoming technologies
- 8 → International Cooperation and Future Programs

→ ORGANIZING COMMITTEE

Jérôme Benveniste - *European Space Agency - ESRIN, Frascati, Italy*
Nicolas Picot - *Centre Nationale d'Etudes Spatiales (CNES), Toulouse, France*
Stefano Vignudelli - *Consiglio Nazionale delle Ricerche (CNR), Pisa, Italy*
Paolo Cipollini - *National Oceanography Centre, Southampton, U.K.*

November 6-7, 2008

Pisa, Italy



→ www.coastalt.eu/pisaworkshop08

CAW-3: Sept 16-18, 2009, ESA/ESRIN (TBC)