

# Take home messages from the 6<sup>th</sup> Coastal Altimetry Workshop

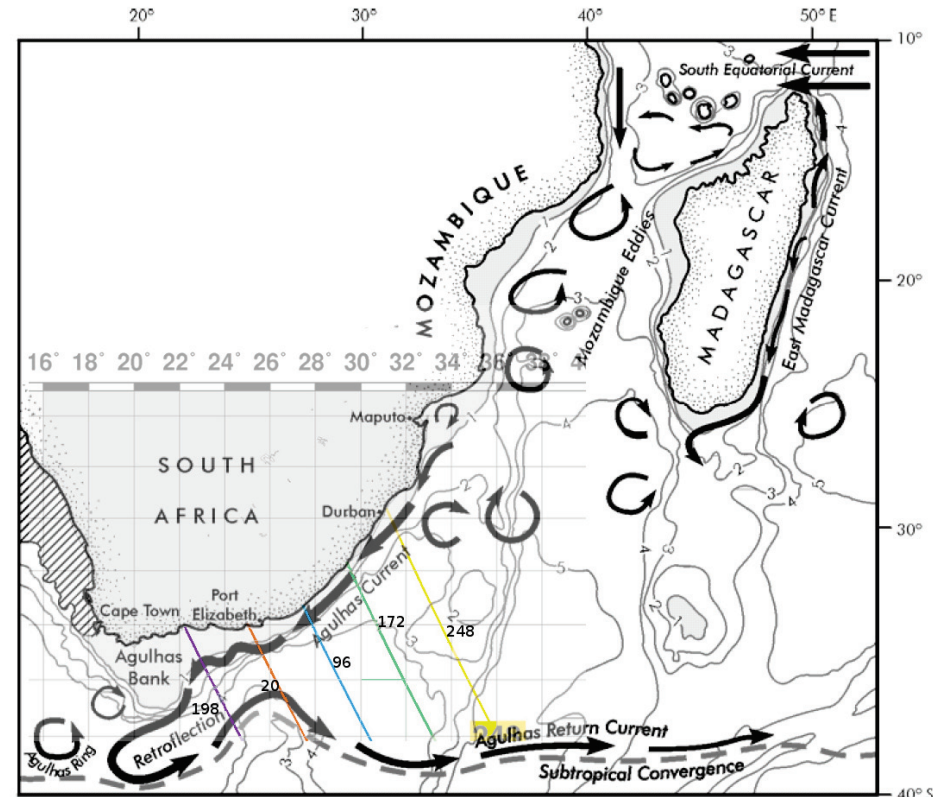
Paolo Cipollini, National Oceanography Centre, UK

**Organizing committee:** J. Benveniste (ESA), P. Cipollini (NOC), L. Miller (NOAA), N. Picot (CNES), R. Scharroo (NOAA/Altimetrics), T. Strub (OSU), D. Vandemark (UNH), S. Vignudelli (CNR), S. Zoffoli (ASI)

**Session Chairs:** O. Andersen (DTU), L. Bao (Chinese Acad. Sci), F. Birol (CTOH/LEGOS), X. Deng (U Newcastle), W. Emery (U Colorado), L. Fenoglio-Marc (TU Darmstadt), J. Fernandes (U. Porto), J. Gómez-Enri (U Cadiz), D. Griffin (CSIRO), G. Han (Fisheries and Oceans), J. Hausman (JPL), K. Ichikawa (Kyushu U), A. Kostianoy (P.P. Shirshov), V. Kourafalou (U Miami), M. Saraceno (U Buenos Aires), W.H.F. Smith (NOAA), J. Wilkin (Rutgers U), S. Yenamandra (NIO)

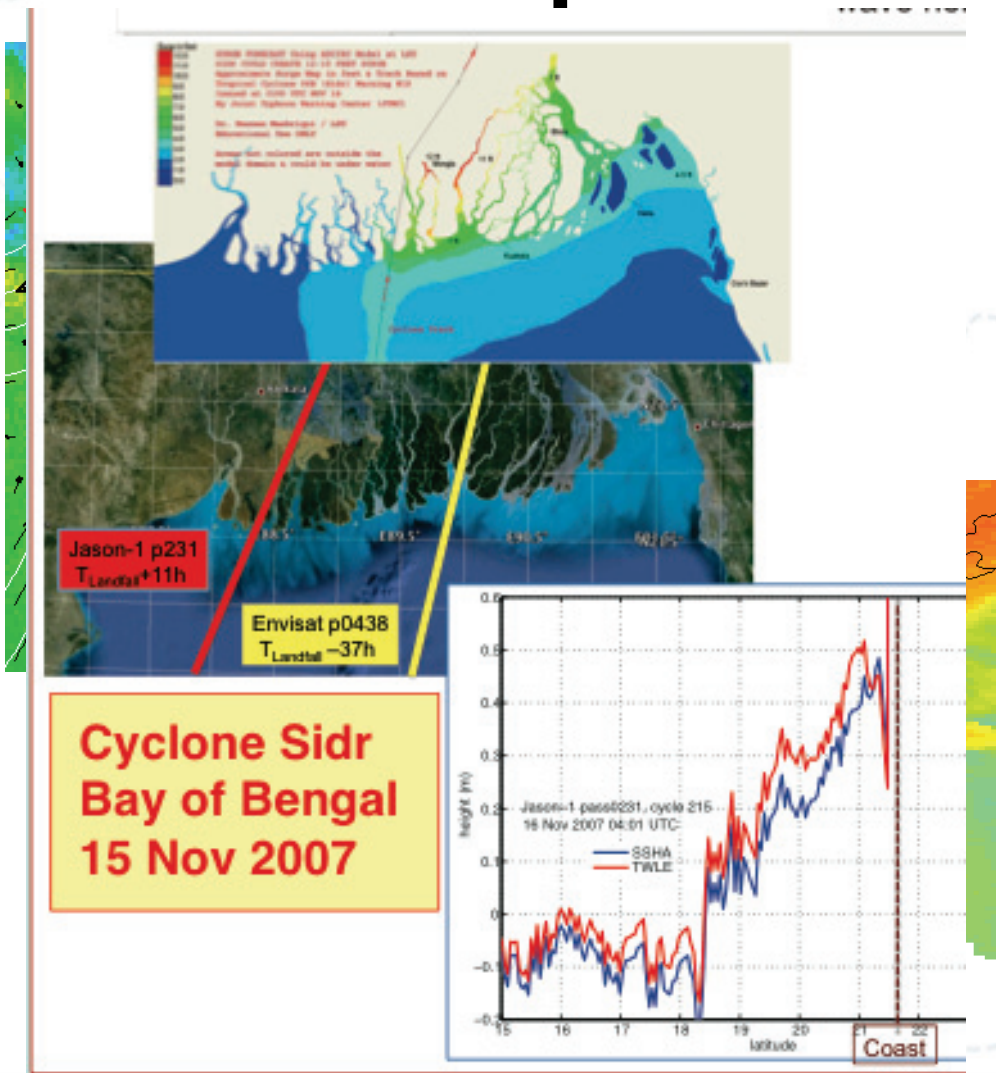
# 1. There are DATA out there!!!

- CTOH – many regions, multimission, also 20Hz in specific areas
- PISTACH – global Jason-2 coastal & hydrology product
  - now also L3 over specific tracks (Florida, **Agulhas**, MAB,...)
- COASTALT – few pilot Envisat tracks
- *C-2 SAR data are being produced (no release yet)*



Dufau et al

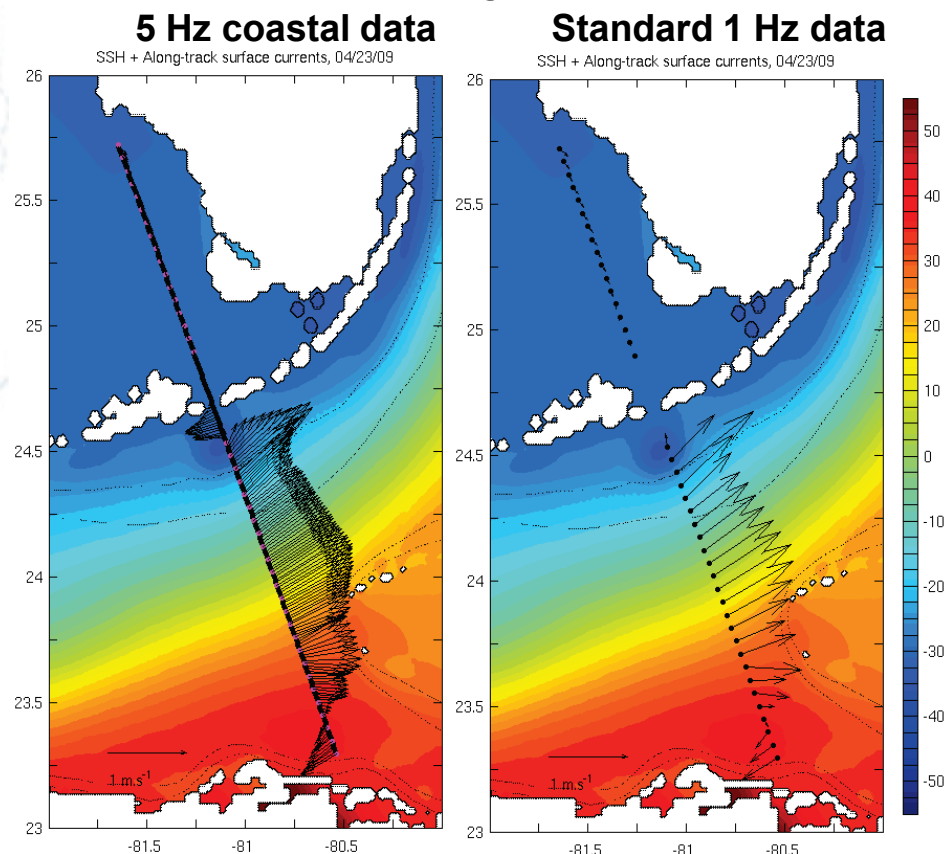
# 2. People are using them!



- Despite data are not perfect we now see interesting & diverse **applications:**
  - currents
  - lake level (synergies)
  - ice margins (synergies)
  - gravity
  - storm surges...
- Some apps demonstrated good data ~4Km from coast

# 3. Integration is the keyword!

- With models: how best to assimilate the new data?
- With other in situ observations
- **cal/val** issues remain crucial and must be supported

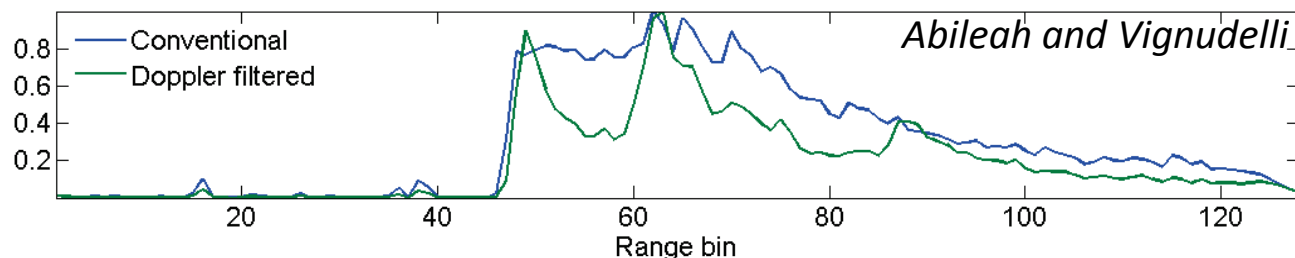
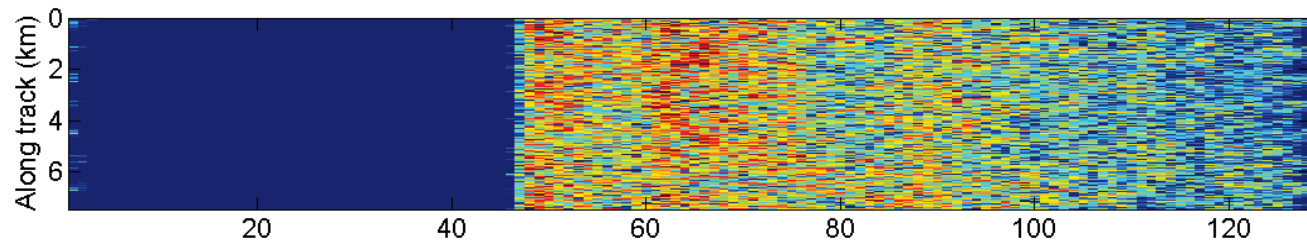
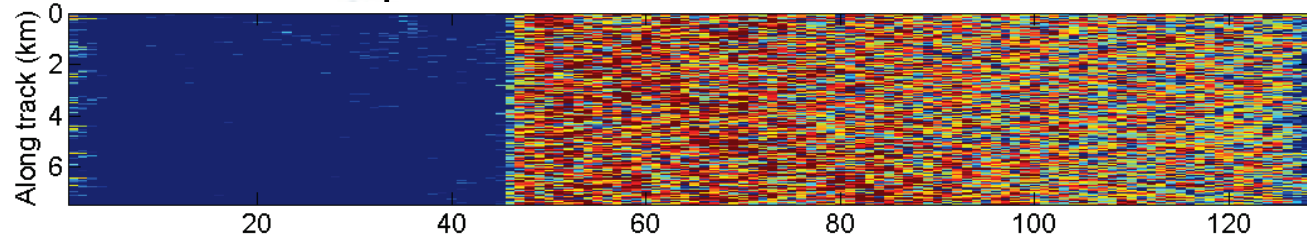


*FKeyS-HYCOM SSH w/ along-track 5 Hz surface currents (left) and 1 Hz currents (right)*

*Kourafalou/DeMey, COSS-TT*

# 4. R&D is needed even more than before!

- there has been a gear shift in analysis of waveforms
  - SAR opened a whole new set of problems
  - still no consensus on retracking; continuity issues
- Substantial improvements in corrections
  - wet tropospheric is a case in point



## 5. Future looks bright (but challenging!)

- SAR altimetry – already a revolution for the coastal zone (now we see it with Cryosat)
  - Sentinel-3 : first operational coastal altimetry mission?
- AltiKa very promising too
- 2-D altimetry.....
  
- **The techniques we develop in the coastal zone feed back into open ocean applications (non-Brown WFs, sigma0 blooms, slick, submesoscale, sharp fronts...)**

# Recommendations from the 6<sup>th</sup> Coastal Altimetry Workshop

*The Coastal Altimetry Community*

“The community of coastal altimetry scientists and users who convened in Riva del Garda for the 6<sup>th</sup> Coastal Altimetry Workshop on 20/21 September 2012 recommends that...”



# 1. coordinated efforts for products

“...coordinated effort should be put into generating and distributing a harmonized, well-documented multi-mission coastal altimetry product calibrated to common standards and tailored to end-users, to foster the uptake of those data for improved analysis and prediction of coastal ocean circulation. This effort should include a reprocessing of the existing ~20 year record from past missions, a portal for data access and information sharing.”

## 2. continued R&D

“...further R&D should be invested towards improving the techniques for processing, interpretation and cal/val of altimetry data in the coastal zone, including a full exploitation of the new opportunities offered by SAR altimetry and Ka-band altimetry. The in situ and modelling community need to be engaged in this process”

### 3. easy access to level 1 data

“...level 1 data should be made easily available as the foundation of further R&D and the basis for reprocessing since significant progress can only be made by going back to full bit rate data”

→ *Also endorsed by Instrument Processing splinter*

## 4. planning future missions

“...every effort should be made to maximize the sampling and information content of future altimetric missions, which is particularly important for coastal zone applications. To this purpose, the adoption of the interleaved mode for Jason-CS is strongly recommended as it will also benefit retrospectively previous SAR missions.”

## 5. and, finally, SAR for Sentinel-3!

- “... in order to improve the precision and resolution of the data for all ocean applications, the area of Sentinel-3 SAR altimeter acquisition over the ocean should be maximized.

→ *Also endorsed by Instrument Processing splinter*



**88 participants, 32 talks, 24 posters**

Community review of science and applications, lots of ideas and passionate discussion, but still very friendly and informal

# Next Workshop (CAW-7)

- Proposal: liaise with OSTST so we have all in same week
  - perhaps CAW Mon/Tue, OSTST Wed-Fri ??
- US East coast?
  - around Boston area, or NH?

# Keep in touch and send feedback

- [www.coastalt.eu/community](http://www.coastalt.eu/community)
- Mailing list COASTALT-SWT (250+ subscribers)
  - if you are not on this list yet, but would like to, tell me... [cipo@noc.ac.uk](mailto:cipo@noc.ac.uk)

***Thank you!***



