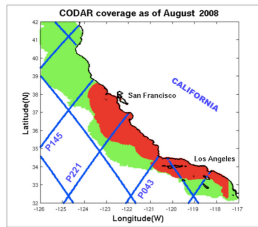


Finding sources of Sigma0 variation in satellite altimetry by comparison with HF radar, sea surface temperature and ocean color

Carolyn Roesler and William J. Emery
University of Colorado, Boulder
Comparison CODAR & J2 altimeter SLA

Cases that fit well
Cases that diverge

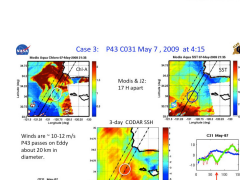
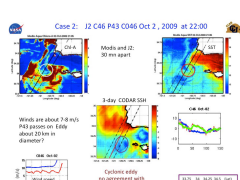
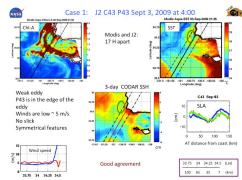
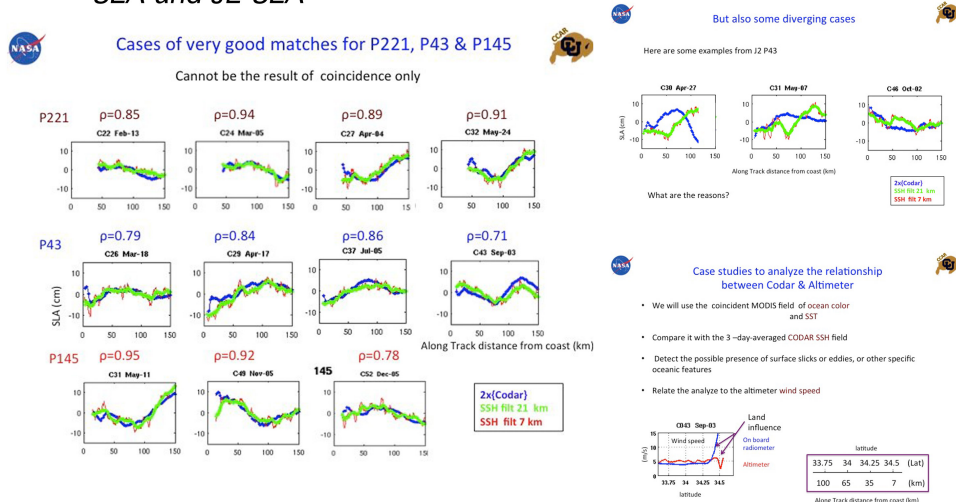
Explain the reasons why/ which one is more pertinent
By using coincident information of ocean color and SST
OSTST Sept. 2012, Venice, Italy



We have developed a method to extract the 2-km (or 6 km for further offshore) resolution SSH from the CODAR derived total surface currents

We use the 20-hz MLE4 range and edit the possible spurious data by removing specific blooming events and regions with high SWH. We then smooth the altimeter data over 21 km.

We then remove the mean of the time series and compare CODAR SLA and J2 SLA



Case 3: P43 C031 May 7, 2009 (cont.)

- The fact that OCE3 fits well, tends to prove that the mismatch is with the altimeter data. The ocean structure is not quite homogeneous and the waveforms differ slightly from the classical Brown model. Not enough so no flags are on.
- RED3 is similar to MLE4, so the problem is not in the tail end of the waveform.
- In this case OCE3 reduces the noise in the WF in an efficient way.

Conclusion

- We looked at cases when the altimeter and Codar SLA diverge significantly.
- Auxiliary information tend to be in favor of Codar.
- The WF may be corrupted by small scale ocean non-homogeneities, due to the presence of relatively small strong eddies in the coastal and continental shelf regions.
- Codar could help find some insights into the nature of the problem and clues on how to retrack these contaminated WF.

