

Interactive comment on “X-band COSMO-SkyMed wind field retrieval, with application to coastal circulation modeling” by A. Montuori et al.

Anonymous Referee #2

Received and published: 5 December 2012

General observations

This paper aims at exploring the benefits of forcing a coastal circulation model with the wind field produced from COSMO-SkyMed observations.

The expression is correct. The structure of the paper is clear and well balanced, which makes comprehension easy. The paper is complete; all the necessary technical details are provided.

The references are appropriate and complete.

My main concern is about the evaluation of the performance of the overall technique. The performance and limitations of the azimuth cut-off method applied to wind speed estimation as well as those of the Discrete Wavelet Transform Multiresolution Analysis

C1313

applied to wind direction estimation are well known and have already been discussed in previous papers. Nonetheless, according to the “new” contribution, which is the forcing of the coastal model, in my opinion, the results presented in this paper, obtained after one specific simulation are far not sufficient to conclude that “SAR data can definitely improve the modeling of the coastal marine circulation”. This statement would deserve deeper justification.

Specific comments and minor technical corrections

There are a few avoidable redundancies throughout the paper. For example, the advantages of the techniques employed for wind field retrieval (no need of a priori information and accurate calibration) are mentioned at least 3 times, almost with the same words.

p.3257, l.10. Sub-sequent -> subsequent

p.3258, l.23. “[...] filtering operated by the SAR along with the azimuth direction”

p.3259, l.20. “the latter are often present”. In my opinion, it would be interesting to precise how often do the rolls statistically appear in SAR images. As far as I understand, the method proposed strongly depends on the presence of ABL rolls, which are not always visible in ocean SAR images.

p.3260, l.15. “spatially co-located ASCAT scatterometer wind fields and ECMWF model data”

p.3263. In my opinion, it would be clearer to present the results on a Table.

p.3264, l.27. “see (De Ruggiero)”

Fig.2. In the legend of figure (f), “data2” has to be completed.

Interactive comment on Ocean Sci. Discuss., 9, 3251, 2012.

C1314