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Interactive comment on “Sensitivity study of wind forcing in a numerical model of mesoscale eddies in the lee of Hawaii islands” by M. Kersalé et al.

Anonymous Referee #3

Received and published: 26 March 2010

Review of “Sensitivity study of wind forcing in a numerical model of mesoscale eddies in the lee of Hawaii islands” by Kersalé et al.

The describes results of 10 year runs of the ROMS model for the Hawaiian region forced by climatically averaged COADS and QuikSCAT winds. Results reproduce main features of the known regional circulation and the occurrence of eddies of both signs in the downwind region of the islands. The major conclusion really is that the highest possible resolution wind forcing is required to reproduce the detailed realistic circulation. The study is interesting, but unfortunately repeats analysis similar to that of Calil et al. (2008), who execute a more detailed analysis of the same situation and include high resolution atmospheric model winds in the forcing. Consequently, there is little that is really new in this contribution. Moreover, although it does show the effect of

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differing wind forcings, it does not elucidate well the relative importance of wind and current eddy generation mechanisms. If it were to throw some light on that problem, it would have greater impact.

Generally, the manuscript style is imprecise and the document is marred by a relatively high number of grammatical errors. For example the third sentence of the introduction is essentially a repeat of the second. The references to Aristegui et al and Barton et al in the Introduction are used inappropriately since both papers refer to the Canary Islands situation and both refer to eddy generation by both current and wind, not just by current as implied in the present ms. The importance of wind effect on eddy generation in Hawaii was first broached by Patzert, who is referred to only at the end of the relevant paragraph.

For the wind comparison, a point relatively close to the Big Island is chosen. It would seem more suitable to choose one point in the area of largest discrepancy between COADS and QuikSCAT and one in the far field region. The Discussion refers to “detailed comparison “ between cold core eddies in model and observations, but in fact the comparison is quite superficial. The eddy and KE results are in line with those previously established, but no new findings are reported.

I have to conclude that the results are not original enough to warrant publication of this paper. It is basically a sound piece of work, but regrettably has been preempted by the work of Calil et al.

Interactive comment on Ocean Sci. Discuss., 7, 477, 2010.

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