

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 #1

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General comment I this study two wind forcing where used to force ROMS numerical model in order to prove that high resolution wind data lead to more realistic result for the eddies generated at the Hawaiian Archipelago. There are published studies on the dynamics of Hawaiian eddies using also ROMS (Calil et. al., 2008; Dong et. al., 2009) that have already addressed many of the issues discussed in this manuscript such as eddy generation mechanisms, importance of the wind forcing, eddy tracking/propagation and model validation with observations. In that sense this manuscript is basically a repetition of previously published work and do not add any new additional knowledge to the Hawaiian eddies dynamics. Thereby, on my opinion, this work do not merits to be published in the present form.

Specific comment One topic that has been not still covered with enough details is the

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relative importance of topography and wind forcing on Hawaiian eddies generation. This topic has been already numerically addressed by Jiménez et al. (2008) in the case of an isolated island and their main conclusions were validated through an observational study for the case of Gran Canaria Island generated eddies by Piedeleu et al., (2009). My recommendation is that this manuscript should be refocused toward this topic making a detailed study for the specific case of Hawaiian eddies as done by Jimenez et al (2008) for a more general case. Another important work covering partly this topic, using also ROMS as a dynamical tool for the study of island generated eddies, is the work by Pullen et al. (2008) on Philippines Islands generated eddies. The study of Chavanne et al.(2002), dealing with wind forcing of the ocean circulation at the Hawaiian islands, must be also reviewed.

Chavanne, C, P. Flament, R. Lumpkin, B. Dousset and A. Betamy (2002), Scatterometer observations of wind variations induced by oceanic islands. Implications for wind-driven ocean circulation. *Can. J. For. Res.*, 28, 466-474.

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Jiménez, B., P. Sangrà, and E. Mason (2008), A numerical study of the relative importance of wind and topographic forcing on oceanic eddies shedding by deep water islands, *Oce. Mod.*, 22, 146-157.

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Pullen, J., J. D. Doyle, P. May, C, Chavanne, P. Flament and R. A. Arnone (2008), Monsoon surges trigger oceanic eddy formation and propagation in the lee of the Philippine Islands. *Geophys. Res. Lett.*, 35, L07604,

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