

Interactive comment on “Impact of currents on surface fluxes computation and their feedback on coastal dynamics” by A. Olita et al.

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First of all, we would like to thank the referee #1 for his review of the manuscript and for raising some important question.

Here we would limit our reply just to his main criticism, about the usability of the COARE algorithm in Mediterranean.

We only partially agree with the referee opinion. In fact while it could be true that COARE algorithm is not "ideal" for the Mediterranean case, it is quite questionable, in our opinion, to define it "wrong" as it was very widely used (above all in its revised version) also in Mediterranean even in the very recent past (Janekovic et al. 2014, Falcieri et al. 2014, Juza et al. 2013 and others). The algorithm was even validated

C38

vs a Mediterranean dataset of observed fluxes obtaining very good results, at least comparable with other 11 widely used algorithms (Burke et al. 2003).

Of course, the suggestion of improving the baseline (i.e. use bulk formulas developed for the Mediterranean case) on which we apply the current velocity correction is for sure valid, but is a little far from the scope of the paper. The aim of the paper is not to find the optimal implementation for our specific area, but to assess the impact of a "simple" correction of the ROMS standard bulk formulation even at these coastal scales.

For the other points raised by the referee (direct use of atm fluxes, bathymetry smoothing, concerns on the domain itself etc) we would prefer to wait for the review of the second referee in order to provide a joint and coherent reply to both.

Kind Regards, AO

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C39