

Interactive comment on “Seasonal variability of phytoplankton fluorescence in relation to the Straits of Messina (Sicily) tidal upwelling” by F. Azzaro et al.

Anonymous Referee #3

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The study of Azzaro, Decembrini, Raffa, Crisafi discusses an interesting phenomenon, seasonal variability of temperature T, salinity of various kind of salts S, phytoplankton P etc., also in relation with the strong tides in the central part of this Strait. The language needs a strong help from a native English or a good professional.

The first pages describe the currents in this region and the general situation of T, S during the day. But these first pages are confusing, disorderted and give the feeling that the Authors quote too many articles but they were not really able to reach a clear synthesitic view of the currents in this Strait. I feel that it would have been better to say, in half page

a) Messina is an amphidromic point for the tides of the two main basins of the Mediterranean.

b) this gives variations of the air-sea surface of about 10-15 cm and velocities of about 3 m/s.

c) the interface between AMW and LIW is consequently not flat but reaches alternatively the sea bottom and the air-sea surface: this baroclinic phenomenon appears to be barotropic, but once the water is cold LIW and once warm AMW. The figures of Hopkinset al about this interface evolution are very clear! In addition, I have not seen any clear discussion of seasonal evolution. But seasonal variations of such effects would have been of remarkable interest.

Section 1.2 describes somehow the measurements with a confusing repetition of the previous pages. What is Azzaro et al 2001 method? Section 3 describes the (surface?) zig zag measurements in the moments of strong rise of LIW during spring tide periods.

Data and correlations between data finally look interesting. I found some realistic data, better discussed. I am however surprised because thermal and chlorophyl satellite data have not been used in this study, while such information is rich, easy and free. I also feel that the zig-zag data are totally measured in the surface layer (or I missed something?) and this doesn't add interest to this analysis. And I am not aware of the maturity of preceding similar analyses, please take into due account my cultural limits.

In synthesis the study of Azzaro et al. discussed an interesting data set, but I ask you a biologist supervision, I suggest to add satellite information, to discuss how the zig-zag data could be improved and how the correlations can be cleaned and interpreted.

The first part of this study should be strongly shortened and focused on the important facts only.

Interactive comment on Ocean Sci. Discuss., 4, 415, 2007.