

Interactive comment on “Wind forcing and fate of *Sardinella aurita* eggs and larvae in the Sicily Channel (Mediterranean Sea)” by M. Torri et al.

Anonymous Referee #1

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This manuscript describes the results of surveys of eggs and larvae south of Sicily in the summers of contrasted years 2010 and 2011. Differences in distribution, especially between Capo Passero and Malta, are attributed to differences in wind forcing resulting in a stronger offshore filament in 2010; the filament would advect larvae from the Cape to Malta. The attribution seems logical enough, and there is some back-up from Lagrangian modelling, although with only two cases one cannot be sure about the possible role of other factors not discussed here. The interest is rather limited, because the study is geographically localised and there is nothing particularly novel about the techniques used. It can have its place in the context of other papers in the region. However, it does need considerable improvement in the description of what was actually done,

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particularly in respect of the models used. I think the authors should also consider the difference between years in terms of the direct wind forcing (leading to upwelling and possibly a filament off Capo Passero) as well as the wind-stress curl.

There are many places where the English usage should be improved, but much of this could be through the final copy-editing. [Generic points are: “recruitment” not “recruiting”, omit “the” before 2010 and 2011.] Here detailed comments on English only include places where the intended meaning is unclear. Pages and line numbers refer to the on-line OSD version reviewed.

Detailed comments

Page 2098. Line 12. “use” not “hire”. Lines 17-18. Does “more favourable” refer to Capo Passero in 2011 or Malta in 2010? Line 19. Omit “want to”.

Page 2099. Line 9. “pelagic fish”? “pelagic” is an adjective and needs to be followed by a noun, e.g. “fish”. Line 13 should read “. . . sea, i.e. *E. encrasicolus* . . .”. Line 23. “of” or “on”? At present with “of” this means effect of fish catch on abundance and northward expansion. Use “on” if you mean effect of abundance on fish catch.

Page 2100. Line 1. “chlorophyll-enriched”. Line 4. “pelagic fish” as above? Line 7. Put “. . .” around “connect the dots”. Lines 8-9. Not “i.e.”; the central Mediterranean is not the same as the Sicily Channel. Either “. . . central Mediterranean Sea and specifically the Sicilian Channel. . .” or omit “central Mediterranean Sea (i.e.”. Lines 17-19. I don’t think the current is due to upwelling, especially if “This current often gives rise to the . . . cold filament.” I think the wind causes both the current and the upwelling.

Page 2101. Line 2. Any initial hypothesis should be stated in the introduction. If it only follows from the results, is it a hypothesis? Line 12. Insert “further” before “offshore”. Line 16. “hauled from within 5m of the bottom . . .”. Lines 16-17. “. . . at deep stations . . .”. Line 17. Omit “on”. Line 21. Not “at binocular”. Do you mean “under a microscope”?

Page 2102. Line 4. Better “. . . In particular, eggs were assigned a stage number”. Line

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5 end. “following”. Lines 9, 11. Move “were obtained” from end of sentence to after “(TL, mm)”. Line 11. Better “. . Then length classes at 1 mm intervals were”. Lines 25, 26. Surely the wind stress does not suddenly decrease at 11 m/s.

Page 2103. Section 2.3 is unclear and needs to say what was actually done. What is the main model? Its area (figures 3 and 4 show different extent)? Resolution? Open boundary conditions and forcing? Period(s) run? Line 13. “instances” seems the wrong word – is it referring to (i) and (ii)? Line 14. “scope” seems the wrong word – I cannot tell what it refers to. Lines 17-18. This implies that the total velocity is made up of such cells. Surely they are added to a larger-scale deterministic velocity (where from)?

Page 2104. Lines 3-6. Are these sentences describing previous work or results of the present study? Line 9. Better “. . was greater than in 2011 . .”. Line 11. “. . The abundances differed between . .”? Line 14. Better “Analysis of egg stages revealed different spatial distributions . .”. Line 21. “. . eggs were found . .” (“exclusively” is redundant; “only” already gives the meaning). Line 23. Omit “was”. Line 26. “length” not “dimensional” – say what you mean. Also page 2105 line 2, page 2108 line 21. Line 27. “9” not “8”?

Page 2105. Line 1. Omit “more”. Lines 2-3. “. . we recorded very few larvae.” (see figure 2, there is at least one). Line 6. “. . a smaller length range . .”. Line 8. Omit “coastal, upwelling induces” (as above). Line 13. “. . filament generated off Capo . .”. Section 3.2 The timings of the model results need to be treated carefully to be relevant to the cruise dates.

Page 2106. Line 2. Where do these Eulerian velocity fields come from – what model run exactly? Line 20. “. . in 2010, when the Mistral wind blew steadily for”.

Page 2107. Line 1. “along . . filament.” I do not understand this. Line 3. “. . we use a surface cold filament model”. Rest of section. How does the effect of wind stress curl compare with the effect of the wind-forced coastal current and coastal upwelling? The supplementary figure S4 seems to show rather strong offshore Ekman transport on a

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few days. Line 19. Add “,” after “model”.

Page 2109 line 1. Better “. . PV in 2010, relative to 2011, was . .”.

Page 2114. Table 1 caption refers to geostrophic velocity but this is not in the Table. Omit “even” before “Geosat”.

Figure 1 caption. 2nd line: “is indicated by contours ..”. 4th line: “(upper panels) and eggs (lower panels) . .”.

Figure 5c should show 2011.

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