

Interactive comment on “Influence of the summer deep-sea circulations on passive drifts among the submarine canyons in the northwestern Mediterranean Sea” by Morane Clavel-Henry et al.

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The author, on behalf of the co-authors, has read and thanks for the reviews and the suggestions from Xavier Durrieu de Madron (RC1). We examined all of them for inclusion in the reviewed version of the manuscript, even though some comments are still in discussion with the co-authors and no detailed among the responses.

Below, there are responses to distinct comments.

1-Headlines in Discussion will be added, in lines with the paragraph contents and the objectives of the paper.

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Discussion paper



2-Specific response: The author appreciates the given references regarding the exchange of particle matters, the hydrology and the nepheloid layer in a French canyon. It provides indeed information that can be compared with similar studies lead in Cap de Creus and Blanes canyons and provides additional supports of concerns with the objectives of the study.

For example: Lopez-Fernandez P, Calafat A, Sanchez-Vidal A, Canals M, Mar Flexas M, Cateura J, et al. Multiple drivers of particle fluxes in the Blanes submarine canyon and southern open slope: Results of a year round experiment. *Progress in Oceanography*. 2013;118:95-107

3-Discussion response: Based on the suggestions and the objectives of the manuscript, it would be interesting to represent the trajectories of particle released in the three canyons with a color guide according to the particle depth. This plot can be an illustration of the whole findings described in this manuscript.

We worked with a drift stimulation time of 31 days for complying with an estimated Pelagic Larval Duration (PLD) of the shrimp larvae, which consisted of our case studied species. Because unknown, this PLD was estimated based on a linear regression model described in the manuscript and the near-bottom water temperature, which is stable (around 13.2 °C) in our studied area. The study focused on the spatial variability in the trajectories induced by the circulation in the canyons. We recognized that exploring if longer PLD would induce significant changes in the trajectories is interesting and it introduces an analyze on the temporal dimension. We dealt with this idea in the context of another study (in preparation) implying the same species, the considered model (ROMS-Rutgers) and different objectives.

4-Figures were modified according to the suggestions of the RC1. They are enclosed with our response. Fig

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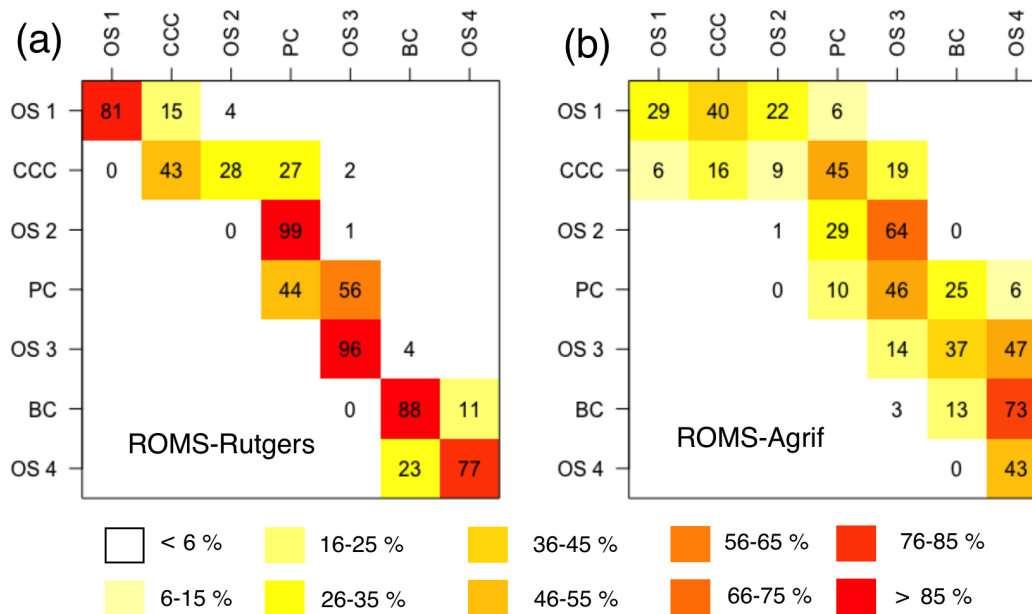


Fig. 1. Figure 6

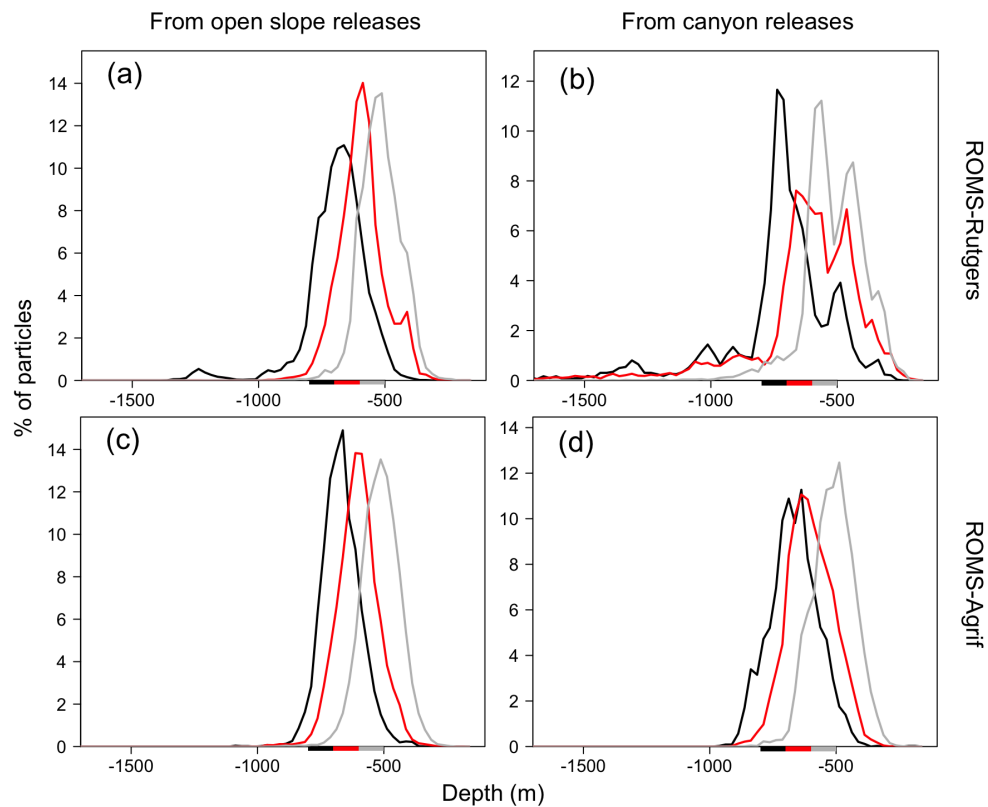


Fig. 2. Figure 7