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Discussions

# *Interactive comment on* "Relative dispersion in the South Western Mediterranean as derived from satellite-tracked surface drifting buoys" *by* Maher Bouzaiene et al.

**Anonymous Referee #2**

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In this manuscript, the authors analyse a set of surface drifters in the western Mediterranean for dispersion characteristics. They focus on time scales up to a few weeks and spatial scales up to a few tens of kilometers, and find agreement with previous studies in other parts of the ocean, as well as the Mediterranean itself.

While I am happy to see more of these types of studies into the surface dispersion being done, I found this one a rather disappointing read. The manuscript does not really add anything new to the vast corpus of publications on the topic of pair-wise surface drifter dispersion (as the authors also seem to acknowledge when they compare their results to many previous ones).



I think that this study is a missed opportunity to go much deeper and discover new things we didn't yet know about the ocean. Therefore, I'm afraid that unless the authors come back with something novel, I will have to recommend rejection of this manuscript to Ocean Science on the basis of lack of novelty.

Beyond that insurmountable point, I have the following major issues:

- There is no discussion of confidence levels and statistics. Are any of the fits statistically robust? What is the probability that we are not simply looking at noise?

- All drifters are lumped together, and this is a missed opportunity. Is there any variation in dispersion characteristics between drifter type, region within the Western Mediterranean, time period, season or anything else?

- Why did the authors decide to analyse the data in terms of dispersion versus time? Many other studies use Finite Scale Lyapunov Exponents. What would the results be in that framework?

- The motivation for this study in the introduction and conclusion sections can be greatly expanded. Why is this region important? Why would it be different or the same as other oceanic regions? Why would one even care about dispersion regimes?

Then, I also have some minor comments:

- The authors somehow failed to reference the big and seminal review paper by LaCasce (2008) on surface drifter dispersion in Progress of Oceanography

- Figure 4-8 could probably be combined in one figure, that shows the dispersion as a function of time for the entire time series. This would leave space for other, more profound analysis

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