

***Interactive comment on “Intrusion of coastal waters into the pelagic Eastern Mediterranean: in situ and satellite-based characterization” by S. Efrati et al.***

**Anonymous Referee #3**

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In this paper, the authors presented a combined analysis of satellite and in situ data to characterize a coastal water patch intrusion in the Eastern Mediterranean waters. The strategy of in situ sampling was determined on the basis of satellite (ocean colour, altimetry and sst) observations. Authors indicate that the patch is characterized by particular biogeochemical behaviour, which could be considered anomalous and separated from surrounding waters. They also suggest that this kind of mechanisms of intrusion could be relevant for the overall biogeochemical budget of the ultra-oligotrophic Levantine Basin. The paper is well written and clear. I have only minor comments:

1. Comparing figure 4b (calibrated fluorescence) and figure6 (satellite transects, in

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particular the b), the ranges are different. Calibrated fluo ranges between 0.01 and 0.09, whereas satellite Chl between 0.05 and 0.2. If I interpret well the figures, you have a factor of 2 between the two Chl estimations. I suggest commenting the satellite ocean colour limits in the Mediterranean in general, and in the region you analysed in particular. Although I'm persuaded that the results of the authors are robust (because obtained for the most in relative), you have to convince the readers about the quality of the satellite Chl estimations.

2. Please be more precise in the methods you used to identify the patch spatial characteristics (pag 17980, lines 10-15)

3. Following the author's interpretation of the data, a patch of coastal waters intruded for about 100km in the open ocean Levantine waters. This likely means that optical characteristics of the waters of the patch (at least in surface) are of case II (i.e. typical of coastal water). I suggest to verify additional ocean colour products (see for example Bignami et al. 2007, which could improve the interpretation of the results.

Bignami, F., R. Sciarra, S. Carniel, and R. Santoleri (2007), Variability of Adriatic Sea coastal turbid waters from SeaWiFS imagery, Journal of Geophysical Research-Oceans, - 112(C3)

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