

## ***Interactive comment on “Process studies at the air-sea interface after atmospheric deposition in the Mediterranean Sea: objectives and strategy of the PEACETIME oceanographic campaign (May–June 2017)” by Cécile Guieu et al.***

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As per the journal's main manuscript types, Research Articles (which this manuscript was designated), are to “report substantial and original scientific results within the journal scope.”

The manuscript details the impetuous and planning details for the PEACETIME oceanography campaign in the Mediterranean Sea during May-June 2017. My initial impression is this article was to be a sort of “introduction” paper to a special volume of

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manuscripts from this program. While I have seen, and been a part of, programs with such introduction papers, the manuscript in its present form introduces the project but does not have any main findings. Specifically, it needs more results, even if it just restates main points from the collection of papers in the special volume; furthermore, an introduction paper (in my opinion) provides broader context to the importance of these results. Only seven manuscripts in Table 2 are reported as being submitted (actually only four others are submitted because these seven include two publications: Gareil et al. 2019; Menna et al. 2019, and this manuscript), while there are over 20 articles listed as “in prep”; it appears too early for a synthesis paper.

Much of the prose is reminiscent of a project proposal which is justifying where/when/why a cruise will be conducted; and unlike a Research Article, I do not see any main conclusions. While it is clear that there was significant planning involved with this cruise to sample just the right conditions, this is a standard practice for PI teams to lead a cruise when it is not sampling some pre-determined spatial grid (CLIVAR, AMT Program, GEOTRACES, etc.). The authors are to be congratulated for successfully sampling the desired conditions, as it clearly took a lot of planning; and I am excited to see these results in the future. However, in my opinion, successfully sampling an event alone does not merit publication as a Research Article.

Below I make some more specific suggestions regarding the science and prose (e.g. numerous grammatical and spelling errors).

Line 22 (also 108), what does “state of the art regarding” refer to? Please correct wording. Line 33, please revise word choice for “valorization” Line 58-59, this is worded like iron is not a trace metal, perhaps revise “iron and other trace metals” Line 68, “metal” not “metals” Line 74, revise wording “also allowing quantifying the export below” Line 75, revise wording “P and N for marine biosphere” Line 76, “several days” requires more context. Several days from the initial part of a multi-day event? After a multi-day event? Line 93-98, this is a long sentence, please break. Line 138, 140, correct to “33-day” and “on-board”, respectively Line 149-152, please see general comment.

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Line 165, revise wording “dust transport associated to rain period” Line 175, PM10 has not been defined, a casual reader will not be familiar with this term Line 216, “station” should be plural Line 253, correct use of three periods “. . .” Line 261-266, this is just basic cruise planning Line 285, unlike prior sections, this one is not numbered Line 321, revise to “, on a regular basis,” or the sentence could be modified to not need the commas Line 332, correct the units currently “mn” Line 458, correct spelling of “reacher” Line 480, remove extra period between mg and m<sup>-2</sup> Line 487, correct the acronym (“MVP” not VMP) Line 528, please consider revising use of “kept lain” Line 547, meaning no biomass was accumulated but what about increase of biological rates (e.g. primary productivity), how were these affected? Line 548, please consider revising wording of “was displayed” Line 550, the increased intensity is an intriguing result. A simple mass balance is merited, e.g. could enough Fe be introduced from the dust lead to this much increase in the deep chlorophyll maximum? Given the spatial separation between surface Fe input and deep chlorophyll increases, I think this would be tenuous; therefore, I think the authors are internal wave idea (line 555-556) is more likely. Line 599-601, this manuscript does not provide any synopsis of these other studies (presumably because a vast majority are still “in prep”) and thus reads more like a pre-cruise planning report. Figure 1 – why does the scale jump to 1100 meters? Figure 4 – why is a “proposed” cruise track relevant? As stated above, most cruises not following a pre-determined section (e.g. GEOTRACES) will nearly always have to modify a cruise track.

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