



EGUsphere, referee comment RC1
<https://doi.org/10.5194/egusphere-2022-202-RC1>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on egusphere-2022-202

Anonymous Referee #1

Referee comment on "Surface circulation properties in the eastern Mediterranean emphasized using machine learning methods" by Georges Baaklini et al., EGUsphere,
<https://doi.org/10.5194/egusphere-2022-202-RC1>, 2022

Dear Authors,

Please fid below my review of your paper entitled "Surface circulation properties in the Eastern Mediterranean emphasized using machine learning methods". I am not especially an expert in machine learning methods, but the manuscript is well written and relatively easy to read. I did not detect any flaw and the science seems to me sound. Overall I enjoyed the study and I only have a few minor comments. Overall I recommend a minor revision. See below.

-- Main comment --

1. My main comment is that the sections of the paper could be re-aranged in a more traditonal way while keeping the same content.

For example, Section 3 - Results, is actually a "Results and Discussion" section since the results are discussed with it (and at the moment, there is not a real Discussion section)

2. Section 4 is a bit floating... I wonder if it is really needed (it is interesting, but personally I would remove since it is only based on a single deployment of 3 drifters).

3. There are also a lot of figures. They are all discussed and potentially interesting, but it is a lot...

-- Other Specific comments --

- Introduction and Figure 1: An improved larger map with the political boundaries is

needed. This will help the reader not familiar with the region.

- Paragraph starting L.35: This seems a key aspect and could be introduced better.
- L.35: "debatable" (is there any reference to this?)
- L. 50: 25-yr of altimetry: maybe cite "International Altimetry Team (2021), Altimetry for the future: Building on 25 years of progress. Advances in Space Research. doi: 10.1016/j.asr.2021.01.022."
- The acronym SOM is spelled out several times (L.53, 79, 97, 98, ...)
- L.53: The sentence starting by "It is use to" is badly contructed.
- L.69: replace "till" by "and", and remove semi-colon ";"
- L.86: Mention how the altimetry product was accessed (e.g. Copernicus? accessed date? doi? citation?)
- Figure 3: Should we see a spatial map here? Are the pixels organized as in Fig 2?
- L.134: Would be nice to have a better description here of the clusters. Later you say "high EKE" (clusters 1-2) or "high vorticity" (clusters 4-5) and this is useful. I would mention it here too.
- Section 2.4: I wonder if the study area should appear of the beginning of the method...
- L.136: wrong construction with the sentence.
- Figure 4, 6, etc.: I would choose a different color scheme for the clusters. The 2 blues and 2 reds are too similar (I printed the manuscript and you can't tell the difference). The colormap from Figure 11 would be best, for example....
- L.138: "guided by the isobath" -> say which one.
- L.160 and L.162: What you call "variation" is actually "standard deviation" and should be call this way.
- L.161: Replace "Depending" by "Based"
- Section 3: It is really Results and Discussion...
- L.204 (whole paragraph): Maybe discuss a little bit more how the changes in satellite and sensors may have impacted (e.g. any abrupt changes corresponding to satellite changes?). Maybe also a good place to put your current Section 4 if you decide to keep it...
- L.221: Not sure how to interpret the sentence starting with "The along-slope..."
- L.222: "C1 and C2" -> If I interpret correctly, it is mostly C2...
- L.223: Here a map with political boundaries would help too.
- L.230: "along its potential path" -> along or accross?
- L.254: You mean their distance to the "closest" isobath between 1000, 2000, or 3000m? (same comment for Fig 13 caption).
- L.280: Resonable to conclude that is could be underestimated while only comparing a single event with 3 drifters?