

The manuscript is improved from length and directness perspectives, and my previous comments have been addressed, but issues still remain. Added detail should be provided on the heave and spice decomposition and composite eddy structure calculations. Results are often confusingly worded with grammatical mistakes making interpretation more difficult. I do think the results are interesting, but they could still be presented in a more concise manner.

Main comments (referencing the track changes line numbers):

- Introduction - this section is improved, but additional synthesis of previous results is still needed. At present it reads as a list of past studies characterizing some aspects of eddies in the region of interest. What is missing from these studies? Collectively what do their results suggest as a next topic of research? Line 57-59 is good context, maybe more of this is needed at the end of the summary of previous results?
- If defining anomaly profiles as the difference between Argo and WOA, potential biases or offsets between the two products need to be assessed. L131 references “this bias”, but no bias has been quantified?
- The methodology section is improved (L149-160), but more detail is needed. The step by step procedure described could be improved by incorporating some spice and displacement units? It feels a bit too descriptive. In step three, these differences being referenced need to be more clearly defined. For a given neutral surface, Is IVD derived as the difference in pressure between an Argo and climatological profiles? It should be stated that heave is calculated in units of CT or SA ... as heave is more commonly defined as a vertical distance?
- I’m still a bit confused about composite construction. I understand the normalized distance from the eddy center, but how are amplitudes normalized? Are they? As there is a strong meridional gradient in mean CT/SA structure do we expect eddies to be radially symmetric?
- Significant grammatical issues remain (in some cases the original draft was better) - see line by line comments
- Additional synthesis/interpretation of heave and spice figures is needed.
- The conclusion section summarizes nicely a long list of results (but grammatical mistakes remain)

Line-by-line (referencing the track changes line numbers):

L33-35: I think it is still worth reconciling this statement with the findings of Abernathy and Haller 2018, namely that eddy trapping is responsible for only a small fraction of heat/salt/ momentum redistribution.

L64: replace “bottom” with “seafloor”

L75-76: this sentence belongs in the preceding paragraph

L83: easily tracked in what sense? By a specific instrument?

L90: should spice and heave be capitalized?

L106: bathymetric contour?

L116: “completed inside”

L119-120: replace first with shallowest and last with deepest

L125: state which MLD definition is used

L145-146: Δp_n definition does not make sense. It seems to be defined as a difference in pressure, but I assume displacement is in units of meters? Additional detail is needed.

L149: why are you performing this decomposition on climatology? I thought displacements were computed with respect to climatology?

L177: what is the geometric method?

L184: delete “the values of”

L188: “used to superimpose the atlas” I’m not sure what this means

L195: “eddy turbulent energy” if referencing EKE, it needs to be defined (with respect to what mean?)

L220: “each Argo profile”?

L221: “independent”

L272: what is an “argo sampled eddy trajectory”? Does this mean an altimeter identified eddy track for an eddy that an Argo float profiled?

L274: “sampled”

L280: “highest trajectory numbers”?

L304: missing space between R2 and which ... this occurs in many places and makes me think proofreading was not adequately carried out.

L306: the region numbers appear incorrect? They do not match those described in figure 1 caption

L313: “it could hypothesize” this is incorrect grammar

L324: “spans to depths” grammatical error

L344: in general you do not have to state “results are presented in figure X”. rather the result should stated and the figure referenced.

L393: “eddy’s” implies there is a single eddy being referenced?

L403-404: “demonstrate directions” what does this mean? Do you mean to say something about direction of propagation as implying an origin site?

L405: “a deepening of eddies’ core is observed from east to west (), being the anticyclones core deeper in R3” this makes no sense and is a bit frustrating to try and make sense of these sections contain many grammatical mistakes.

L452: “west of MAR, anticyclones present the same sign throughout the water column for anticyclones while the cyclones change signal” again this is difficult to make sense of. The same sign of what? What does change signal mean?

L474: “mean direction of the sampled eddies”? Do you mean their direction of translation?

(L475: “cyclones have mostly westward directions” ...)

L601-621: This appears a summary of past results with few physical/dynamical links to the results presented here? I suggest a bit more synthesis between new and old results.