

*Author's reply to Reviewer 2:*

Authors response to comments by to the manuscript " Sargassum accumulation and transport by mesoscale eddies " by Sosa-Gutierrez et al. (rsosa@mercator-ocean.fr, [julien.jouanno@ird.fr](mailto:julien.jouanno@ird.fr)). We would like to thank Clément Vic for the detailed and helpful comments to improve the manuscript. Below, we use black text for comments and green text for our response.

L. 32: remove "the" before "ecosystems" (it should be plural)

Corrected

L. 53: can be transporters of Sargassum → can transport Sargassum

Corrected

L. 55: can carry out Sargassum transport → can transport Sargassum

Corrected

Section 1 ends with a list of eddy detection methods. I think it would be good to (1) close this paragraph in mentioning what method you opted for and why, and (2) have a short paragraph afterward to announce the plan of the article.

We add the following sentence : *"In this work, we opted for an Eulerian detection method due to its relative ease of implementation. This paper is organized as follows. Section 2 describes the data and methods used. The main characteristics of Sargassum cover in cyclonic and anticyclonic eddies are presented in the results section, section 3. Finally, in section 4, we present the summary and discussion of our results."*

L. 68: remove "chain"

Corrected

L. 137: no dot after Figure.

Corrected

L. 143: low → small

Corrected

L. 169: correspond → corresponds

Corrected

L. 181: it is worth noting that (no comma)

Corrected

L. 192: remove “the” before “AEs”

Corrected

L. 206 (and at other locations): move references to the end of the sentence (if possible, preserving their meaning)

The text has been modified as follows : *“Using ADT satellite imagery, the distribution of Sargassum detections from 2011 to 2023 was analyzed, by applying an eddy detection and tracking methodology (Chaigneau et al., 2009; Pegliasco et al., 2015).”*

L. 232: “this sample size is probably too small for the average to converge.” Could you back up this statement? maybe in subsampling other regions?

As we are not fully convinced of this sentence, we removed this sentence and the one before : *“The central Atlantic region only had 1739 AE detected, against >4000 eddies for all other diagnostics (see Fig 5). In this region where mesoscale is weak, this sample size is probably too small for the average to converge.”*

We think the paragraph is much more clear. Thanks

L. 241: I find “overall growth” unclear. Are you referring to the total biomass ?

In addition to contrasted surface radial velocity properties between AEs and CEs, this could contribute to the contrasted time evolution of the distribution highlighted in Figure 7 and could modulate overall growth of total *Sargassum* biomass at the basin scale.