

Ocean Sci. Discuss., author comment AC2
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Reply on RC2

Vadim Sivkov and Ekaterina Bubnova

Author comment on "Distribution of suspended particulate matter at the equatorial transect in the Atlantic Ocean" by Vadim Sivkov and Ekaterina Bubnova, Ocean Sci. Discuss., <https://doi.org/10.5194/os-2021-45-AC2>, 2021

Dear Referee!

First of all, we would like to thank you for your time and work with our paper.

Secondly, we would like to answer all your comments.

General remark

(1) I am not a native English speaker myself, but I can feel that some parts of the text might benefit from re-wording/re-writing some sentences, which sometimes reads as direct translation from Russian (see for example lines 213-214, etc.).

(2) We understand that our text is far from perfect in a matter of English. Gladly for us, Professor Ian Nicholas McCave agreed on helping us in this regard, so it will get better.

Fig. 2:

(1) A) It would be useful to add the approximate depth to the 1/2/3 notations, i.e. (numbers are just for illustration – please use the real ones): 1-surface currents (0-100m), 2-subsurface currents (100-300m), 3-deep surface currents (300-500m) A) and B): looks like isobaths are not at every 500m as stated in the caption. I see 1000, 2000, 3000, 4000, 4500, 5000. Please correct either capture or plots.

(2) We have changed both the caption of Figure 2 and Figure 2A itself.

(3)

Figure 2. Generalized circulation schematics within the study area: surface and subsurface layers (A) and intermediate, deep, and bottom layers (B), where 1 — surface currents (from 0 up to 100 m), 2 — subsurface currents (from 100 up to 500 m), 3 — joint surface

and subsurface currents (from 0 up to 500 m), 4 — the Deep Western Boundary Current (DWBC) cores, 5 — schematic DWBC recirculation, 6— AABW. The references and current abbreviations are explained in the text. White circles — Ioffe-2000 transect stations.

Lines 95-100:

(1) The sentence "The main existence conditions for GD existence is a cyclonic circulation composed of the eastward NECC and NEUC along with the westward NEC (Stramma and Schott, 1999)." could use some editing to eliminate a repetition of word "existence".

(2) Corrected

(3) The main existence conditions for GD are a cyclonic circulation composed of the eastward NECC and NEUC along with the westward NEC (Stramma and Schott, 1999).

Fig. 3:

(1) Search radii? Show the mixed layer depth?

(2) We are afraid that showing the thin (100 m and less according to Sarafanov et al. (2007) upper mixed layer will not be illustrative, taking into account the fact that the overall depth in Figure 3 is 5000 m. Some information regarding gridding was added to the Figure 3 caption.

(3) The interpolation was done in the Ocean Data View software (Schlitzer, 2018) and the DIVA gridding (Barth et al., 2010) with 25 permille X-scale length and 65 permille Y-scale length.

Additional references

Barth, A., Alvera-Azcárate, A., Troupin, C., Ouberdous, M., & Beckers, J. M. (2010). A web interface for gridding arbitrarily distributed in situ data based on Data-Interpolating Variational Analysis (DIVA). *Advances in Geosciences*, 28, 29-37.

Lines 179-180

(1) Use station # for better location reference?

(2) We have corrected the paper.

(3) The SMP concentrations within the NBC are relatively low (stations AI-910–AI-912).

Line 197:

(1) "So the local SPM maximum in the GD area within the Ioffe-2000 transect correlate with this data" - show the correlation.

(2) The mathematical term "correlation" was a wrong choice for this sentence because

there was no mathematical comparison.

(3) The local SPM maximum below the GD area within the Ioffe-2000 transect agrees with this data.

Please also note the supplement to this comment:

<https://os.copernicus.org/preprints/os-2021-45/os-2021-45-AC2-supplement.pdf>