

Review of the revised manuscript “Inputs and processes affecting the distribution of particulate Fe in the North Atlantic along the GEOVIDE section” by Gourain, A. and co-authors

First of all the manuscript has improved massively compared to the last version. The first half of the manuscript is mostly in good shape, but the second part lacks mainly a clear structure of paragraphs which makes it really hard to follow the stream of thoughts. So, especially the conclusion needs to be revisited and strengthened. There is a lot of text, but little information. I am also missing the highlighting of the biogenic fraction, there is hardly anything discussed. However, the data is interpreted and concluded correctly, but changes to the text that need to be done to improve the second part of the paper require between major and intermediate revision. I hope my comments below help to strengthen the text.

With best regards,

Christian Schlosser

Abstract

Line 35: replace “basins” by “basin”

Line 36ff: Important sounds strange! I would use “high” instead. Please also include “horizontal”, otherwise advection takes also place vertically. I would also include “advection of PFe containing water masses “ not PFe travels the water mass does this job.

Line 40ff: This sentence is a bit lost, and out of context.

Method

Line 89: “briefly described in section 2.1” I cannot find a brief description of the complex circulation.

Line 102; Remove “and the filters processed...” This is out of context here!

Line 104: What kind of filters you are talking about, these are not filters used for the Swinnex filtration right?

Line 133: Replace “filter” by “Filters”

Line 137: You also removed the filter, right?

Results

Line 180ff: I have not found any biological settings in this chapter... It is also very long, detailed, and to some extent hard to follow. It would be good to start with a sentence what you are doing and then characterize water masses basin after basin separated by different paragraphs. That would make it easier to follow.

Line 222: This sentence is really hard to understand, please rephrase. Please also shorten the title!

Line 229: I have not even watched Figure 3 and sup. Table 1 and you introduce Figure 9b and sup. Table 2.

Line 253: Include "in THE surface"

Line 281: You refer here to 5 factors, figure 6 represents 4 factors. What is right, I presume the figure?

Line 286: change to "and remineralisation of biogenic material."

Line 300: Replace "material" by "fraction".

Line 312: Replace "with consideration" by "carefully".

Line 320ff: with %PFe you mean the lithogenic fraction..., be careful and try to apply always the same abbreviation.

Line 320-325: If keeping these sentence, please create a new paragraph. Please also rewrite sentences, they are really hard to understand and follow! Link the %PFe data to Salinity, that at least gives you some certainty that there is a change in water mass.

Line 335-340: Please rephrase the sentences, sorry hard to read! Especially the last sentence is formulated very vague!

Line 344ff: The following 3 paragraphs should have been included already in section 4.2. You are discussing your results and not discussing them. The structure of the following paragraphs needs to be changed as well, first you come with your hypothesis and then you explain why this is the case. Right now it is all turned around. Why are you coming up with the ratio Mn/Al now. It comes out of the blue. I would introduce this parameter earlier when you come up with %PFe for instance.

Line 379: This paragraph is not explaining the differences of the Fe/Al ratio observed. What is the River doing?

Line 383: What do you mean with important!

Line 396ff: This sentence needs to come first.

Line 399ff: Your paragraphs are really long. Anyway, you do not discuss why there are this two maxima. The last sentence "Therefore..." is the most important finding and should come first. And then switching between PFe and PMn, it is hard to follow your stream of thoughts.

Line 423ff: What is the message of the paragraph. Buried in the text “Transfer of DFe to PFe. That needs to come in the beginning of the paragraph.

Line 479ff: Good this is the most important paragraph, for the first time you put the finding into context and discuss them. It is very hard to go through the last 3 pages without a strong structured line of thoughts!

Line 494ff: The presented literature data needs to be put in context to your findings towards the end of the following paragraph.

Line 526: Include the SEM picture in the sup material.

Line 535ff: First: Barraqueta, Second: What do you mean with the following sentence. It is hard to follow. What has the concentration to do with the composition?

Conclusion

This is not a conclusion, it is just a second abstract.

Line 550: Maybe start the Sentence with: The

Line 555: The river is not responsible or the PFe at 2500 m depth.

Figure 2 citation: Line 908: Replace “Stations” by “Station”

Figure 3: Please increase the font size of the ODV graphs, it is almost impossible to read the depth and longitude on a print out.

Figure 4 caption: Please include that the PFe scale changes within graphs.