

Dear Editor,

Please find below the list of corrections made in the revised version according to editor's comments (in italic)

figure 1: no legend for bathymetry . add a color bar or labels on isobath. not clear what the 3 black arrows do represent : not sure they are useful. remove or clarify

In Figure 1, we have inserted a color bar referring to bathymetry scale. The black arrows were suppressed.
what are the colored circles associated with stations. if the color code refers to cluster of stations (Fig. 5) mention it clearly.

We have clarified in figure 2 caption the meaning of the colored circles as follow:” Colored circles refer to the following clusters of stations showing similar characteristics: Control station R-2, North of the Polar Front station F-L, Plateau station A3, and PF meander stations E (see text for details).”

it seems that there are double labeling of stations R-2 F-L why?

The labels (R-2 and F-L) indicated in bold fonts refers to cluster of stations, and the labels in normal fonts refer to stations. We choose to keep the double labelling for clarity

figure 2 : replace R with R-2, used superscript for 238 (238U)

Figure 2 was modified as proposed.

figure 4 : not clear what is linear interpolation. this not explain neither in the legend, nor in the main text (line 397). add a sentence to describe what it means.

Methodology to estimate C:Th ratio at fixed depths was clarified in the caption of Figure 4 as follow: “Linear interpolation was obtained using a straight line fit between the upper and the lower data point relative to the target depth (i.e. 100 m, 150 m, and 200 m depth).”

legend of appendix 1 : superscript for "-1" "234" and "238".

The legend of Appendix 1 and 2 was modified

*udapte the references of the paper of the special issue looking at :
http://www.biogeosciences-discuss.net/special_issue133.html*

The references related to KEOPS2 special issue were updated