

**Authors:**

**We thank again the associate editor for his last review of the paper.  
All technical corrections have been done.**

**F. Carlotti**

**Carlotti et al., Revision 1 Associate Editor Review**

I would like to express gratitude to all the co-authors on the major efforts they have made to respond to the reviews, including adding method details, data from the smaller (120um) net hauls, statistical analysis of the spatial-temporal variations, and careful comparisons with other works especially for the stable isotope variations and the seasonal trophic changes.

The paper is very much improved and now provides a clear, useful, and deeply insightful assessment of zooplankton population variations in the region and over the season. Importantly, it represents the main effort to extend the scope of the overall KEOPS2 study above that of biogeochemistry into ecological trophodynamics.

For all these reasons, the paper is now acceptable for publication in Biogeosciences, as soon as the list of technical corrections below is addressed:

**Throughout paper (including figure captions):**

1. capitalize Polar Front at all instances
2. use F-L as the name of this station (not F as used in Figures 4, 5 and in some places in text)
3. refer to the net operations as net hauls (not net tows), since the nets were moved vertically upward while the ship was on station.

**Line number    change to text**

PAGE 3

- 5        The aim of this study was
- 13       responded to the spring bloom
- 14       Taxonomic compositions
- 17       in the mixed layer.
- 27       during a Lagrangian time series survey
- 28-29    , but growth was still    (*remove individual*)

29 In contrast,

31 due to growth under *(remove individual)*

32 January-February 2005

PAGE 4

14 sediments in the oceanic upper layer in the area east of Kerguelen

19 productivity in this eastern area fuels

PAGE 5

12-13 Remove "Despite....", and simply write : It is also worth noting....

PAGE 6

13 winter (not pre-winter)

14 northeastern (not Northeastern)

29 replace long-term by intensive to accord with line 9 station description above

31 night (stations

32 hauls (not tows)

PAGE 7

6 However we used the 120 um net samples for the isotope analysis (as described in the following paragraph)

7-16 This new paragraph on the sample preparations for the isotope analyses is not clear. It needs to be rewritten. Here is an attempt:

To prepare samples for isotope analysis, size fractions were obtained as follows. Samples from the second 330um net haul at each station were passed sequentially through five sieves arranged in a column (2000, 1000, 500, 200, and 80 µm meshes). The three largest sizes were then collected, and for the largest size (2000 um) large organisms such as salps and euphausiids were separated into additional containers. To provide more material for the two smallest sizes (200, 80 µm), these materials were retained on the sieves and the contents of the 120um net haul were passed through the entire set of 5 sieves (with the overlying 2000, 1000, and 500 um sieves serving to block larger organisms and aggregates, but without those materials being collected) All samples were placed in small containers and immediately deep-frozen (-80 C).

PAGE 8

6-7 biomass (W, in units of mg dry weight, DW)

14 net haul

22 meaning of 1 to 10/1000 diluted is not clear – rewrite

33 changes almost corresponds to approximately corresponds

35 classified into small

PAGE 9

6 pre-weighed

PAGE 10

1 and 6 change MHV data not shown to data not shown, since MHV is a co-author

14 T-Group 1

PAGE 11

5 circulation pattern

9 recirculation system

13 and those stations close to the coast

15 change non-significant chlorophyll to slight chlorophyll (or something else, since non-significant is unclear)

19-20 The bloom started in earnest in early November

23 downstream in the Polar Front boom

27 Trull et al. (not Trulls)

34-35 change allowing chlorophyll to with accompanying chlorophyll

PAGE 12

2 from 100 to 50 m

6, 11, 13 make sure  $m^{-3}$  is a superscript

7 TEW 3

26  $R^2$  should be a superscript

PAGE 13

6 However, these temporal changes were not significant

30 shallow (not narrow)

34 remove from net tows

PAGE 18

19 early spring bloom and (not early spring bloom in and)

PAGE 19

2 up to the time of E3 ...and then slightly increased at E4

PAGE 20

12 and A3-2

PAGE 21

3 replace "might be questionable" by " must be considered"

PAGE 23

19 Insert a paragraph break before "The mean increase.." (or elsewhere in this very long paragraph).

Table 4.

The dates in the top line should be expressed in a standard notation such as dd/mm, not in Roman numerals!

Figure 2. caption states it is biomass, but figure appears to be abundance

Figure 3. caption states it is abundance but it appears to be biomass

Figure 2. The should be expressed in a standard notation such as dd/mm.

Figures 4 and 5. The station name in the legend should be F-L, not F

Figure 4 panel c title should be Biomass not Biomasse

Figure 7B, 2D-stress should be 0.12 not 0,12