

Interactive comment on “Quantifying the structure of the mesopelagic microbial loop from observed depth profiles of bacteria and protozoa” by T. Tanaka et al.

T. Tanaka et al.

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We agree with Referee #1 that our description “heterotrophic nanoflagellates are the important remineralizers (page 414, lines 12-13; page 415, line 8)” is incorrect. We have improved as “heterotrophic nanoflagellates transfer little of bacterial production to higher trophic levels.” We have also improved “...with HNF as the important remineralizers (page 419, lines 22-23)” as “with HNF as the potentially important remineralizers of bacterial production” (see also below). A sentence “This may challenge... (page 419, lines 23-25)” has been deleted.

In our model, a parameter of predator’s yield on prey is used for HNF and ciliates, respectively. This means that the model does not assume HNF to use efficiently all the bacterial production. The predator’s yield can be described as “Ingested organic carbon - Loss of organic carbon to respiration - Egested organic carbon” divided by “Ingested organic carbon”. Although we fully acknowledge that a significant egestion by HNF contributes to the organic carbon (OC) pool, the egestion of organic carbon by

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HNF seems to be less significant in the OC-limited condition. However, to our knowledge, no data on respiration and egestion of HNF are available for the mesopelagic layer. Thus, we would like to leave these estimations for future study. We have added this discussion in the section of Results and discussion.

Minor comments

Page 417, line 23 "...between the three...": We have corrected as suggested.

Page 421, line 7, "Deep-Sea? Missing I or II": In 1987, there was only "Deep-Sea Research".

We thank Referee #1 for helpful suggestions.

Interactive comment on Biogeosciences Discussions, 1, 413, 2004.

BGD

1, S218–S219, 2004

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