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Interactive comment on "Estimates of micro-, nano-, and picoplankton contributions to particle export in the northeast Pacific" *by* B. L. Mackinson et al.

Anonymous Referee #2

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GENERAL COMMENTS

Topic of this paper 'contributions of nano- and picoplankton to export flux' is an interesting and important topic. Quantitative study on this issue is still limited in marine ecosystems, although this is not the first paper to deal with this issue. Thus, present paper is worth being published in Biogeosciences.

However, I have some points which need to be addressed before publishing on BG. Especially, authors need to make more suitable and careful discussion on 1) accuracy of the conclusion from this study, 2) possible underestimation of contribution of nano-picoplankton to export flux, and 3) conversion factors of Chlorophyll a to POC for micro-

nano- picoplankton in this study area.

SPECIFIC COMMENTS

INTRODUCTION

It is better if authors could clearly point out their study purpose.

P. 12634 L.9-12: Auhtors can not say like that since authors do not show any data on chlorophyll a-carbon ratio for micro-, nano- and picoplankton.

DISCUSSION

P.12648 L27-29: 'zooplankton grazing and cell degradation' may also contribute to POC loss. Then, this sentence is not suitable to explain the low pigment and high POC in the trap compared to pumping.

CONCLUSIONS

P.12649 L23-25: Do authors want to say their methodology is not reliable to quantify contribution of micro- nano- picoplankton to the export flux, and finally authors have wrong data set? If this is the case, this paper is totally useless.

P. 12650 L2-16: Authors should show and discuss conversion factors of Chlorophyll a to POC for micro- nano- picoplankton in this study area. Contribution of each phytoplankton category to 'POC' export can be changed due to the factors.

Interactive comment on Biogeosciences Discuss., 11, 12631, 2014.