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Discussions

# Interactive comment on "Short-term changes of the mesozooplankton community and copepod gut pigment in the Chukchi Sea in autumn" *by* K. Matsuno et al.

V. Dvoretsky (Referee)

vdvoretskiy@mmbi.info

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Referee Comments Title: Short-term changes of the mesozooplankton community and copepod gut pigment in the Chukchi Sea in autumn Authors: K. Matsuno1, A. Yamaguchi2, S. Nishino3, J. Inoue1, and T. Kikuchi3 Biogeosciences Discuss., 12, 1–26, 2015 www.biogeosciences-discuss.net/12/1/2015/ doi:10.5194/bgd-12-1-2015

General comments. In this paper the authors analyzed the zooplankton community structures during short time period in the Chukchi Sea in autumn in order to estimate how strong wind events could affect the zooplankton community. This manuscript provides an interesting and valuable dataset on the zooplankton assemblage and its tem-

poral pattern in this less-studied Arctic region. Moreover, the authors attempted to temporal changes in the mesozooplankton communities and climatic conditions. The authors have also calculated the gut pigment of C. glacialis C5 and the grazing impact by C. glacialis that may be very useful to assess carbon fluxes in the pelagic ecosystem of Chukchi Sea. I feel that this paper will be of interest for a wide range of the marine planktonologists working in Polar Regions. However, some comparisons of the authors' results with previous studies for adjacent waters or other Arctic regions would be useful to strengthen and improve the manuscript. The paper should be published in Biogeosciences after minor revisions.

1. Does the paper address relevant scientific questions within the scope of BG? Yes 2. Does the paper present novel concepts, ideas, tools, or data? Yes, new data 3. Are substantial conclusions reached? Yea, all conclusions are adequate and based on the original data. 4. Are the scientific methods and assumptions valid and clearly outlined? Yes, the work and technical procedures were made on the basis of the modern methodic. 5. Are the results sufficient to support the interpretations and conclusions? Yes. 6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? Yes. 7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Yes. 8. Does the title clearly reflect the contents of the paper? Yes. 9. Does the abstract provide a concise and complete summary? Yes. 10. Is the overall presentation well structured and clear? Yes. 11. Is the language fluent and precise? Yes. 12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? Yes. 13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? 14. Are the number and quality of references appropriate? Yes. 15. Is the amount and quality of supplementary material appropriate? N/A.

Specific comments. Abstract L 11. 'ranged 23 610–56 809 ind.m–2' replace by 'ranged from 23 610 to 56 809 ind.m–2' Results L 21 'ranged 23 610–56 809 ind.m–2' replace

by 'ranged from 23 610 to 56 809 ind.m–2'

Methods

In general, methods are good described. Therefore I suggest to mention that NORPAC nets (mouth diameter 45 cm, mesh size 335 $\mu$m) are rather coarse to quantitatively catch smaller zooplankton forms (e.g. Pseudocalanus spp. C1-4, Cyclopoida, the youngest stages of other copepods) and there may be some underestimations of these zooplankton taxa.

Results

I recommend calculating the Shannon diversity index and the Pielou evenness of the zooplankton communities. These indices may give interesting information on the short-term dynamics of zooplankton structure in the Chukchi Sea. Estimated zooplankton biodiversity should be described in the Results in detail, and therefore compared (if possible) with previous studies in the Discussion section.

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