

Interactive comment on “Size distribution of particles and zooplankton across the shelf-basin system in Southeast Beaufort Sea: combined results from an Underwater Vision Profiler and vertical net tows” by A. Forest et al.

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(Authors) We gratefully thank referee #1 for her/his supportive comments with respect to our manuscript results, discussion and conclusion. We agree that measurements of zooplankton-particle interaction are critical to understand processes controlling vertical fluxes and biological pump functioning. We amended the manuscript as suggested by the referee wherever it was possible:

Page 13, Line 19-22: Clarify the sentence to: “In the basin, zooplankton abundance

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and biovolume of copepods and protozoans were generally more similar compared that over the slope, while other groups were much lower (Figs. 5, 6).”

(Authors) We agree that this sentence sounds particularly awkward. We changed it for: “The abundance and biovolume of copepods were similar in the basin and slope areas, while those of other zooplankton groups were generally lower in the basin than anywhere else (Fig. 5, 6).”

Page 16, Line 18: Erase “the”: “: : profiles whose signal showed visible rise above ~10 m.”.

(Authors) Yes, the word “the” was erased.

Page 19, Line 4-6: Was this observed for both day and night profiles, or did you see a more pronounced anomaly during night as a result of intensified grazing?

(Authors) We agree that this sentence was not clear. The mean negative anomaly was the result from the compilation of all size-spectra measured at 55 m depth over the shelf, thus comprising profiles from various times over a daily cycle. Unfortunately, the sampling strategy did not allow us to test the variability of particle size-spectra with changing light intensity. At 70°N in July-August, differentiating night vs. day profiles can be a tricky issue, especially when the cloud cover was as important as in late summer 2009. Hence, we prefer to not over-discuss on the influence of solar irradiance on grazing intensity.

Page 23, Line 9-11: If you are in an area with large copepod species.

(Authors) We agree. We added: “in regions dominated by large copepod species”, at the end of this sentence.

Fig 3. Check if the full size range was 0.1 to 12 mm – looks like maximum size was 11 mm.

(Authors) Please note that the x-axis of this figure is logarithmic, so the last tick is

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actually 20 mm (and not 11 mm). Hence, it is correct to describe the dataset in the context of a full size-range of 0.1-12 mm in the present figure.

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