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Interactive comment on "Diversity of Arctic Pelagic Prokaryotes with an emphasis on photoheterotrophic bacteria: a review" *by* D. Boeuf et al.

D. Boeuf et al.

jeanthon@sb-roscoff.fr

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Dear referee, thank you for your useful comments. Please find below our responses to them:

1. Although the title mentions prokaryotes the manuscript focuses on bacteria with very little (one paragraph) on Archaea, missing are several recent Archaea papers and I think more are coming out. Since the word prokaryote is not accepted by many microbiologists, and the coverage is mostly on Bacteria, I suggest removing Archaea references and changing prokaryotes in the the title to Bacteria.

We removed the word "prokaryotes" from the title and replaced it by Bacteria. All the

sentences related to Archaea were also removed from the text.

2. For Bacteria at least one key reference with relevant data is missing : the multi-year pyrosequencing study by (Comeau et al., 2011)

We now referred to the paper Comeau et al. (2011) in the sentence below:

“Although a greater abundance of Gammaproteobacteria was reported by Kirchman et al. (2010), Alphaproteobacteria typically dominate Arctic surface waters, followed by Gammaproteobacteria and by Bacteriodetes (see references in Fig. 1 and Comeau et al., 2011)”.

3. The Comeau et al paper also pointed out how Alphaproterobacteria seem to have increased in the sub surface chlorophyll maximum layer since 2007. Which adds weight to the conclusion on p 2436 line 25.

We carefully read the paper of Comeau et al. (2011). Except the alphaproteobacterial group SAR11 whose sequence numbers seem to increase since 2007, we didn’t find other indications in the paper (figures, text, supplementary files) that point out that Alphaproteobacteria increased within this time period. Therefore we decide to let the conclusion section unchanged.

Best regards.

Christian Jeanthon and co-authors

Interactive comment on Biogeosciences Discuss., 11, 2419, 2014.