

## ***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.**

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Dear Carlos, thank you for your useful comments and for your interest in our work. Please find below our responses to your questions:

1. The sentence in lines 13-16 is not supported by any evidence or reference, and the issue is not taken up in the rest of the paper. I find the statement interesting and I was hoping there would be some discussion.

We agree with you. In the last chapter of the paper entitled “Potential impact of global change”, we discuss about the possible modification in abundance of the main photoheterotrophic groups that we identified in the Arctic Ocean rather than their ecological

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role. We modified the initial sentence “We can suspect that this role could be of greater importance in the Arctic Ocean where environmental changes triggered by climate change could favor the photoheterotrophic lifestyle” by “Modifications of light and carbon availability triggered by climate change may favor the photoheterotrophic lifestyle in the Arctic Ocean.”

2. In line 25, page 2424 reference is made to Fig 1, but the rarefaction analysis is not shown in this figure.

The initial sentence was: “Most recently, massively parallel tag sequencing techniques have improved our knowledge of the prokaryotic diversity in the Arctic Ocean, despite rarefaction analyses still suggested undersampling (Fig. 1).”

We acknowledge that this sentence led to confusion. To avoid misunderstanding, reference made to Fig. 1 has been moved in the sentence as shown below:

“Most recently, massively parallel tag sequencing techniques have improved our knowledge of the prokaryotic diversity in the Arctic Ocean (Fig. 1), despite rarefaction analyses still suggested undersampling.”

3. Finally, I find it surprising that the paper by Galand et al. (2009) in PNAS is not cited. I think it represented an extremely interesting contribution to the knowledge of the diversity of Arctic microbes and deserves being mentioned.

The following sentence that includes the reference of the paper by Galand et al. (2009) has been added.

“Interestingly, the taxonomic composition of the rare phylotypes was similar to that of the most abundant ones (Galand et al., 2009).”

Best regards. Christian and co-authors

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