Dear Associate Editor

We are grateful to the anonymous reviewer for his useful comments and also appreciate Associate editor for his patient work during the revise process of our paper.

We carefully revised the paper according to the reviewer's comments. We also re-polished the language of this paper and hope it can get much more readability for the readers. All the revisions were marked in the revised edition. The clear edition was also attached in the submission files.

The introduction sets up the motivation for the study well; however, there are a couple of sections in the manuscript that need appropriate use of the English language. Line 23: The sentence would read better if "etc. factors" were deleted. The first paragraph (Lines 36-41) in the Introduction needs to be edited for a clear and concise message. Line 38: What is meant by "subject"? Is subtract a better word? I have listed a few other corrections below.

Response: the language has been edited by a native English speaker. Some minor mistakes were revised according to the reviewer's comments.

Line 90: Are all the standard methods the same? It would be helpful to state that although there might be variability in methods results are comparable.

Response: 'standard methods' means that 'the C and N were analyzed by a C/N elemental analyzer'. The instrument model of C/N elemental analyzer and detailed pretreatment of sample were not completely consistent with each other. We revised the 'standard methods' to 'similar methods' and avoid misleading the readers.

Is the linear function excluding the intercept necessary?

Response: do you mean the 'linear regressions in northern and southern hemisphere (7.06 and 5.97) ' in line 163? These slopes of the linear regressions include the intercepts. The linear function excluding the intercept was used to compare the linear function with intercepts and power function.

Why do the authors think that terrestrial impacts are weak from all distances form shore? Quick dilution? (Line 205)

Response: The impact of land is very significant in the northern hemisphere within 50 km from shore, but not significant (weak) in the southern hemisphere. The POC and PON is much higher (21.90 ± 11.01 μm/L and 3.19 ± 1.46 μm/L) close to the land than that (11.65 ± 3.58 μm/L and 1.67 ± 0.44 μm/L) off the land in the northern hemisphere. The weak terrestrial impact in the southern hemisphere could be caused by low land area and coastline. Many sampling sites far from the shore in the southern hemisphere also could reduce the terrestrial impact during the analyses process.

The higher DOC concentration is not obvious by comparing the two figures. For a clearer comparison, please provide a supplemental table with POC and DOC averages for groups

Response: We added the ratio of DOC/POC for each water type (1.48 ± 0.75 for Coastal water, 7.57 ± 6.83 for river, 1.18 ± 0.77 for lakes and 4.02 ± 2.13 for ocean) in the context.

line

Other comments

Line 65: Delete first “and” and place comma after “Nitrogen.”

Response: this sentence was revised in line 65 'Nitrogen, light limitation and phytoplankton can only explain approximately 20% of .....'

Line 66: Add “and after organic matter.

Response: We added the 'and' after 'organic matter ', 'the temperature, composition of organic matter and dynamic characteristics of water will .....' in line

Line 77-78: Delete “is.” Also, write complement and perfection in past tense (complemented and perfected).

Response: this sentence was revised to 'the elemental stoichiometry research of C/N in inland waters still need to be complemented and perfected'

Line 108: Delete POC and PON and refer to them as samples.

Response: POC and PON were deleted and this sentence was revised to 'The data in each latitudinal range include all ranges of temperature, time and depth for samples.'

Line 120: Delete “and so on” and replace with “etc.”

Response: ' and so on ' was replaced by ' etc.' and the sentence was revised to ' These observational data were processed as lake groups, such as Great Lakes Group, Lacustrine Central Group, Alaskan Lakes etc. (Table S7).' in line 119.

Line 232: Replace “was” with “were” Also is location a better word than position?

Response: This sentence was revised to ' The lakes investigated in this study were sorted by the latitude according to the geographical position.' in line 241

Line 233: Replace “that in” with “the”

Response: 'that in' was replaced by 'the' in line 242

Line 274: Replace “small” with “smaller”

Response: small was replaced by smaller, and this sentence was revised to 'However, the variation of POC/PON (variable coefficient, 0.47) in river waters is much smaller than POC ' in line 285

Line 283: Did authors mean to say “closer” instead of “closing”?

Response: 'closing' was replaced by 'closer' in line 294 in 'bg-2017-68-manuscript-version5'.

Line 399: Delete “the”

Response: it was deleted and the sentence was revised to ' The correlation between POC and DOC is weak for individual water types, but is strong for whole data of lake, ' in line 408

Line 400: There is not a Fig. 9C. It seems like you are referring to 10C.

Response: Figure 9C only appeared one time in line 317 'POC/PON = 11.938*(land/coastline)$^{-0.078}$ (R^2=0.41) (Figure 9C)' in 'bg-2017-68-manuscript-version5'. We can't find the 'Fig. 9C' in line 400.

Is any misunderstanding?

Table S2 –S6. Please include the three mathematical functions: linear (with and without intercepts) and power functions in the table captions.

Response: We added the mathematical functions in the table captions, 'Table S2 Relationship between PON and POC for each latitudinal range. Three mathematical functions $POC=A_0\times PON+C_0$, $POC=A_1\times PON$ and $POC=A_2\times PON^{B2}$ were used to fit the relationship between PON and POC. The parameters and determined coefficients of each function are listed in the table. The R^2 with * marked is the best regression function for the POC and PON.' in supporting information.

Figures 2 and 3. Include A, B, C in the captions.

Response: We added the specific position of charts A, B, C, D in the figures 2 and 3 (in figures 2 and 3 of the revision edition).

Figure 10 C: Regression line would be clearer if it was darker.

Response: the regression line was replaced by black line in figure 10 (in figure 10 of the revision edition).