

## ***Interactive comment on “Ubiquitous production of branched glycerol dialkyl glycerol tetraethers (brGDGTs) in global marine environments: a new source indicator for brGDGTs” by Wenjie Xiao et al.***

**Wenjie Xiao et al.**

yunpingxu@pku.edu.cn

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First, we thank Dr. Ding He for commenting our manuscript. His comment is generally positive and acknowledges our work's merit. Meanwhile he provides several suggestions that we found they are useful to improve our manuscript. Here, I address them point by point.

Comment 1) I didn't see the updated (corrected) version of manuscript after the authors' response to Anonymous Referee #1 so I am still referring to the original manuscript that I downloaded from [http://www.biogeosciences-discuss.net/bg-2016-](http://www.biogeosciences-discuss.net/bg-2016-235/bg-2016-235.Pdf)

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235/bg-2016-235.Pdf. Response: Yes, we did not upload the revised manuscript according to the anonymous referee 1. Since we have received the comment from the 2nd reviewer, we uploaded a completely revised manuscript according to the reviewer 1 and Ding's comments (please see the supplementary pdf file). All changes were highlighted in the resubmission.

Comment 2: Line 170, when you say significantly is it  $P < 0.05$  or  $0.01$ . Please make this clear. Response: Good comment. In the revised manuscript, we rewrote the sentence as “Squared Pearson correlation coefficients ( $R^2$ ) were reported and a significance level is  $p < 0.05$ .”

Comment 3: Line 230,  $220 \text{ kg/m}^3$  (use superscript for 3) Line 238-241, is there any additional evidence to support the different terrestrial organic matter input from your previous work? Such as n-alkane based proxy or triterpenoids etc. It would be great if you can find additional evidence to further support your claim. Line 241-242, it will also be great if you can find additional evidence of land erosion. I know there is a few suit of biomarkers related to land erosion such as some hopanoid series. If you don't have this data available, this could be part of the future work. Response: we made change according to reviewer's suggestion. We actually analyzed various terrestrial biomarkers such as long chain n-alkanes and C<sub>29</sub> sterols, both of which showed more terrestrial OM input in nearshore core than that from central Bohai Sea. However, due to page limitation, we do not present those data. In stead, we added a sentence as “These GDGTs' results, consistent with other terrestrial biomarkers such as C<sub>29</sub> and C<sub>31</sub> n-alkanes and C<sub>29</sub> sterol (data not showed here), strongly suggest that the IIIa/IIa ratio is a sensitive indicator for assessing source of brGDGTs in the Bohai Sea.”

Comment 4: Line 271, when I wrote “ $P < 0.05$ ”, I prefer to use italic script for “P” in order to differentiate the abbreviation of Phosphor Response: we accepted this suggestion and made change in the revised manuscript.

Comment 5: Line 279, should be “little” instead of “litter” Line 280, “water salinity up

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to 41", 41 PSU or ppt, I suggest make this clear. Response: we made correction for these spelling errors in the revised manuscript. We also added "PSU" after "41".

Comment 6: Line 285, you are using 2.65~1, but sometimes you also use 0.4-0.9 (line 269). Please be consistent Line 322, should be written as "IIa/IIa" instead of "IIa/II" Response: we changed "2.65~1" into "2.65-1" to make consistent throughout the manuscript. We added "a" after "II" in line 322.

Comment 7: Please check your references because I did see a few typos and non-consistent format Lines 387, 391, 460, 529, et not Et Line 421, delete "-93" Line 441, "Peng, P.A." not "Peng, P.a." Line 457, delete "-90" Line 467, "and" not "&" Line 513, add " 17" after "Communications" Line 568, delete "-90" Line 681, add a space after "Sparkes et al." Response: we updated the reference formats in order to make them consistent throughout the manuscript. We uploaded the revised manuscript as supplement.pdf. All changes were highlighted.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/bg-2016-235/bg-2016-235-AC2-supplement.pdf>

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