

Interactive comment on “The non-conservative distribution pattern of organic matter in Rajang, a tropical river with peatland in its estuary” by Zhuoyi Zhu et al.

Zhuo Yi Zhu

zyzhu@sklec.ecnu.edu.cn

Received and published: 3 December 2019

Figure 1: We revised figure 1 (both a and b) accordingly this time.

Figure 2: We revised figure 2a-c accordingly this time (symbols larger, clearer). About the “come and go” dots in fig. 2, this is because a few samples were missing. This includes the POC and TSM samples at station S16 (conductivity = ~ 64 uS/cm), at station S4 (salinity = 4.8), station S25 (salinity = 11.7) and at station S29 (salinity = 4.3). We would mention this sample missing status in the materials and methods sections in the revised manuscript. About the suggestion for average all the fresh samples and show a mean value (instead of previous showing detailed conductivity in fig 2), we think

C1

it makes sense and hence figure 2 are revised accordingly (namely only one point now stands for fresh endmember with stdev).

Figure 4 and 5: Yes the dashed line is the conservative mixing line and it will be added into the captions for fig.4 and fig. 5. For the linear mixing line in fig. 4 and fig.5, we think editor's suggestion for freshwater endmember is right and hence we revised the original fig. 4 and fig.5 accordingly. About the marine endmember, we think it is better to choose all the samples with salinity > 30 and take the average values of these marine sites as the marine endmember. Then a simple linear line connects both fresh and marine endmember should be the conservative mixing line. We attached the revised fig.4 and 5 in the follow and it will be revised in the final manuscript accordingly. Finally, we are happy to add some additional data from a few samples (which were just available from colleagues recently) to figure 4 and 5. So now the total data dots in revised figure 4 and 5 are slightly more than previous submitted figure 4 and 5. But due to similar sampling missing reason as figure 2, the particulate and dissolved dots do not exactly match to each other. But overall we think this flaw does not interfere the overall data pattern. The figure caption for fig.4 and fig. 5 are also revised and updated with more detail and explanation.

About the text mis-spellings and poor grammatical constructions, these sentences (lines 163, 214, 223, 224,206, 246, 254/5, 284, 299, 313/4.) will be revised the spelling/grammar problems in the revised manuscript. Thank you.

Following are the revised figures 1, 2, 4 and 5, as well as its figure captions. â&A

Figure 1. Study area and sampling stations. a) Location of Sarawak, Malaysia; and b) the Rajang with its estuary/river mouth background shown. Samples upstream of Sibul showed 0 salinity while downstream of Sibul showed salinity > 0 . Hence here from Sibul to Kapit is regarded as the fresh water section, and downstream of Sibul is regarded as the estuarine section. â&A

Figure 2. Distribution pattern of (a)TSM, (b) DOC and (c) POC along with conductiv-

C2

ity/salinity in the Rajang. The location of salinity = 0 is at Sibü (Fig. 1b). $\hat{\Delta}$

Figure 4. GABA% distribution pattern from fresh water to estuary in the Rajang: a) dissolved and b) particulate. The dashed line indicates the linear mixing line, with the fresh and marine endmember calculated as the means of all fresh samples ($S = 0$) and all offshore samples with salinity >30 , respectively. The calculated fresh and marine endmembers are also shown in both plots (as brown triangle and purple diamond) and note that these two dots are not from real field samples. The error bar indicates the standard deviation of both endmembers, respectively. $\hat{\Delta}$

Figure 5. Same as figure 4, but for D/L-Glx.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2019-157>, 2019.

C3

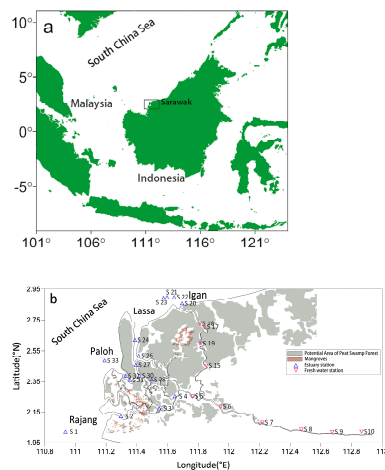


Figure 1. Study area and sampling stations. a) Location of Sarawak, Malaysia; and b) the Rajang with its estuary/river mouth background shown. Samples upstream of Sibü showed 0 salinity while downstream of Sibü showed salinity >0 . Hence here from Sibü to Kapit is regarded as the fresh water section, and downstream of Sibü is regarded as the estuarine section.

Fig. 1. figure 1-revised

C4

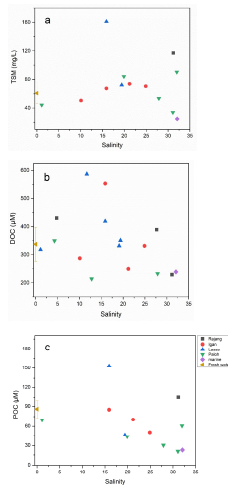


Figure 2. Distribution pattern of (a)TSM, (b) DOC and (c) POC along with conductivity/salinity in the Rajang. The location of salinity = 0 is at Sibn (Fig. 1b).

Fig. 2. figure 2-revised

C5

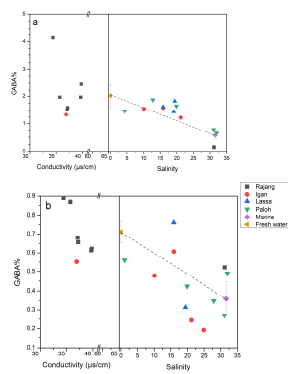


Figure 4. GABA% distribution pattern from fresh water to estuary in the Rajang: a) dissolved and b) particulate. The dashed line indicates the linear mixing line, with the fresh and marine endmember calculated as the means of all fresh samples ($S = 0$) and all offshore samples with salinity >30 , respectively. The calculated fresh and marine endmembers are also shown in both plots (as brown triangle and purple diamond) and note that these two dots are not from real field samples. The error bar indicates the standard deviation of both endmembers, respectively.

Fig. 3. figure 4-revised

C6

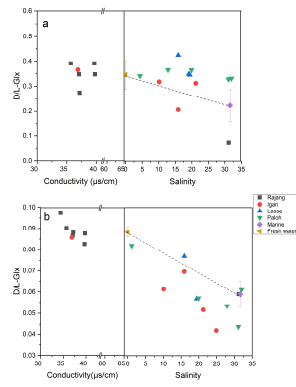


Figure 5. Same as figure 4, but for DL-Glx.

Fig. 4. figure 5-revised