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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.

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Thank you for your interest in the manuscript. Here is the reply to your questions. 1. If the variation of D/L Glx ratios was related to DON? When you discussed the relationship between D/L Glx and salinity, did you only consider the carbon in Glx? First of all, we checked the D/L Glx and DON. Statistically, D/L Glx was not related to DON in the brackish estuary part at all (p=0.31), nor in the river part (fresh water only; p =-0.428). About the second question, amino acids are usually chiral (excluding a few like glycine) compounds (i.e., with D and L forms). Though abiotic racemization produces D form of amino acid from its corresponding L form, but in contemporary

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aquatic systems, the key source for D form of amino acid is microbe and their activity (early diagenesis of OM). For example, bacteria produce and utilize certain D form amino acids to construct their cell membrane and hence some D-amino acids are key compounds that being found in peptidoglycan (Schleifer and Kandler, 1972). Also, when microbes utilized OM (they are usually heterotrophic), the D form amino acids usually accumulated (and hence D/L ratio increased). This is not only because of bacteria presence, but also largely due to the detritus of bacteria. As a total result, the D/L ratio is one of the proxies that can indicate the early diagenesis statues of OM (Davis et al., 2009) with higher D/L ratio usually means advanced degradation status of OM relative to lower D/L ratios within a given system. In the current manuscript, when we discuss the relation between D/L and salinity, we are trying to indicates the degradation status of OM along with salinity. We hope this answer is what you want.

2. Why did you draw a dotted line in Figure 5a? I initially thought there was some linear relationship but finally found it was not. Sorry for the misleading line. We meant to show the theoretical and conservative mixing trend along with salinity in this figure.

3. In Figure 1b, S18, S17, S19, and S15 looked like in the downstream of Sibu, why did you mark them as freshwater? Yes these stations are located down stream of Sibu, but when we were there doing the sampling and observation, indeed we observed salinity = 0 for all these stations. These stations showed a slightly higher conductivity (ranged between 36.9 to 124.4 μS/cm) when compared with Sibu station (for S14, its conductivity = 36.8 μS/cm), but when converted to salinity, it is still 0. In order to distinguish these zero-salinity station, we prepare figure 2-5 with x-axis including both conductivity and salinity unit.

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