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Interactive comment on "Nitrous oxide and methane in two tropical estuaries in a peat-dominated region of North-western Borneo" *by* D. Müller et al.

Anonymous Referee #1

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This paper describes CH4 and N2O distributions in two tropical estuaries. Current literature for estuarine CH4 and N2O concentrations is still limited, and this type of study is significant for our scientific understanding and relevant to BG. The paper is well written and reads easily. However, there are several issues that need to be addressed prior to publication.

1) The dataset of CH4 and N2O concentrations does not cover the region of low salinity (0-5), where high CH4 and N2O might be expected. Furthermore, no sample was taken at the river-end member. Hence it is hard to take a full picture of trace gas variation in the whole estuary system.

2) Page 5, line 13: Does the DO sensor calibrated with Winkler titration method?

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3) Page 6, line 25: I think the authors should give a little more detail about the k600 they used. For example, were they measured in situ or calculated by widely used wind-speed related relationships in the literature?

4) Table 3 showed that dissolved CH4 in the Lupar estuary was low and undersaturated (2nM and 88%). What's possible reasons for this?

5) Table 4 didn't show k600 for dry season, and the authors should explain what k600 was used for the calculation for dry season. k600 for Saribas tributary and Lupar estuary are almost twice of that for Saribas. Do the authors have any idea of the reason?

6) Figure 1: Scales should be added and the South China Sea should be located on the map.

7) Figure 2: N2O vs salinity, it was shown that there are great N2O peaks during wet seasons between the areas with salinity of 12-15, suggesting a significant N2O source. The authors should discuss this in the text.

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