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Biogeosciences Discussions

Interactive comment on "Biogeochemical factors affecting mercury methylation rate in two contaminated floodplain soils" *by* T. Frohne et al.

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Many thanks to the anonymous referee for the comments. We feel obligated to clarify several things.

First point: The present study does not aimed on field observations. As clearly indicate in the manuscript, our aim was to assess the impact of EH, pH, DOC, SO42-, Fe, and Cl- on the mobility and methylation of Hg in two floodplain soils under acidic to neutral pH conditions in general. Thereby we have followed a mechanistic approach to study the Hg-methylation process itself in general. However, we have also done several field measurements which are not included in this manuscript. These results show that the concentrations measured are in the same order of magnitude.

Second point: it is right that Table 2 shows that pH ranged from 4.12 to 7.17. However, the same Table also shows that the mean pH is 5.45 and the median pH is 5.21.This demonstrate clearly that the dominating pH during the experiment is around 5.3. Nevertheless, we can easily provide an additional graph as supplemental material showing the pH- EH relationship. This graph also shows that the dominating pH during the experiment is around 5.3. In conclusion, we are convinced that the best approach for this experiment is normalizing to pH 5.

Third point: Methyl mercury production vs EH over time is already given in the current manuscript (Figure 5).

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