

Interactive comment on “Effects of sterilization techniques on chemodenitrification and N₂O production in tropical peat soil microcosms” by Steffen Buessecker et al.

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Dear reviewer

Thanks so much for the kind words and appreciation for what is aimed to be contributed here. Positive feedback is always key and the comments offered by your assessment reflect the effort we put on this contribution.

below find the point by point answer to some specific points raised that require some addressing.

L 60: explain that Cu is required for nitrous oxide reductase. | We revised the inclusion

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on the note of Cu in this section of the MS and clarify that its concentrations are unlikely to abiotically promote N₂O reduction reaction. Although we acknowledge that Cu is required for nitrous oxide reductase we deemed that the mentioning of it did not change the point we were describing and decided not to include to avoid confusion indicating the need of Cu in a biotic process when describing abiotic processes. Now L 60-63.

L 73: Equation 4 is really more of a Figure, no? | That is correct, since we equated the number of elemental atoms albeit in different structures, we chose the “reaction scheme” term as the most appropriate one to describe this item. we changed the name to Reaction Scheme 1 now.

L155: Explain what a methanizer is. | We included an explanation in now L159: “For CO₂ measurements, a methanizer (which reduces CO₂ to the detectable CH₄ via a Ni catalyst at 355°C) was run in line before the FID.

It may be pertinent to mention that decomposition of nitrous acid (HNO₂) could be occurring at the especially low pH conditions of the HgCl₂ addition. Might be useful to consider whether you think this could be contributing to any of the dynamics observed in this treatment, where pH was 3.6. See Park and Lee, 1988 (J. Phys. Chem. v92. p6294). | Thank you, we now made aware of that potential contribution in L 370-371.

L380: . . . since no enzymes. . . | Corrected.

L392: . . . accompanied by ICP-OES. . . | Corrected.

Please also note the supplement to this comment:

<https://www.biogeosciences-discuss.net/bg-2019-282/bg-2019-282-AC2-supplement.pdf>

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2019-282>, 2019.

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