

## ***Interactive comment on “Regulation of N<sub>2</sub>O emissions from acid organic soil drained for agriculture: Effects of land use and season” by Arezoo Taghizadeh-Toosi et al.***

### **Anonymous Referee #2**

Received and published: 18 May 2018

#### General Comments:

This is a manuscript by Taghizadeh-Toosi and colleagues looking at N<sub>2</sub>O emissions, and driving factors, from drained histosols. This paper has some potential and interesting concepts within it. It could be of interest to readers of Biogeosciences. However, it has some major flaws. I'm not quite sure what the authors objectives of the paper are. They “searched for relationships” in N<sub>2</sub>O emissions, but why did they use two different fields? They hypothesized that N<sub>2</sub>O would be produced in the capillary fringe, but then they didn't show any data to confirm or deny this hypothesis. Where were the measurements in the capillary fringe and how did they confirm this? Not to mention

C1

there is a focus on season, but they only measured N<sub>2</sub>O for two seasons and just a couple measurements in each season. This is not enough to claim a “season effect”. The manuscript itself is loosely held together, figures are difficult to interpret, and the writing is poor (See specific comments).

#### Specific Comments:

L10. The Abstract seems too long. Consider shortening and making more clear and concise.

L18. Change 'recorded' to 'measured'

L24. 'In connection' is not the appropriate term here.

L43. Delete 'depth'

L44-45. What about CH<sub>4</sub>? Seems like the shift in CH<sub>4</sub> production/consumption could offset some of the new losses when drying a peat soil?

L51. What do you mean by 'site conditions'? This is very vague.

L66. Change 'soil conditions' to 'soils. Replace 'with' with 'under'. Delete 'in the experimental year'

L70. Change 'pursued the hypotheses' to 'hypothesized'

L83. What does 'after field trips and meetings with farmers' have to do with how the field sites were distributed? Could you be more specific?

L93. Figure one is not very informative. Please change. Show more details or a key.

L116. Add 'e.g.' after 1st parentheses. Move parenthetical statement after 'farmers'

L255. Delete 'monitoring period'

L256. Delete 'monitoring period'

L267. Add 's' after 'soil', and change 'was' to 'were'

C2

L283-284. Delete sentence.

L305. Delete sentence.

L326-328. Delete sentence. It is not necessary to tell where data is shown. Just describe the data and then put the Figure number in parentheses.

L337-338. Why is this sentence out by itself? It should be in a paragraph

L361-363. Delete sentence. Same as previous comment.

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