

This work studied the effects of drying-wetting, soil aggregate size, litter addition and plant on N₂O flux from floodplain soils. The authors used model soils and mesocosm experiments to conduct the research. As far as I can say, there are still much more space can be improved for this manuscript.

In general, it is interesting to know how soil N₂O flux are controlled by different environmental factors. However, there are already many studies conducted in no matter drying-wetting and soil aggregation, or litter addition and vegetation effects. What the knowledge gaps do you want to fill? It should be clarified in the introduction part.

Here are technical questions:

1. Line 14-15, it is not accurate to write the buried organic matter and rhizosphere processes. Actually, the experiments were about litter addition and plant vegetation. It still takes several steps from litter to organic matter. And also, you didn't took the rhizosphere samples.
2. L148, for soil pH measurement, normally it is 10 g soil was mixed with 25 mL solution. The authors used 20 mL of solution, any references? The solution can be water or CaCl₂, as far as I know, for alkaline soil, it it better to use water. In this study, the soil pH were ~ 8, any reasons to choose CaCl₂?
3. Have the authors ever considered the emission/uptake of N₂O by the aboveground of plant? There are already many studies in this field, such as: Smart D R, Bloom A J. Wheat leaves emit nitrous oxide during nitrate assimilation[J]. Proceedings of the National Academy of Sciences, 2001, 98(14): 7875-7878. In this study, the authors measured N₂O flux from the mesocosm have both soil and plant. This flux cannot be called soil flux, but may be soil/plant flux?
4. L274, the author can show the data in support information.
5. L313-315, the authors didn't check the statistics difference of soil chemical/physical properties between different treatments. Therefore, the hypothesis is not really correct before statistics analysis were done.
6. L346-347, Actually WFPS-SA value were not decreased to pre-flood even until the end of experiments (Fig. 2 a and b). The explanation might be low diffusion rate of N₂O in SA treatments caused reduction of N₂O to N₂?
7. L409, delete one dot
8. L457, delete DOI
9. Table 2, it would be better to explain the meanings of LAU, SAU....in the table caption.
10. L638-639, no dotted line in Fig. 3?
11. Fig. 2, it would be better to put WFPS in the right Y axis. And put WFPS-LA, WFPS-SA....in the figure legend.
12. Fig. 3e, the data are not completely shown.
13. Fig. 4, would be better to have the same unit (μM) for nitrate and nitrite/ammonium.