

Interactive comment on “Fungi regulate response of N₂O production to warming and grazing in a Tibetan grassland” by Lei Zhong et al.

Anonymous Referee #4

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The present manuscript, entitled “Fungi regulate response of N₂O production to warming and grazing in a Tibetan grassland” was interesting. However, there are some critical issues, which may need to be addressed -

(1) The statistical analysis and reporting are weak. Is there any real field replication, excluding any pseudo replication? What was the power of the statistical test? Statistical differences among different treatments were not reported for all the sub-plots. Additionally along with p values, standard Error of the mean difference may need to be reported in the plots to understand the differences between the treatment means better.

(2) It was not clear how were the relative contributions of bacteria and fungi in nitrification, denitrification and total N₂O production derived from the total respective

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measurements? The methods need to be clear and reproducible.

(3) In addition to the present results of the relative contribution of bacteria and fungi in nitrification and denitrification, the definite mechanisms for bacterial and fungal pathways of nitrification and denitrification need to present to demonstrate the change in the pathway of N₂O production under the warming treatment. A definite mechanism of shifting in the relative contribution of bacteria and fungi in N₂O production would help the reader to understand the present results in a systematic way, particularly under the warming treatment. This would also help to explain and understand the underline reasons of changing the pathway of N₂O production between bacteria and fungi under warming.

(4) It was also not clear why the effects of warming on relative contribution of bacteria and fungi on nitrification, denitrification were diluted when warming treatment was combined with grazing, for example in fig 5 ?

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