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Interactive comment on "Nitrous oxide emission and nitrogen use efficiency in response to nitrophosphate, N-(n-butyl) thiophosphoric triamide and dicyandiamide of a wheat cultivated soil under sub-humid monsoon conditions" *by* W. Ding et al.

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Thank you very much for your review of our manuscript. We will revise our manuscript carefully according to the comments and suggestions of the reviewer. We hope the revised manuscript can fit with the acceptable standard for Biogeosciences. We would like to express our hearted gratitude to anonymous reviewers and the editor for their constructive comments and suggestions that improved the manuscript greatly. The

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Discussion Paper

point-by-point responses are as following:

Anonymous Referee #2

Comments: This manuscript reports on the changes in N2O fluxes and NUE along with yield by the application of a nitrification inhibitor and different types of N fertilizers. The topic is within the range of the scope and the manuscript is overall well written. The authors employed a field-scale manipulation experiment and the measurements covered whole growing season. The authors employed a proper statistical test and analytical methodology is well established one. One reservation of mine is the global importance of the study to the general readers of the journal. It is obvious that Northern China is one of the biggest agricultural sources of N2O, but I would like to see more generalization of the results. Are there any other reports on N2O emissions from agricultural fields in other countries with the similar climate zone? Any regional comparison or even simple literature review would benefit the quality of the manuscript.

Answer: Thank you very much for so nice comments. According to above suggestion, we have compiled data on N2O emissions from uplands in other countries with the similar climate zone in the literature (Table 6) and make a comparison. The section of Discussion will be revised as follows: P13586 L7, "...study. However, Zhang et al. (2014) found that the North China Plain is a large agricultural N2O source in China, contributing 36.3% of the total annual N2O emission from the China's croplands (Zhang et al., 2014). To make a global comparison, we compiled the literature data of N2O emissions from the temperate uplands under inorganic N fertilizer application in some countries of Asia, Europe and North America with similar latitudes to the studied region (Table 6). The emission factors of N applied in the North China Plain are generally lower than in the other countries, indicating a lower capacity of N applied being converted into N2O in the test soil. This is probably because N2O is predominantly produced from nitrification and denitrification is organic C-limited as discussed above. In contrast, the total N2O emissions from the studied region are obviously higher due to the greater N fertilizer loading (Ju et al., 2009). Our results confirm that N fertilizer sources influence

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soil N2O emissions, . . .".

Comments: Other minor comments; P13573 L1. Practice along with soil and climatic factors P13574 L11. So -> As such

Answer: We will revise the sentence according to above suggestion.

Comments: P13574L22. Drastically greater or smaller? than (something is missing)

Answer: We will add the missing word "greater".

Comments: P13582L12. concentrations Table 5. Pls use subscripts for chemicals (ammonium, nitrate)

Answer: We will revise the sentences according to above suggestion.

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Please also note the supplement to this comment:
http://www.biogeosciences-discuss.net/11/C7651/2014/bgd-11-C7651-2014-supplement.pdf

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Interactive comment on Biogeosciences Discuss., 11, 13571, 2014.