

Interactive comment on “Long-term monitoring of atmospheric TGM at a remote high altitude site (Nam Co, 4730 m a.s.l.) in the inland Tibetan Plateau” by Xiufeng Yin et al.

Anonymous Referee #1

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The behavior of Hg in the atmosphere is very important for the global Hg cycle. In this manuscript, Yin and colleagues determined TGM in Nam Co in the inland of Tibet Plateau and then used related models to address the transportation, transformation and source of TGM in the study region. This data reported in this paper is valuable because the study on the fate and transportation of TGM over the inland Tibet Plateau is almost blank. I suggest the manuscript to be accepted after minor revision.

General comments:

1. Title: In the study, the authors measured the TGM concentration from January 2012

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to October 2014 (< 3 years). Generally, the longer-term measurement should be over 5 years. I suggest the authors to modify the title for clarity.

2. Introduction. I suggest the authors to add some text to address the fate and transport of Hg in atmosphere, such as the redox chemistry of Hg, wet and dry deposition of atmospheric Hg and so on.

3. Results and discussion. The present paper investigated the atmospheric TGM in a remote site. It should discuss more about the remote or rural sites, but not the urban sites.

4. Conclusion. I suggest the authors to shorten the conclusion.

Specific comments:

L67-72: The present paper focuses on the TGM in remote region, but the authors discussed a lot about atmospheric Hg in urban region. As mentioned above, I suggest the authors to address the fate and transport of Hg in the atmosphere. If the authors like to discuss the atmospheric Hg concentrations in different regions, it is more reasonable to discuss TGM in background or remote regions.

L107-109: This information is too general. I suggest to delete this paragraph in the revised manuscript.

L219-221: As mentioned above, it is not reasonable to compare to the urban and industrial regions. I suggest to compare the data to some rural or background sites in China.

Figure 1 and Table S1: I suggest the authors to remove all urban sites and use the global map to show the distribution of TGM or GEM concentrations in the remote and rural sites around the world. In the Table S1, most sites labelled as remote sites should be changed to the rural site. Don't forget the study in the ocean. Figure 4: I suggest the authors to delete this figure. If they like to keep, try to merge all figures into one figure.

Figure 8. Move to supplementary material.

Figure 10. Remove the line for no data. When there is no data, it should show blank.

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