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Atmospheric Chemistry and Physics Discussions

Interactive comment on "The effects of recent control policies on trends in emissions of anthropogenic atmospheric pollutants and CO_2 in China" *by* Y. Zhao et al.

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Title: The effects of recent control policies on trends in emissions of anthropogenic atmospheric pollutants and CO2 in China

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We thank for the comments and suggestion from reviewer 1. Following is our point-by-point responses to those comments and corresponding revisions.

Reviewer #1

1. When compiling this inventory, some of most recent advances in emission factors were omitted. I understand that emissions presented in this paper were estimated even earlier, but it is still helpful to put the work into the context of recent literatures, e.g., on-road emission factors measured by Tsinghua's group (published in Atmos. Environ. and Atmos. Chem. Phys. recently), residential emission factors from Tao Shu's group (in Environ. Sci. Tech.), etc.

Response and revisions: We agree with the reviewer. In the revised manuscript, we have included the most recent work on emission factors of vehicles by Tsinghua (Wu et al., 2012; Yao et al., 2011) and those of residential sector by Tao Shu' s group (Shen et al., 2010; 2012). Table S1 and S2 in the Supporting Material are expanded, and the results of emissions and uncertainty analysis are then updated accordingly.

2. Background pixels should be rejected when comparing anthropogenic emissions with satellite data, because emissions from natural sources didn't growth as much as anthropogenic emissions. I believe this can explain part of discrepancy in SW and NW, where background pixels are dominant.

Response and revisions: We agree with the reviewer, and have added this explanation in the revised mansucript in Section 4.5.

3. P24991, refer to Huo et al., Energy Policy, 39, 7130-7135; 43, 6-16; 43, 30-36; for updated method and data.

Response and revisions: Revised as required.

4. P25008, given the fact of high uncertainties in current SCIA SO2 data, discussions here are mainly speculative and should be shortened.

Response and revisions: We agree with the reviewer and in the revised manuscript this part has been shortened.

5. P25003, line 10, a reference to ground measurement data would be helpful.

Response and revisions: Revised as required.

6. P25007, line 7, should refer to Boersma et al., Atmos. Meas. Tech., 4, 1905-1928, 2011 for DOMINO v.2

Response and revisions: Revised as required.

7. TEMIS should be also acknowledged for free use of their data.

Response and revisions: Revised as required.

REFERENCE Shen, G. F., Wei, S. Y., Wei, W., Zhang, Y. Y., Wang, B., Wang, R., Li, W., Shen, H. Z., Huang, Y., Yang, Y. F., , Wang, X. L., Wang, X. J., Tao, S.: Emission factors, size distributions and emission inventories of carbonaceous particulate matter from residential wood combustion in rural China, Environ. Sci. Technol., 46, 4207-4214, 2012.

Shen, G. F., Yang, Y. F., Wang, W., Tao, S., Zhu, C., Min, Y. J., Xue, M., Ding, J .N., Wang, B., Wang R., Shen, H. Z., Li, W., Wang, X. L., Russell, A. G.: Emission factors of particulate matter and elemental carbon for crop residues and coals burned in typical household stoves in China. Environ. Sci. Technol., 44, 7157-7162, 2010.

Wu, Y., Zhang, S. J., Li, M. L., Ge, Y. S., Wu, J. W., Zhou, Y., Xu, Y. Y., Hu, J. N., Liu, H., Fu, L. X., He, K. B., and Hao, J. M.: The challenge to NOX emission control for heavy-duty diesel vehicles in China, Atmos. Chem. Phys., 12, 9365-9379, 2012.

Yao, Z. L., Huo, H., Zhang, Q., Streets, D. G., and He, K. B.: Gaseous and particulate emissions from rural vehicles in China, Atmos. Environ., 45, 3055-3061, 2011.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 24985, 2012.