Atmospheric
Chemistry
and Physics
Discussions

Open Access

EGU

Interactive comment on "Impacts of Coal Burning on Ambient PM$_{2.5}$ Pollution in China" *by* Qiao Ma et al.

Anonymous Referee #1

Received and published: 16 October 2016

Although strict control policies have been conducted, coal burning still dominates China's anthropogenic emissions of air pollutants, and has thereby been a main source of heavy pollution across the country. This manuscript presented a work that integrated the emission inventory development, chemistry transport modeling (CTM), and the sensitivity analysis to find the contribution of coal burning in ambient PM2.5 concentrations. The paper is quite well organized, clearly presented, and easy to follow. I recommend some small revisions or discussions before its publication.

1. Emission inventory: do the authors estimate CO emissions as well or they were obtained from other studies?

2. The model evaluation. The authors used NMB as an indicator, which could potentially be affected by the compensation of overestimation and underestimation of CTM.

I suggest them provide NME for Figs 3 and 4.

3. More discussions should be given in uncertainty analysis. For example, the authors discussed the uncertainty of emission estimations based on Monte-Carlo simulation. However, it was not sufficient for readers to know the impacts of emission inventory estimation on the source apportionment results. More comparisons between various inventory studies are encouraged here to indicate the potential uncertainty of source apportionment from emission side. Moreover, there are some studies using the methods other than Brute-force to reduce the impacts of non-linear response of PM2.5 concentrations to precursor emissions, and they should be included in the part.

4. In general the language is clear, however there are some grammar errors which need to be carefully revised before publication.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-601, 2016.