

Interactive comment on “Impact of open crop residual burning on air quality over Central Eastern China during the Mount Tai Experiment 2006 (MTX2006)” by K. Yamaji et al.

K. Yamaji et al.

kazuyo@jamstec.go.jp

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The authors are deeply grateful to the referee for his/her review providing excellent suggestions for improvements of this manuscript.

General comments:

As outlined by the two other reviewers, there are inherent limitations in the capabilities of the model as it is applied to a specific, isolated, location (summit of Mt. Tai). In general, this referee agrees with the concerns of his co-reviewers and will thus not reiterate their comments. Nevertheless, the present study appears worthwhile to be published, provided the authors address the questions and comments of the referees

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in their revised version of the manuscript.

Reply to General comments:

We understand a part of that the limited comparison between model and observation at the summit of Mt. Tai is too weak to investigate the whole Central Eastern China using the model. However, as mentioned by other papers published in this special issue (e.g. Kanaya et al., 2008), since the site is free from local sources as it is located at 1534 m high, we believe that the summit of Mt. Tai had regional a representativeness for the Central Eastern China, with much reduced spatial inhomogeneity compared to a urban site. Meanwhile, we think that urban sites at the Central Eastern China with outstandingly high emission rates of atmospheric pollutants are not befitting for locations with regional representativeness there. Furthermore, publicly available ground-based observation data in this region are very limited. As the reviewer pointed out, however, to evaluate more the model's reliability, we will show comparisons between model and observation in the revised manuscript using observational data at other sites, e.g., Mondy (51.40 N, 101.00E, 2000m asl) , Mt. Hua (110.09E, 34.49N, 2064ma.s.l.), Mt. Huang (118.15E, 30.14N, 1836ma.s.l.), Xinglong (40.42N, 117.4E, 940m asl) and satellite data (OMI NO₂ (Irie et al., 2008)), both of which can help discussion on regional representativeness.

Reply to Technical Corrections:

We appreciate the referee's technical corrections. Following the referee's corrections, we will correct all mistake, in the revised manuscript. We will re-submit the revised manuscript after English proofing by native speakers. Our manuscript included awkward part as mentioned by referee. We will correct all as shown in the following:

Technical Correction 10:

p. 22108, lines 23-24: The phrase "emission spatial intensities" sounds awkward or actually unclear.

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Reply to Technical Correction 10:

We think that 'the spatial distributions of gridded emissions for biomass burning in the ACESS inventory. . .' is better than 'the emission spatial intensities using the ACESS inventory for biomass burning'. We will change this.

Technical Correction 11:

p. 22108, line 26: What do the authors really mean by saying "focus on"?

Reply to Technical Correction 11:

This part means that we found that 'the spatial distributions of gridded emissions for biomass burning in the ACESS inventory (Streets et al., 2003) did not necessarily correspond to the hotspot positions for the year 2006, because the inventory was an annual base inventory for different year'. We will change this.

Technical Correction 12:

p. 22108, line 26: What do the authors really mean by saying "focus on"?

Reply to Technical Correction 12:

We think that 'The previous studies for the TRACE-P' is better than ' observation campaign base studies'

Technical Correction 23:

p. 22123: There are numerous awkward or non-scientific terms throughout this entire page that should be reworded.

Reply to Technical Correction 23:

We will check numerous awkward or non-scientific terms. Additionally, the revised manuscript will be checked by native speakers.

Technical Correction 24:

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p. 22124, line 1: What are "smooth" hotspots"?

Reply to Technical Correction 24:

This means 'using smoothed hotspots'.

Technical Correction 26:

p. 22127 - 22132: Use consistent and appropriate style for the references.

Reply to Technical Correction 26:

The references will be modified.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 22103, 2009.

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