

Interactive comment on “Impact of different emission inventories on simulated tropospheric ozone over China: a regional chemical transport model evaluation” by J. Ma and J. A. van Aardenne

Anonymous Referee #1

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General Comments

This paper highlights an important uncertainty in chemical transport modeling. The authors were thorough in their modeling efforts and this is good and timely work. The visual representation of the emissions inventories and the discussion of differences are very helpful. The conclusions however seem less than satisfying and more discussion is necessary to further support the author's claims. I recommend this work for publication if the discussion is further expanded.

Specific Comments

Although there were both references and source information for all the inventories

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used, a more detailed description of the methodologies used to compile the inventories should be included. For example in the TRACE ÚP emissions inventory what model was used to forecast values for the year 2002. What does the sentence §For China, activity data have been taken from the Chinese situation meanŤ? How were NMVOC added to the CORP inventory?

There is not an adequate description of the model transport and chemistry included in either the methods section or in the paperŤs conclusion. What aspects of the model may have led to relatively small ozone concentration differences despite the large differences in emissions inventories? How did the sensitivity studies address these aspects of the chemical mechanism? Were there deficiencies in the chemical mechanism?

The motivation for performing the sensitivity analysis should be better described. What aspects of the chemical transport mechanism are targeted by these sensitivity tests?

Technical Comments

Figure 1 and 2 both need more descriptive figure captions.

The third sentence in the second paragraph of section 2.2 has no verb.

The 5th sentence in the first paragraph is section 2.3 is not sufficiently descriptive.

The scenario labels in section 3.3 are confusing and should be changed

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 507, 2004.

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