

Interactive comment on “A comprehensive modelling way for assessing real-time mixings of mineral and anthropogenic pollutants in East Asia” by F. Lasserre et al.

F. Lasserre et al.

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Answer to comment 2:

* We are going to cut the paper short, but we would like to keep most of the bibliographic references because, (i) these references are part of the validation of the model products. It is the way to find consistency between simulation results and other works and data when actual data related to the studied event are not available, (ii) they intend to give an overview of the state of the art in the mesoscale research, as regards mixed pollution issues in East-Asia, (iii) most of these quantitative references recall the typical variability inherent in this domain. It is important to keep in mind this variability (including discrepancies between models and data). We try to show exhaustively how

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the orders of magnitude vary according to authors and that our simplified approach can agree with these magnitudes, even with a short time step issue.

* We prefer to keep the Uno et al. (2003) reference because it appears to be an essential reference in the mesoscale modelling, because they also use the RAMS code and deal with mixed pollution (see e.g. a recent paper <http://www.atmos-chem-phys-discuss.net/7/15955/2007/acpd-7-15955-2007.html>).

* We do apologize for some inappropriate English forms and we will try to correct them as possible.

Answer to comment 3:

The referee points out that most of the model simulations concern long time-step simulations. But we know that the mixed pollution study is not only a spatially heterogeneous issue but also a temporally heterogeneous issue, even for a mesoscale study. It is important to find real-time products when we focus on short dust episodes spreading over cities (as regards, for instance, photochemical aspects, health impacts, airplane hazards etc). Moreover, the DPM is based on threshold wind speed. Consequently, wind speed results smoothed over too long periods don't give the realistic behaviour of the dust storm, and, finally, don't follow the short-term variations in the observed pollution data.

Answer to comment 4:

We hope that the answer to question 1) explains how we use the bibliographical references. We hope to be trusted if we specify that a few number of publications not mentioned here were discarded because they seemed - to us - not to be reliable. According to the quantitative model results, compared to actual in-situ data, we compared the orders of magnitude of concentrations and AOT and the time synchronization. It is irrelevant to make a linear regression between model and data because a tiny phase difference in time makes the correlation low although the model time tendencies agree

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with the time data tendencies

Answer to comment 5:

Figure 13 won't be included in the last version of the paper and rectangles of zone 1-3 are enlarged.

Answer to comment 6:

We only keep the MODIS snapshot on the final version. The other satellite data are removed of the manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 11895, 2007.

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