

Interactive comment on “Estimation of lifetime of carbonaceous aerosol from open crop residue burning during Mount Tai Experiment 2006 (MTX2006)” by X. L. Pan et al.

Anonymous Referee #2

Received and published: 2 August 2012

General comments:

The paper presents the measurements of aerosols and some gases at the summit of Mt. Tai during two open crop residue burning (OCRB) episodes in the summer, and attempts to estimate the lifetime of carbonaceous aerosols from OCRB by regression fitting the measured ratios of carbonaceous aerosols to CO with FLEXPART_WRF model calculated transport time of OCRB smokes. Although the data set is valuable for evaluating the influences of OCRB on the distribution of carbonaceous aerosols in that region, the regression fitting method used is inadequate for the expected results by authors in getting an estimation of lifetime of carbonaceous aerosols from OCRB,

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because the ratios of carbonaceous aerosol over CO calculated from measurements are the contributions of all air masses coming from various sources at the time, the air masses could be fresh or aged, from OCRB or industrial sources, . . . , but the transport time is estimated only for OCRB sources in the specific regions. In addition, there are a lot of grammatical and spelling errors in the text, such as “on basis of (page 14367, line 4)”, symbols in Eq. (1) and Eq. (3) (Page 14373) , “20<T30h (Page 14374”, and so on. Considering the topic of the paper, it is NOT recommended for the publication in ACP.

Some specifics: 1. Page 14370, line 15-17: The baseline of carbonaceous aerosol and CO should be given; 2. Page 14371, section 3.3.1: When comparing the EC data or the ratios of EC/CO from different investigators, authors should keep in mind that EC analyzed with Sunset OCEC analyzer may be different from other methods, as different instruments/methods may give different readings for BC or EC. 3. P14373, Line5-6: “As shown in Fig. 2a and b, the upward transport pattern of OCRB plumes was excellently captured by the model”, the comparison of model results with observations is needed.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 14363, 2012.

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