

Interactive comment on “Intense atmospheric pollution modifies weather: a case of mixed biomass burning with fossil fuel combustion pollution in the eastern China” by A. J. Ding et al.

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The authors would like to thank the referee for overall positive comments on this paper. Below we give reply to the comments one by one.

Minor comments: 1) For high sulfate concentration associated with SO₂ plume, the authors presents a very interesting mechanism of a mixing of regional biomass burning plumes with urban emissions. It will better if the authors added several sentence to discuss possible processes of a fast oxidation of SO₂ in the biomass burning plumes from the perspective of chemistry.

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Reply: We will add several sentences to mention this possibility in the revised manuscript.

2) The authors presented a very good correlation analysis in Fig. 5 to shows the difference between episode and non-episode days and also to show the evidence of mixed plumes from biomass burning and fossil fuel combustion sources. For Fig. 5b and 5c, it is better to extend the linear fitting line crossing the data marked with ellipses with dashed lines.

Reply. Thanks for the good suggestion. We will extend the fitting line in Figure 5.

3) In Figure 6a-6c, the authors show the air pollution index. It can be found that for Yangzhou city (Fig. 6b), a higher air pollution index appeared in June 9, but the difference between measured and simulated air temperature were relatively smaller than June 10. The author should mention this point and discuss the possible reasons related.

Reply: The main difference is that the air pollution index represents a daily mean value, i.e. it lacks temporal variation. However, the modification of air temperature mainly existed only during the daytime. In addition, the PBL height is also a possible factor. We will add 1-2 sentences to discuss this issue in the revision.

4) For the MAGAR instruments, it will be better to add 1-2 references related to the measurement methodology or application in China.

Reply: We will add some reference related to MAGAR measurement.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 14377, 2013.

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