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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Identification of particulate organosulfates in three megacities at the middle and lower reaches of the Yangtze River" *by* X. K. Wang et al.

Anonymous Referee #2

Received and published: 15 October 2015

The manuscript presents results from high-resolution mass spectrometric analysis of 8 particle samples collected in three chinese cities, and the main objective of the study is to investigate occurrence of organosulfates and nitrooxy-organosulfates. As such, the study should be very interesting, but unfortunately the presentation needs to be improved in order to communicate the findings adequately. There are numerous grammatical errors, which need to be corrected carefully before resubmission. The study is interesting and should be published once the authors has improved it according to the comments of all reviewers.

General comments: The study is based on eight samples, which is OK, given that the

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authors remember this limitation in their discussion of the findings. Examples where this need to be improved are found e.g. on pages 21428 and 21431 as well as the discussion of Fig. 5 on page 21433.

The introduction should refer to the first findings of organosulfates and nitrooxy-organosulfates before more recent papers (first paragraph).

I support the discussion brought forward by other reviewers regarding use of the word "identification". This word should only be used, when the finding has been supported by analysis of an authentic standard.

Number of isomers: It is not clear what the scientific explanation and interpretation is of these numbers, and why this is relevant (text + Fig. 2).

Specific comments: page 21418 line 7: Find a better reference than Lee et al, 2013 for this statement.

21419 line 15: BS -> OS several places: particulate matters -> particulate matter

Materials and methods: Please add some more information on the cities and the surrounding areas.

21422 lines 4 + 5: Ficher -> Fischer

21422 line 14: Please state at least the recovery percentage here. Use of the word daily: In most places it should be replaced by "daytime".

21246 line 18: Do you mean that C (C6H10O3SO4) could come from isoprene with 5 C-atoms?

21248 line 7: "so closed values" – do you mean so similar or?

21248 lines 10-25: This discussion should focus on differences between samples not cities (due to the very low number of samples).

21249 line 26: Add reference to Fig. 3 here.

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21432 line 1-2: This statement seems out of context and should be elaborated further, preferably with reference to relevant sources.

21433 line 4-5: This statement is too strong (given the few samples) and should be softened.

21434 line 11: How can these pathways lead to low abundance of CHONS during daytime? A better statement would be that they lead to a higher abundance during night.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 21415, 2015.