

***Interactive comment on “Elevated nitrogen-containing particles observed in Asian dust aerosol samples collected at the marine boundary layer of the Bohai Sea and the Yellow Sea” by H. Geng et al.***

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Received and published: 17 August 2009

We thank Anonymous Referee #2 for his/her valuable comments on our manuscript, which help to improve the quality of our manuscript. Our response to the reviewer's comments is given below:

1. 1st comment: “On the other hand it is very critical to conclude principal statements on this data base. It is not possible to use the determined chemical composition of

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the N1,2,3 samples as reference for “normal” days. What are normal days? There are more variables influencing concentration and composition of the aerosol population than “dust storms”. Because of this reason, I would prefer that all principal statements were checked carefully.”

Response: As pointed out by the reviewer, it is not possible to use the determined chemical composition of the N1,2,3 samples as reference for “normal” days. Actually, we do not have any intention to generalize characteristics of “normal” day samples. Instead, we adopted the word to differentiate them from Asian Dust samples. We will use the word of “non Asian Dust (NAD)” instead of “normal day”.

2. 2nd comment: “It is difficult to discuss about the total content of soot and secondary aerosols on base of supermicron data. This may deserve some additional comments.”

Response: The revised version will be modified to clearly specify that we are dealing with supermicron data when discussion is made on soot and secondary aerosols.

3. 3rd comment: “The (C,N, O) and (C,N,O,S) –rich droplets are one central point of this paper. Origin and behaviour of these particles are discussed in detail in a lot of previous papers (e.g. Wittmaack, Atmos.Environ. 36, 2002 or Vester et al., Atmos.Environ. 41, 2007).”

Response: More discussion on the origin and behaviour of (C,N, O) and (C,N,O,S) –rich droplets will be added as the reviewer recommended.

4. 4th comment: “I would prefer that the term “fine fraction” is not used for supermicron particles.”

Response: The expression of “PM1-2.5 fraction” will be used instead of “fine fraction”.

5. 5th comment: “Tab.1 and 2 are a little bit confusing.”

Response: As the reviewer pointed out, the inclusion of Table 2 does not seem much relevant in our discussion, which will be deleted.

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