

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.

Anonymous Referee #2

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The manuscript ACP-2009-247 “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. presents results from electronmicroscopic individual particle analysis on ambient aerosol particles collected on a ferryboat in the Bohai and Yellow Sea. The paper is well written and the electronmicroscopic analysis delivers valuable information about the chemical composition and mixing-state of the ambient aerosol particles.

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Six samples were taken in a time period of 4 following days. Regarding to the backward trajectories these samples were separated in three “dust storm” situations (one meteorological event) and three “normal” situations. In my opinion this sample pool is sufficient as a kind of “test-data-set” to show and discuss the findings about the chemical composition and mixing-state for two different situations. 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 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.

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.

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).

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

Tab.1 and 2 are a little bit confusing.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 13655, 2009.

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