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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Cloud condensation nuclei (CCN) from fresh and aged air pollution in the megacity region of Beijing" *by* S. S. Gunthe et al.

Anonymous Referee #2

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This paper presents a solid and thorough study of the aerosol and CCN properties outside Beijing, and is of interest because it provides insights on the properties of one of the most polluted air masses on the planet. The comparison of fresh versus aged pollution is interesting and convincing. I recommend the following relatively minor changes/additions before the paper is published in ACP:

1) The effect of wet-removal on the aerosol properties is not mentioned at all in this paper. Was there precipitation in the region over the course of the observational campaign, and if so, did this affect the aerosol distribution and properties?

2) Figure 1: To give the reader a better understanding of the region these observations are taken from, it would be good to show topography in Figure 1, as well as indicate the location of Yufa, the measurement site.

3) Page 9971, lines 20-28: The mean of the effective hygroscopicity for this study is given as 0.3 +/-0.1 and said to be in agreement with a wide range of other studies. I recommend a table showing the effective hygroscopicity parameters from all these studies, as well as the location the measurements were taken at, along with the value presented here. This would be more informative and would also place the findings of this paper in context.

4) Page 9976, Equation 1: Please give a more in-depth discussion of the validity of this equation, for different seasons, other regions etc.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 9959, 2011.