Atmospheric
Chemistry
and Physics
Discussions

Interactive comment on "Variations of Cloud Condensation Nuclei (CCN) and aerosol activity during fog-haze episode: a case study from Shanghai" *by* C. Leng et al.

Anonymous Referee #1

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General comments This paper is very interesting and helpful for us to get knowledge of the impacts of pollutants in foggy or hazy events on surface CCN number concentration and relevant aerosol activity. There is short of the impacts of heave foggy event on CCN, and more studies about this issue are needed in the subsequent works of the authors. The language and clarity of the paper has been improved in some parts. References have been improved by referring to the most original and/or latest studies. It seems that it is not quite often to use CN larger than a certain size (e.g. CN larger than 80 nm and 100 nm in this paper) to get the activated fraction. A lidar ratio plot would help to gain more information about the aerosol. In addition, a slight modification

in needed for Figure 1 because the time labels are some kind of mixed. I recommend the publication of this paper in the journal of ACP after minor revisions.

Specific suggestions 1. The paper should give more explanation to MPL, such as calibration, data processing. 2. The paper should add more address clearly on time-scale of averaging for meteorological factors, CCN, BC and other data. 3. Figure 1 needs some modification for time labels. 4. The authors should give more explanation for the equation 2. 5. More related references should be added and the reference style should be adjusted correctly. 6. The English should be polished by a native speaker.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 16997, 2014.