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Atmospheric Chemistry and Physics Discussions

Interactive comment on "A case study of dust aerosol radiative properties over Lanzhou, China" *by* L. Zhang et al.

Anonymous Referee #3

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Review for "A case study of dust aerosol radiative properties over Lanzhou, China" by L. Zhang, X. Cao, J. Bao, B. Zhou, J. Huang, J. Shi, and J. Bi

The vertical distribution of dust aerosol and its radiative properties are critical for our understanding its direct and indirect influences on solar radiation. The authors analyzed the dust aerosol radiative properties over Lanzhou through a case study of the dust storm during 27-29 March 2007 using the collected data from lidar, microwave radiometer, sunphotometer, particle monitor, and nephelometer at the Semi-Arid Climate and Environment Observatory of Lanzhou University (SACOL). The present results are very helpful for us to understand the properties of dust aerosol, particularly over arid and semi-arid areas. The manuscript is well organized and writing is good although some improvements can do better. I would like to suggest accepting this manuscript

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after some minor revisions.

Minor Comments:

1. I am not a native English speaker, so I did not check the English of the manuscript.

2. Page 2890, line 18. You mean “cannot be obviously observed.”

3. It would to nice if adding a photo to show the SACOL and corresponding instruments. I think there is one in the SACOL documentation. But I leave the decision to the authors. If the authors feel it is not necessary, please ignore this comment.

4. Page 2892, Can a table or tables show basic properties of these instruments? Also,

5. Fig. 3. Probably can use a new colorbar.

6. Fig. 7. (b), it is extinction coefficient or scattering coefficient?

7. Page 2899, section 4.6. It would nice if adding some physical explanations on correlation between PM10 concentration and dust extinction coefficient if possible.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 2889, 2010.