

Interactive comment on “Surface observation of sand and dust storm in East Asia and its application in CUACE/Dust” by Y. Q. Wang et al.

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Comments from “acpd-7-S3862.pdf”

Pg. 9118, lines 5, 10: Are the four SDS categories arbitrarily defined by authors or they are based on some existing categorization (SYNOP reports)? What data from weather stations is used: current/past weather, visibility? Please clarify.

Response: The four SDS categories are defined by Chinese Meteorological Administration (CMA, 1979. Regulations of Surface Meteorological Observation. China Meteorological Press, Beijing, 21-27 pp) for reporting purpose. Current weather data from weather stations are used. We have clarified them in the revised paper.

Pg. 9119, line 15: Referencing on the Indian and Afghan SDS should be removed from the considerations in the paper text and from figures. These regions are not the subject

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of the study.

Response: The Indian and Afghan SDS are obvious in our analysis result. It is right that these regions are not the subject of the study, but we think it should be informative to readers and the researchers who are interested in the area through mention it in the paper. So we just give one sentence on it.

Pg. 9119, line 18: Is Fig 3 made using both PM and visibility measurements?

Response: Fig 3, Fig 2 and Fig 4 are all made using meteorological records of each weather station which have been mentioned in the context of the paper.

Pg. 9121, line 6: As indicated before the PM network was established 2003. Why the authors analyze only the 2004-2006 period?

Response: In Pg. 9118, line 22, we have described that “From 2004, the PM10 and visibility observation data were started to be transferred to the CMA information center in real-time”. To be more clear, the sentence has been changed to “After experimental running of the SDS monitoring network in 2003, the PM10 and visibility observation data were started to be transferred to the CMA information center in real-time from 2004”.

Pg. 9121, line 21: “Due to the high frequency of SDS events, very low visibility was observed in Tazhong station with a mean value of 10 395 m.” Error in units? The effect of non-dust aerosol: this is enough to mention its impact on visibility as done in the text, and to retain in Fig 4 only Vis_SDS and PM10_SDS information. This will make the figure more ‘readable’.

Response: 10 395 m is the mean value of the all visibility data, not just the data during SDS events. There is no error in unit. The objects that we put the mean values of all PM10 and visibility data and the values just from SDS events in Fig 4 are: (1) to give the general information about the PM10 concentration and visibility values in Northern China, (2) to emphasize the values during SDS events and (3) to compare the values

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between general data and SDS events data. There is only a very brief description of the results in the text, but Fig 4 could give much more valuable information. Also the legend and the title of the figure have identified the datasets. So we think it is better to keep the Fig 4 more informative.

Comments from “acpd-7-S3668.pdf”

There is an unsupported assumption (p.9124, lines 18-21) that PM40 can be used as a substitute for PM10, when PM10 is unavailable and when wind speeds are low. This may be intuitive, but it is risky without evidence. I recommend deleting this part of the analysis or revising the statement to reflect greater uncertainty.

Response: We agree with it, so the sentences have been deleted in revised paper.

General comment: Improvement of the language is recommended.

Response: The language has been improved by Dr. W. Sprigg.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 9115, 2007.

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