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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Intercomparison between aerosol optical properties by a PREDE skyradiometer and CIMEL sunphotometer over Beijing, China" *by* H. Che et al.

H. Che et al.

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This paper is aimed to the intercomparison of AODs measured by two different types of sunphotometers. Both instruments measure the attenuation of incident solar light passed through the atmosphere at a given location. Ideally, two different measurements systems must provide the same AOD, if the measurements are performed at the same location and time. Spatial and temporal collocation was insured by authors.

Figure 1 confirms that both measurement systems provide close values of AODs, which is an important conclusion of this work. The correlation coefficient is close to 1.0. However, more detailed comparisons as illustrated in Figs. 2, 4, 5, 6 show that there are

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considerable disagreement between two types of measurements of the same quantity. S7271 This is an important conclusion of this work (especially taking into account the use of AERONET data as "truth" data by the satellite remote sensing community and also by climate modelers). Clearly, this difference must be understood. In particular, Fig.2 shows that in some cases Angstrom exponent is equal to 1.2 for AERONET and it is just 0.3 for SKYNET. I think, both AERONET and SKYNET communities must seat together and understand the reasons behind the differences.

Therefore, I highly recommend the publication of this paper. This paper has a potential to bring both AOD measurement communities together. This will improve the performance of both measurement systems in future.

A: The authors highly appreciate the reviewer's comments. Some details were added to explain the difference between the two instruments. And some reversions are done in the revised manuscript according to the other two reviwers' constructive comments.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 16023, 2007.