

Interactive comment on “Trans-Pacific dust transport: integrated analysis of NASA/CALIPSO and a global aerosol transport model” by K. Eguchi et al.

K. Eguchi et al.

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Thank you very much for your careful reading and appropriate comments. We will revise our manuscript according to your comments.

Reply to Comments:

1. "This is a well conducted analysis that deserves to be published. On the other hand, it is not fully original as several other similar works have been done in recent years, as soon as Calipso data got available. The author should perhaps make a better recognition of similar works and explain what is the novelty of their own contribution. See for instance [Generoso et al (2008), J. Geophys. Res., 113, D24209, doi:10.1029/2008JD010154, or Huang et al (2008), , J. Geophys. Res., 113, D23212,

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doi:10.1029/2008JD010620]."

We will refer to the Huang et al. (2008) on the section 1. We will also refer to the Generoso et al. (2008) on the subsection 3.2.

2. "One problem of such studies is that they cannot be generalized easily. It is not clear whether the case that is analyzed is an exceptional event or whether it is representative of a frequent phenomenon. As a single case analysis, the author should avoid to make general statements as they do in the last sentence of the abstract or in the conclusions."

As you commented, our study is a single case analysis and general statements should be avoided. So we will change the expression on the Page 4025, line 28: "our study has verified that"; to "our study has implied that";

3. "On the other hand, they may state (if appropriate) that they have looked at other dates and have observed similar events. It is even better if they could provide a frequency of occurrence."

As for the similar events, Yumimoto et al. (2008) referred in the subsection 3.2 is applicable. They presented another case of Taklimakan dust event that occurred on about 10 days later than our study which was transported in the high altitude. Aoki et al. (2005) analyzed major dust storms on the Tarim Basin over the period of March to May from 1998 to 2001 and they characterized three meteorological conditions that generate dust storms. They assigned six in the thirty events to the pattern of the same as our current study. So dust events similar to that indicated in our study seem to occur several times during the springtime. We will include further discussion about these studies.

References:

Aoki, I., Kurosaki, Y., Osada, R., Sato, T., and Kimura, F.: Dust storms generated by mesoscale cold fronts in the Tarim Basin, Northwest China, *Geophys. Res. Lett.*, 32, L06807, doi:10.1029/2004GL021776, 2005.

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Huang, J., P. Minnis, B. Chen, Z. Huang, Z. Liu, Q. Zhao, Y. Yi, and J. K. Ayers (2008), Long-range transport and vertical structure of Asian dust from CALIPSO and surface measurements during PACDEX, *J. Geophys. Res.*, 113, D23212, doi:10.1029/2008JD010620.

Yumimoto, K., I. Uno, M. Tanaka, Y. Hara, A. Shimizu, and N. Sugimoto (2008), Elevated Large-Scale Dust Veil Originated from the Taklimakan Desert, 24th International Laser Radar Conference, Boulder, US, June 2008.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 9, 4013, 2009.

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