

Interactive comment on “Transpacific pollution transport during INTEX-B: spring 2006 in context to previous years” by G. G. Pfister et al.

Anonymous Referee #1

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Phister et al. (2009) analyzes the transport of pollution across the Pacific to the US between 2000 and 2006 and provides a quantitative estimate of the interannual variability of transpacific transport, whether it is due to changes in emissions and meteorology. This paper is a nice addition to the current collection of papers on transpacific transport. I recommend this paper to be published in ACP after the following minor comments are addressed.

1. Proper reference of past literature. This paper focuses on understanding the drivers of the interannual variability of transport of pollution across the Pacific. There have been dozens of paper focusing on understanding transpacific transport in the past decade. Of particular relevance to this study, a number of papers focused on understanding the interannual variability of transport of pollution across the Pacific, e.g.

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Liu et al. (2005), Liang et al. (2005), Reidmiller et al. (2009). These papers should be properly accredited. In addition, how is the interannual variability discussed in this work compared with that from Reidmiller et al. (2009)?

Reidmiller et al.: Interannual variability of long-range transport as seen at the Mt. Bachelor observatory, Atmos. Chem. Phys., 9, 557-572, 2009.

Liang, Q., L. Jaeglé, and J. M. Wallace: Meteorological indices for Asian outflow and transpacific transport on daily to interannual timescales, J. Geophys. Res., 110, D18308, doi:10.1029/2005JD005788, 2005.

Liu, J., D. L. Mauzerall, and L. W. Horowitz, Analysis of seasonal and interannual variability in transpacific transport, J. Geophys. Res., 110, D04302, doi:10.1029/2004JD005207, 2005.

2. I found section 3.3 difficult to follow. I am not sure it is meaningful to derive the trend by adding the trend from MozConst to an assumed trend. The two components might not be linearly stackable as change in emissions will also result in changes in relative composition of pollution outflow from Asia and the subsequent transport pathway, etc. In addition to the impact of “natural” variability, trend analysis is subject to great uncertainties caused by other factors, such as the timing and length of the temporal period. These are not discussed in the manuscript. Since this section is peripheral to the overall analysis, I would suggest it to be removed.

3. Page 17819, Line 24-25 & Page 17834, Line 21, 27: Based on the context of this study, it is probably better to use “meteorology” instead of “transport pathways”.

4. Page 17823, Line 10-12. “. . . such as . . .” should be deleted. Or if there are any other inventory that the authors want to reference, a brief comparison should be included.

5. Page 17828, Line 26-27: Should be “other than for Asia”?