

Interactive comment on “Trans-Pacific transport of Asian dust and CO: accumulation of biomass burning CO in the subtropics and dipole structure of transport” by J. Nam et al.

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The authors may want to review and include several observation-based assessments of the trans-pacific transport of Asian pollution/dust including:

<http://atmos-chem-phys-discuss.net/8/18531/2008/acpd-8-18531-2008.pdf>

McNaughton et al., Observations of heterogeneous reactions between Asian pollution and mineral dust over the Eastern North Pacific during INTEX-B, Atmospheric Chemistry and Physics Discussions, 9, 8469-8539, 2009.

Dunlea et al., Evolution of Asian aerosols during transpacific transport in INTEX-B,

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Atmospheric Chemistry and Physics, 8, 15375-15461, 2008.

Clarke, A.D., W.G. Collins, P.J. Rasch, V.N. Kapustin, K. Moore, S. Howell, and H.E. Fuelberg, Dust and pollution transport on global scales: Aerosol measurements and model predictions, J. Geophys. Res., 106 (D23), 32555 - 32570, 2001.

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Often lacking from model assessments such as this are a clear demonstration that the simulation captured the arrival and relative intensity of trans-Pacific plumes at receptor sites that are relatively well instrumented. Demonstrating that GEOS-CHEM captures the temporal/spatial variation in CO, aerosol extinction and/or AOD during the 2003 events will lend much more confidence to the results. Although the authors include a comparison to time series of CO at the Mariana Island Site, I would encourage them to perform similar analysis for:

CO and Aerosol Extinction at:

Mauna Loa Observatory (<http://www.esrl.noaa.gov/gmd/aero/net/mlo/index.html>)

Trinidad Head Observatory (<http://www.esrl.noaa.gov/gmd/aero/net/thd/index.html>)

Comparisons to 2003 AERONET AOD data at:

Mauna Loa Observatory Fresno Roger Dry Lake San Nicolas

AERONET and MPLNet data are both available for the May 2003 time period at Monterey. This should enable a more detailed comparison of the vertical distribution of dust in the simulation compared to observations

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