

Interactive comment on “Response of Global Surface Ozone Distribution to Northern Hemispheric Sea Surface Temperature Changes: Implication for Long-Range Transport” by Kan Yi et al.

Meiyun Lin

meiyun.lin@noaa.gov

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1. The manuscript is missing an importance reference on the connection among ENSO, intercontinental pollution transport, and ozone variability.

Meiyun Lin, L.W. Horowitz, S. J. Oltmans, A. M. Fiore, Songmiao Fan (2014): Tropospheric ozone trends at Manna Loa Observatory tied to decadal climate variability, *Nature Geoscience*, 7, 136-143, doi:10.1038/NGEO2066.

This paper used observations at Mauna Loa Observatory in Hawaii, multi-decadal model hindcasts (including those driven by observed SSTs) and idealized CO-like trac-

ers to show that the eastward extension and equatorward shift of the subtropical jet stream during El Niño enhances long-range transport of Asian pollution towards the eastern North Pacific, raising free tropospheric ozone over the subtropical North Pacific region. La Niña manifests in an opposite way. They also found that long-range transport of Asian pollution has weakened in the 2000s due to more frequent La Niña-like conditions (the negative phase of the Pacific Decadal Oscillation).

It seems like that the ozone response to Pacific cooling shown in your Figure 1 resembles the response to El Niño discussed in the above paper. Their findings should be summarized in the Introduction and discussed in Section 5.

2. Lines 113-115 (Page 4), the description for the findings of Lin et al. (2015, Nature Communications) is not quite accurate. You stated "Lin et al. (2015) had found that more frequent deep stratospheric intrusions appear during ENSO springs". By "ENSO springs", it is not clear which phase of the ENSO. Please change that to "during strong La Niña springs".

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