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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Drivers of the tropospheric ozone budget throughout the 21st century under the medium-high climate scenario RCP 6.0" *by* L. E. Revell et al.

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Lin et al (2014, Nature Geoscience) demonstrated the important role of decadal climate variability and related circulation changes on tropospheric ozone variability over the subtropical Pacific. Please consider citing Lin et al and discuss their findings in your literature review of various drivers of tropospheric ozone (Introduction). Please also discuss the extent to which changes in atmospheric circulation in the 21st century under RCP6 affect tropospheric ozone?

Lin, M., 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.

Regarding the stratosphere-to-troposphere exchange, you might also want to cite the following papers:

Hegglin, M. I. & Shepherd, T. G. Large climate-induced changes in ultraviolet index and stratosphere-to-troposphere ozone flux. Nature Geoscience 2, 687-691 (2009).

Zeng, G., Morgenstern, O., Braesicke, P. & Pyle, J. A. Impact of stratospheric ozone recovery on tropospheric ozone and its budget. Geophysical Research Letters 37, L09805 (2010).

Lin M., A. M. Fiore , O. R. Cooper , L. W. Horowitz , A. O. Langford , Hiram Levy II , B. J. Johnson , V. Naik , S. J. Oltmans , C. Senff (2012): Springtime high surface ozone events over the western United States: Quantifying the role of stratospheric intrusions, Journal of Geophysical Research, 117, D00V22, doi:10.1029/2012JD018151

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 481, 2015.