

# ***Interactive comment on “A climatological view of the vertical stratification of RH, O<sub>3</sub> and CO within the PBL and at the interface with free troposphere as seen by IAGOS aircraft and ozonesondes at northern mid-latitudes over 1994–2016” by Hervé Petetin et al.***

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Introduction and literature review:

There are studies showing that high-resolution chemistry-climate models with interactive stratospheric and tropospheric chemistry capture the observed layered structure (stratification) of ozone vertical profiles in the free troposphere and at the interface with the PBL. For example, see Figures 3, 5 and 7 in Lin et al. (2012) and Supplementary

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Figures 1 and 2 in Lin et al. (2015).

Lin, Meiyun, 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

Lin, Meiyun, A.M. Fiore, L.W. Horowitz, A.O. Langford, S. J. Oltmans, D. Tarasick, H.E. Reider (2015): Climate variability modulates western US ozone air quality in spring via deep stratospheric intrusions, *Nature Communications*, 6, 7105, doi:10.1038/ncomms8105

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Interactive comment on *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2018-302>, 2018.

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