Atmos. Chem. Phys. Discuss.,
doi:10.5194/acp-2016-70-RC2, 2016

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Tropospheric Ozone Seasonal and Long-term Variability as seen by lidar and surface measurements at the JPL-Table Mountain Facility, California" *by* M. J. Granados-Muñoz and T. Leblanc

M. J. Newchurch (Referee)

mike@nsstc.uah.edu

Received and published: 2 May 2016

General Comments: This paper is a very useful contribution to the rather limited literature of the vertical distribution of ozone over the USA west coast. The analytical techniques employing trajectory analysis, stratospheric-tropospheric folding dynamical structures, time series and variability analysis, and attribution analysis all contribute to the value of this work. The major shortcomings concern the choices for trajectory/attribution parameters (primarily time scales) and the absence of a concise conclusion section. Minor shortcomings concern the details of the trend analysis and some

Printer-friendly version

Discussion paper

inconsistencies in the attribution. This paper should be accepted after these issues are successfully addressed.

Specific Comments: L36: 'No outstanding influence from Asia was identified'. This absence of Asian influence is strongly dependent on the somewhat arbitrary selection of trajectory time-scale parameters. This conclusion is also somewhat inconsistent with the early spring maximum in figure 4. Consider additional analyses to resolve this discrepancy by providing compelling evidence to support your finding. L44: 'Tropospheric ozone can be directly emitted to the troposphere, ': Direct emissions (separate from STE injections) are a very small fraction of tropospheric ozone sources. Suggest you omit this sentence. L273: Removing data +/- 1 sd for a correlation calculation is not a legitimate approach. That process will remove approximately 1/3 of the data and will certainly enhance the correlation between the remaining data, but one cannot justify removing that many data and one would certainly not call all those data 'outliers'. L296: Suggest you use p-values of 0.05 to be consistent with the 95% statistics used elsewhere. Section 4: The summary should be expressed in the Abstract. No need for another summary here. The more discussions should be moved to the section under discussion or a new section heading inserted. The paper needs a short 'Conclusions' section (not summary or discussion). The conclusions should be succinct and describe the main take-home points derived from the paper.

Technical corrections: See attached .docx for suggested tracked changes.

Please also note the supplement to this comment:
http://www.atmos-chem-phys-discuss.net/acp-2016-70/acp-2016-70-RC2-supplement.pdf

---

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-70, 2016.