

Comments by Rodrigo J. Seguel on behalf of the TOAR-II Steering Committee on:

**Surface ozone trend variability across the United States and the impact of heatwaves (1990-2023)**

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This review is by Rodrigo Seguel, member of the TOAR-II Steering Committee. The primary purpose of these reviews is to identify any discrepancies across the TOAR-II submissions, and to allow the author teams time to address the discrepancies. Additional comments may be included with the reviews.

While members of the TOAR Steering Committee may post open comments on papers submitted to the TOAR-II Community Special Issue, they are not involved with the decision to accept or reject a paper for publication, which is entirely handled by the journal's editorial team.

**General comments**

The authors provide a comprehensive trend assessment of surface ozone across the USA (1990-2023). The effectiveness of interventions, i.e., control emissions, was quantified on ozone trends using a changepoint detection algorithm. Also, the authors investigated the potential impacts of heatwave events on ozone exceedances. The methodology described in the manuscript and the rationale behind the statistical methods applied are clear and sound.

Overall, the results are consistent with other reports that showed decreasing ozone trends across the USA (stronger in the eastern USA since the 2000s), attributed to strict controls of anthropogenic emissions. In addition, the study shows the impact of heat waves on increasing ozone exceedance in California, thus counteracting the effectiveness of emission controls.

Therefore, this paper significantly contributes to the TOAR community's objective of reliably quantifying ozone trends and attribution.

**Minor comment**

In the paper, mixing ratios are reported in units of ppbv. However, in the TOAR phase II, we have adopted the units of  $\text{nmol mol}^{-1}$  instead of ppbv to express mixing ratios. In some cases, mainly related to human exposure, keeping the units of ppbv has been preferred to maintain consistency between the unit's metrics. Therefore, I suggest including a short explanation or clarification about the decision to use ppbv in this study.