

***Interactive comment on* “Statistical regularization for trend detection: An integrated approach for detecting long-term trends from sparse tropospheric ozone profiles” by Kai-Lan Chang et al.**

Anonymous Referee #2

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My initial impression and doubts remain. The paper is well written and presented, the discussion accurate although quite technical. Overall scopes are, in my opinion, quite narrow. I still see the manuscript better suited for a journal with a more specialised focus on the subject of statistical methods, or on measurements.

Anyhow, the subject covered here is explicitly mentioned in the ACP subject areas (https://www.atmospheric-chemistry-and-physics.net/about/subject_areas.html) and several references used by the authors confirm that other studies dealing with trend detection and tropospheric measurements have been published in ACP.

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Discussion paper



I therefore advice the editor to accept the manuscript for publication, and suggest the authors to simplify the discussion where possible, to reach out larger audience. Perhaps some technical material can be moved to appendix?

Moreover, what about comparing the result of your methodology with profiles treated with other methods mentioned by the authors in the introduction? this would help determine what is the cost-effectiveness with respect to benefits of your approach compared to simpler ones.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-959>, 2020.

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