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Interactive comment on "Spatial and seasonal variations of aerosols over China from two decades of multi-satellite observations. Part II: AOD time series for 1995–2017 combined from ATSR ADV and MODIS C6.1 for AOD tendencies estimation" *by* Larisa Sogacheva et al.

Anonymous Referee #2

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My main concerns with this paper is the small amount of detail included both on which precisely datasets were used but also on presenting the actual findings. Even though the authors recognise three distinct periods of AOD behaviour in their timeseries, an increase, a plateau and a decrease, they present a number of figures and tables with linear trends on the entire period, which is statistically incorrect. I suggest they re-think this finding accordingly.

Furthermore, the two datasets, [A]ATSR and MODIS have a clear bias which, although discussed, has not sufficiently been excluded as the reason for the three periods identified. The tendencies calculated appear to be of the same order of magnitude as this bias which leads to the thinking that the bias might be responsible. Consider deseasonalising the datasets before any further analysis is performed.

The constant reference to Part I is also rather tiring and I consider that a few lines of the findings of that Part would go greatly towards improving their comments.

The figures are not of optimal quality, I suggest increasing the pixel quality, and provide ACP with their *eps versions.

The topic is of high interest and merit but I find a number of changes will have to be made on the presentation of the datasets as well as of the findings.

Refer to the annotated document for further technical, wording as well as scientific comments.

Please also note the supplement to this comment:
https://www.atmos-chem-phys-discuss.net/acp-2018-288/acp-2018-288-RC1-supplement.pdf

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2018-288, 2018.