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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Aerosol optical depth trend over the Middle East" *by* K. Klingmüller et al.

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We thank Andrew Sayer for his most valuable comment on the MODIS AOD trend over the Aral Sea. Even though this region is not the main focus of this study, we agree that the corresponding results should not be mentioned without discussing the reliability of the retrievals over this specific terrain and scrutinising the resulting trend. We therefore propose the following additions to article and supplement:

PAGE 5, LINE 20

Amending

"Comparably strong trends are only found in China and, though restricted to a small area, under the exceptional conditions in the vicinity of the Aral Sea."

to

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Discussion paper

"Comparably strong trends are only found in China. Our analysis identifies even stronger trends over the Aral Sea region. However, the shrinking Aral Sea not only exposes new dust sources (Wiggs et al. 2003) but also implies a constantly changing surface reflectance making a consistent AOD retrieval over this region extremely challenging and likely contributing a large spurious component to the MODIS trend (Sayer 2016, see also the discussion in the supplement)."

CAPTION FIGURE 1 (PAGE 22)

Amending

"Comparable trends are only found in China and, in a smaller area, near the Aral Sea. The exceptional trend in the latter region defines the upper limit of the colour scale."

to

"Comparable trends are only found in China. An exceptional trend over the Aral Sea region defines the upper limit of the colour scale, but is likely predominantly attributed to retrieval artefacts (see the discussion in the supplement)."

SUPPLEMENT

We propose to add the pages in the supplement of this comment to the supplement of the article.

BIBLIOGRAPHY

New items:

Wiggs, G. F. S., O'hara, S. L., Wegerdt, J., Van Der Meer, J., Small, I. And Hubbard, R. (2003), The dynamics and characteristics of aeolian dust in dryland Central Asia: possible impacts on human exposure and respiratory health in the Aral Sea basin. The Geographical Journal, 169: 142–157. doi: 10.1111/1475-4959.04976

Sayer, A. M., personal communication, 2016, see also online discussion of Kling-

mueller et al. 2016

Please also note the supplement to this comment:
http://www.atmos-chem-phys-discuss.net/acp-2015-839/acp-2015-839-AC1-supplement.pdf

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