Atmos. Chem. Phys. Discuss., 14, C10202–C10208, 2014
www.atmos-chem-phys-discuss.net/14/C10202/2014/
© Author(s) 2014. This work is distributed under
the Creative Commons Attribute 3.0 License.

Atmospheric Chemistry and Physics Discussions

Interactive comment on "AOD trends during 2001–2010 from observations and model simulations" *by* A. Pozzer et al.

A. Pozzer et al.

andrea.pozzer@mpic.de

Received and published: 16 December 2014

We thank the Dr. Sayer for his comments.

Before to reply in detail to the comments, we have to add an additional information about the trends calculation, which was not mentioned in the manuscript. In the trends estimation algorithm, *no* trends were calculated for locations that had less than 6 data points per year between 2001 and 2010. This was done to avoid locations which contain only data in one period of the decade, to remove locations with not enough retrievals (suggesting difficult and not reliable observations) and finally to assure a balanced distribution of the data during all the temporal window we took in consideration. In Fig.2 of the manuscript the regions with too low data coverage to estimate a trend

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

are shaded with the gray color. We will add this important information in Sect.5.1 of the manuscript. Having this in mind, we discuss separately the two suggested dataset, MODIS and SeaWiFS.

MODIS

Indeed the MODIS Terra v5.1 was used in this study, for which also the DeepBlue algorithm is available. However, due the above mentioned screening method, we did not use the DeepBlue algorithm data from MODIS v5.1 as no data is available after the year 2008. Therefore, we do not think it will be reasonable to add the analysis with the DeepBlue data as these could be non representative for the decade, with multiple year missing. Nevertheless, we will indeed add the missing references Dr. Sayer mentioned, and we will rephrase lines 14-16 P2630, mentioning that the Deep Blue algorithm does allow retrievals over bright surfaces.

SeaWiFS

We thank further Dr. Sayer for pointing out that we used SeaWiFS version 3 instead of the version 4. As he mentioned, the largest changes in the two dataset version are located in “South America, central and southern Africa, and South-East Asia”. These locations, however, do not present an enough detailed (time) coverage and therefore are normally neglected in our calculations. Therefore no difference is expected between the two datasets. To confirm this, we have update our analysis and reproduced Fig.3 and 5 of the manuscript for both version 3 and version 4 of the dataset (see Fig.1-4, below).

It is clear that both datasets present very similar trends, and this confirms the results obtained in the study. We will update the figure and instrument description using the newer dataset, while the discussion won’t change in the revised version.

ACPD
14, C10202–C10208, 2014

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 26619, 2014.

ACPD

14, C10202–C10208, 2014

Interactive Comment

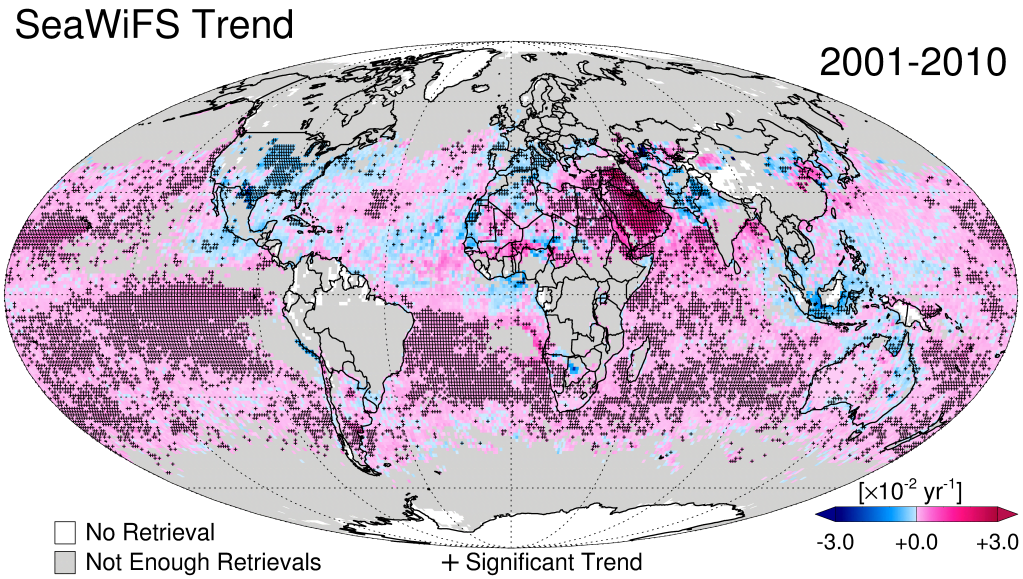

Fig. 1. AOD trends estimated from SeaWiFS level 3 data, version 3.

ACPD
14, C10202–C10208, 2014

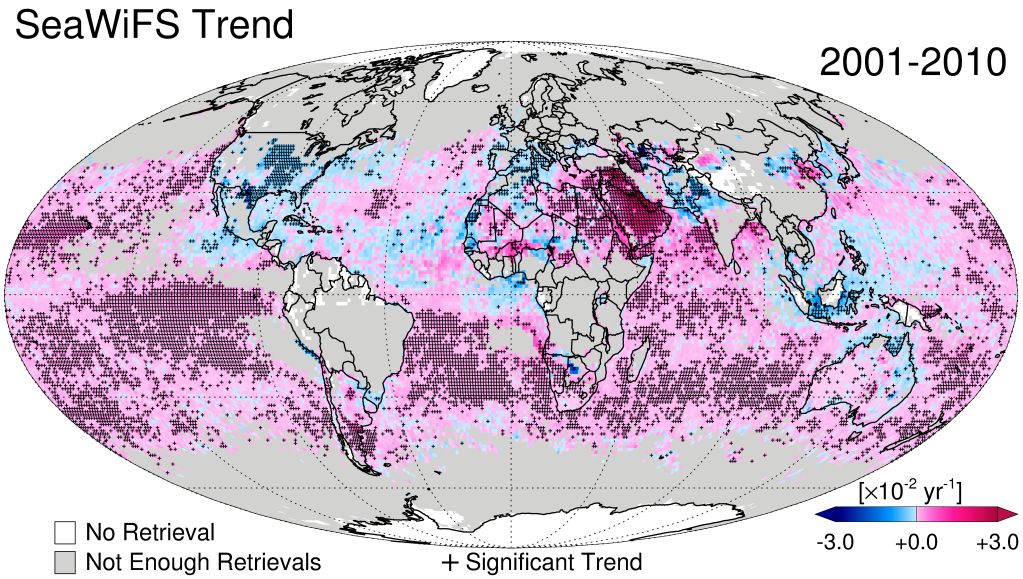

Fig. 2. AOD trends estimated from SeaWiFS level 3 data, version 4

ACPD
14, C10202–C10208, 2014

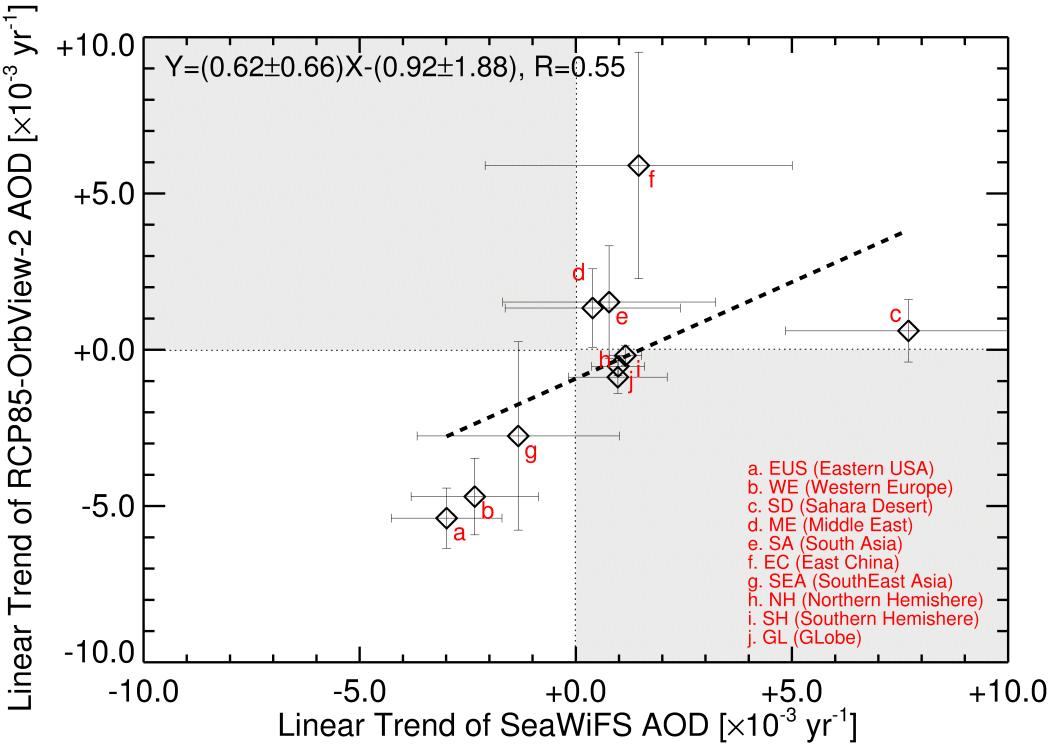

Fig. 3. Regional AOD trends estimated from SeaWiFS level 3 data, version 3 and simulation RCP85

ACPD
14, C10202–C10208, 2014

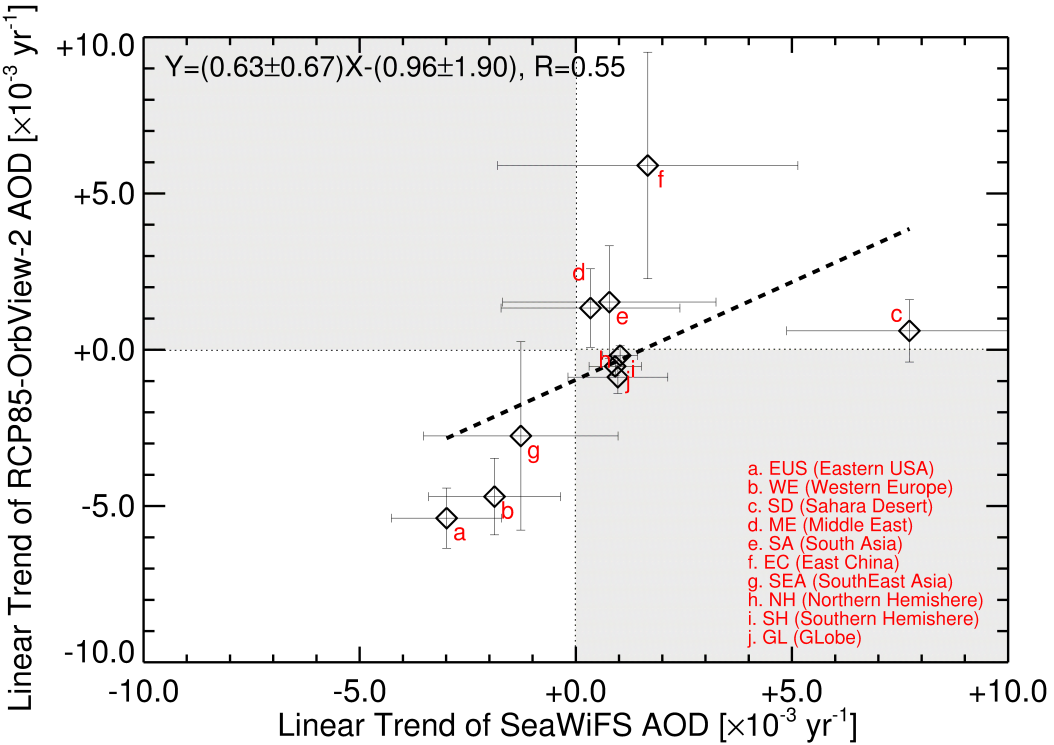

Fig. 4. Regional AOD trends estimated from SeaWiFS level 3 data, version 4 and simulation RCP85

ACPD
14, C10202–C10208, 2014