

The paper by Galytska et al. analyses in details the influence of the 2010 eastern Europe wildfires on the atmosphere of Ukraine. It combines both retro-trajectories modelling and different sets of remote-sensing observations.

This work is interesting and the analysis thorough but the manuscript in its present form need improvements.

The paper is very long and should be shortened and better focused (see specific comments below). For instance, the introduction written as it looks like a detailed summary of previous works on the subject rather than a presentation of scientific objectives. The authors should clearly state in the introduction the adding contribution of their study compared to previous works. Also, the analyse should include POLDER data that are well designed to track fine aerosols. Throughout the paper, the contribution of biomass burnings on the aerosol load over Ukraine is often discussed in a qualitative way. A more quantitative analysis could improve the quality of the paper : what is the ratio between transported biomass burning aerosols and locally-emitted particles during polluted days ? Is this ratio constant or variable according to meteorological situations ?

Specific comments and technical corrections :

- P2 : The largest numbers of these fires[...] and Kazakhstan : please add a reference
- P2 : The papers provided results → the papers providing results
- P3 : in the UV band Holben et al. (1998) : add parenthesis to the citation
- Section 2 : Please add a map highlighting the localization of Ukraine and the observational sites used in this study.
- P4 MODIS data : Why corrected MODIS AOD has much lower data than the collection 051 AOD for this specific region and period ?
- Section 3.1 : This section should include meteorological data mentioned in section 2.4.
- Table 2 : Milinevsky did not use AERONET data for the year 2014
- P7 : The highest content of aerosols over Kyiv was observed every year in spring (April-May) and late summer (July-August) : Could you explain why maximum pollution occur during these periods ? Is this the result of specific meteorological regimes ? Local emissions ? Absence of washout ?
- P8 : Coarse aerosol particles were mainly of local origin : which origin ? Please be more specific
- Section 3.2 : This section could be shortened. The main conclusions should be highlighted to improve the clarity of this section.
- P11 : Could you explain the influence of the multiple scattering effect on the retrieval of the SSA. This part is not clear.
- P15 : AE is often larger than 1 for fine biomass burning aerosols so the AOD bias between MODIS and CALIOP is potentially larger than 2-4 %.
- Figure 9 : Why 3 types of aerosol vertical profiles can be distinguished ? Is the result of different transport pathways ? Emissions processes ? Specific local meteorology ? Orography ?
- P19 : authors stated that satellite data has always lower accuracy : please explain
- P21 : Results on SSA presented in this study are contradictory to Chubarova et al. (2012) results. Please explain