Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2017-336-AC2, 2018

Atmospheric Measurement Techniques Discussions

Interactive comment on "Increased aerosols content in the atmosphere over Ukraine during summer 2010" *by* Evgenia Galytska et al.

Evgenia Galytska et al.

egalytska@iup.physik.uni-bremen.de

Received and published: 10 February 2018

The authors thank the Referee for his/her revision of our manuscript and helpful comments. We address the suggested improvements below in blue.

This paper analyses a number of sun-photometer and satellite observations, together with back-trajectory modelling, for a full analysis of the aerosol load over Ukraine and surrounding areas during the summer of 2010. It is shown that the high aerosol loads were generated by wild fires of exceptional intensity over central and western Russia.

This papers is very well presented. It is easy to read and the figures are of high quality. It goes onto the detail at each step. For instance, the authors use sun-photometer measurements to evaluate the satellite products, which is not the objective of the paper.

Printer-friendly version

Discussion paper

In addition, there are several statements that appear in the introduction, main body and conclusion of the paper. As a consequence, the paper is very long and not well focused.

Although I would have preferred a paper better focused on the analysis of the aerosol load and its origin, there is nothing wrong, and the paper offers a very thorough analysis of the atmospheric impact of the fires during the summer of 2010. It could be published as is.

We appreciate very much for the positive comments on our manuscript. We agree with the Referee that the content of the manuscript is too extensive in its original state. We have reworked and reorganized the manuscript to highlight its novelty, reduced its length by restructuring methodological paragraphs and better concentrating on main messages, and improved the language. Particularly, we have introduced the following changes:

- We have shortened the Abstract.
- All acronyms have been spelled out the first time used.
- We rewrote the Introduction and inserted a figure showing a map with AERONET observational sites in Eastern Europe and Ukraine, which were used in our study (Fig.1 in the reworked manuscript). We have also added to both the Abstract and Introduction the description of the term “summer” 2010, which comprises the time period June to August 2010.
- We have optimised the titles of Section 2 and 3 to better address the sections subject. In detail, we have renamed Section 2 from “Data sources “ to “Methods and data sources”. We aim to collect all relevant information about methods used in our study. In the original manuscript, respective information was partly spread over the different sections describing results of our study. The current form of

Section 2 allows the reader to better understand the core messages of our analysis and conclusions - statements that are now not mixed with the technical information. Section 2.4 has been renamed from “Meteorological data and the means of study of air masses transport in the investigated region” to “Weather conditions and transport of air masses”, now even more precisely state the purpose of the information provided there. In this respect, Section 3 has been renamed from “Methodology and results” to “Results and Discussion”.

- The majority of Figures and tables as well as their captions have also been reworked and improved (please, see the updated version of the manuscript).
- We have shortened Section 3 and reworked Section 4 by generally more focussing on our major findings and their interpretations.
- Language and Grammar have been proofread.