

Interactive comment on “Long-term profiling of mineral dust and pollution aerosol with multiwavelength polarization/Raman lidar at the Central Asian site of Dushanbe, Tajikistan: Case studies” by Julian Hofer et al.

Anonymous Referee #1

Received and published: 16 August 2017

This is a first report on monitoring dust and atmospheric aerosol in central using a Raman lidar (POLLYxt), a sunphotometer, atmospheric models and satellite data. The authors very well reviewed previous works in this region, explained the geographical location of the investigation area, and very clearly reported four case studies during 18 months of measurements. The cases have been chosen for different types of origins to show the impact of influencing dust sources on the selected region. I believe this is a valuable manuscript that is quite fit for publication in ACP. Just there are some minor points that the author may consider them and the manuscript even now is in proper

C1

form for publications. So there is no need that the manuscript would be reviewed again and after applying the following comments it will be well proper for publication.

1- In page 9 line 5, after the phrase “... maximum dust mass concentration of 196 μgm^{-3} ...” adding some reference to show that how the mass concentration can be extracted from the lidar signals is useful. 2- It is preferred to put labels (a, b, c, ...) on the sub-figures in figures 5, 7, and, 8 to address to the figure number and the label in the text, instead of addressing to their positions (top, left, ...) 3- In discussing case 3 on page 9 (14 July 2016), if a Hysplit back trajectory would be added to Fig. 7, this may help the reader to understand the case more clearly. 4- In page 10, line 31, inside the phrase “...second dust event the during...” the word “the” should be removed

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2017-559/acp-2017-559-RC1-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-559>, 2017.

C2