

Interactive comment on “Angular Scattering of the Sahara Dust Aerosol” by Helmuth Horvath et al.

Anonymous Referee #2

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The manuscript presents field measurements of the volume scattering function of various atmospheric aerosols including monitoring of several Saharan dust outbreaks over Europe. The measurements are performed at 532 nm spanning a scattering angle range from 5 to 175 degrees. The polar nephelometer is located at 2500 m high in the Sierra Nevada, Spain. The corresponding scattering coefficients are apparently simultaneously measured with a three wavelength integrating nephelometer. The results presented in the paper are of interest for the atmospheric community. However some missing information must be provided before publication. Short and concise papers are much appreciated but they should provide sufficient information so that they are fully understandable.

General comments

- The introduction is extremely short. It should at least include information (scope,

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instruments involved, locations, etc.) on the SLOPE campaign to which the measurements belong. Also some annual statistic of Sahara sand dust storm over southern Europe would be appreciated.

- Information and proper references are provided for the custom made polar nephelometer but no information at all is given for the (commercial?) integrating nephelometer. Please, include in section 3 (instruments and method) basic information for the integrating nephelometer. That would help in understanding e.g. the text in page 6, lines 5-10. How are BbsG and BsG defined ?

- As mentioned in the text the measurements are performed in a certain time period but not continuously. Please, provide a table with detailed information on the July 2016 Sierra Nevada campaign: instruments (nephelometer/integrating nephelometer), dates, sample time. It would also be interesting to combine the time table of the measurements with the information on the back trajectories from NOAA (current Table 1).

Section 4.

- Results: How are period 1, 2 and, 3 defined?

- According to Figure 4 it seems like simultaneous measurements with the integrating and polar nephelometer are obtained. However, in Figure 5 the measured integrated volume scattering functions are obtained in narrower time periods. Please, clarify.

Minor comments:

- Page 3, first paragraph, 2nd line: “alpha <-1” should be “alpha < 0”.

- Page 3, last paragraph, second line: “Using data given by given by” should be “given by”

- Page 5, line 29: “In figure 5..”do you mean in Figure 4?

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-464>,

2018.

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