

Interactive comment on “Spatial variation of aerosol optical properties around the high-alpine site Jungfraujoch (3580 m a.s.l.)” by P. Zieger et al.

Anonymous Referee #2

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General comments:

The authors have performed an interesting closure study of in-situ and remote sensing aerosol data during an intensive observation period in the Jungfraujoch site, supported by additional instrumentation deployed in a lower but very near site in the Alps. The study involved a considerable array of instruments, including wet and dry nephelometers, in situ size distribution counters, an aethalometer and other remote sensing instruments such as lidar, sun photometers and radiometers. The description of the instrumentation is well detailed. The results show a good correspondence within the involved uncertainties of experimental and modelling techniques. The data is put in context by using satellite data. The English usage is good. No important corrections to the current article are proposed.

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Some minor specific comments:

- Page 11113, line 22: The flow is checked at regular intervals. Could you be more specific about the interval chosen? - Page 11116, last sentence: Can you provide a reference describing the calibration procedure for the FUBISS instrument? Can you provide an estimation of the error obtained in the calibration method? - Page 11117, line 21: As before, please provide (if available) a reference describing the actual method for the retrieval (or cancellation) of the gas absorption effect. - Page 11120, line 22: Please provide a reference for the validation of SEVIRI AOD. - Page 11121, line 4: please indicate that the AOD uncertainty expression corresponds to Land products. - Page 11125: indicate why the first webcam image appears black (in the figure caption). - Page 11127, line 6: Although a comparison between AOD from FUBISS and LIDAR has been made through a linear fitting, I miss the absolute value of the AOD difference in absolute terms. - Page 11128, line 28: 08:00 a.m., please indicate it is UTC time to avoid any misunderstanding. - Page 11131, line 23: I think that Levy (2003) or Levy (2009) documents already state that the MODIS Ansgstrom exponent is in general rather uncertain. - Page 11133, line 22: "which is usually mounted on an airplane". I suggest removing this sentence. - Page 11134, line 5: Remove the Dubovik and King (2000) citation from the conclusions. - Figure 4, caption: "with a zenith" - Figure 8, plot: the magenta cross is hardly visible. - Figure 9, caption: I suggest including the reason for the aui gap (due to saturation).

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