

## ***Interactive comment on “Optical and microphysical characterization of aerosol layers over South Africa by means of multi-wavelength depolarization and Raman lidar measurements” by E. Giannakaki et al.***

**Anonymous Referee #3**

Received and published: 1 March 2016

I think the paper can be published after minor revisions.

Comments: Not sure that this fig.2 is really necessary. The plots are too small to see details and information from this figure is not used for analysis.

Fig.3 doesn't present much information. May be it is better just to show vertical profile of backscattering instead?

For backscattering calculation at 1064 Klett method was used. The lidar ratios in this work present strong variation, so the used values of lidar ratio at 1064 should be dis-

C12878

cussed.

p. 35248. Ln.17. “Model calculations show that a deviation from the spherical shape can efficiently increase particle backscattering. . .” I think this statement is wrong. Non-spherical particles have no peaking in backward direction so backscattering is lower.

Fig.8. Text is very small, difficult to read.

Table 2. Angstrom exponent for biomass burning is 1.7, while for the mixture of biomass burning and desert dust is 2.0. It is strange, because big dust particles should decrease EAE. Lidar ratios for mixture of biomass burning and desert dust at 355 and 532 nm differ more than twice. It should be discussed.

---

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 35237, 2015.

C12879