

Interactive comment on “Retrieval of the Eyjafjallajökull volcanic aerosol optical and microphysical properties from POLDER/PARASOL measurements” by F. Waquet et al.

Anonymous Referee #2

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The authors use a combination of a POLDER algorithm and a new research algorithm to investigate the optical and microphysical properties of a volcanic dust plume. The retrievals over cloudy pixels are especially interesting. This study is of a good enough quality to be published, and needs only minor revising. Some comments and corrections are listed below.

Comments:

1. Section 2.1.2 p. 8670 line 12

Why not use a Cox-Munk type of ocean surface model instead of a Lambertian surface? Would your results differ if you used a more realistic model of the ocean surface?

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2. Section 3.2.1 p. 8677 line 23 It would be helpful here to direct the reader to relevant literature on the signature of polarized radiance from cirrus clouds.

Corrections:

1. Introduction p. 8665 line 7: clouds needs an apostrophe after it (clouds') to indicate possession. The sentence may also be reworded something like this: “... and indirect influence on the microphysical properties and lifetime of clouds.” There are several examples throughout the manuscript (e.g. Introduction p 8665 line 21, Introduction p. 8666 line 13) of this error, and each one can be corrected with an apostrophe or by rewriting the sentence to make it clear.

2. Introduction p. 8666 line 16 Should be “high spectral resolution”
3. Introduction p. 8666 line 16 aerosol instead of aerosols
4. Introduction p 8667 line 11 looks at instead of gets onto
5. Section 3.1.1 p. 8673 line 9 detail instead of details
6. Section 3.1.2 p 8674 line 14 percent instead of percents
7. Section 3.1.2 p. 8675 line 15 delete the word exhibits
8. Section 3.1.2 p. 8675 line 17 delete the word present or the word show
9. Section 3.2.1 p. 8680 line 2 where instead of were
10. Section 3.2.2 p. 8679 line 25 masks instead of mask
11. Section 3.2.2 p. 8679 line 25
12. Section 4 Discussion p. 8682 line 13 detail instead of details
13. Section 4 discussion p. 8683 line 9 again state instead of remind