

Interactive comment on “Nadir lidar observations of aerosol layers” by F. Marengo

Anonymous Referee #2

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This is a concise, well written paper suggesting a new approach to retrieving aerosol properties from airborne nadir-viewing lidars. Although essentially an ‘engineering solution’ as it does not lend itself to automation, the method could squeeze a little more science out of a research aircraft flight and for that reason is worth publishing. I have only very minor comments on the paper and recommend that it be published in AMT when these are fixed.

p.4426 l.7 flight

p. 4228 l.12 the text suggests that well-mixed aerosol in the boundary layer should have uniform BR. This may be true for desert dust but not for pollution aerosol in a humid boundary layer where the particles swell as they ascend in the convective plumes.

p.4229 l.21 A little more explanation is required in this paragraph. It seems from the

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text that the values of alpha in 1g and 1h are used as initial values for the Fernald-Klett retrieval leading to 1i and 1j. But the intervals quoted (0.5 – 1.6 km and 0.6 – 1.2 km) show huge variability in 1g and 1h. I feel I am missing something here so some more explanation is required.

4244 the red symbols in panel 2c don't show up very well.

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 4223, 2013.

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