

Interactive comment on “Aerosol extinction to backscatter ratio derived from passive satellite measurements” by F.-M. Bréon

A. Ansmann

albert@tropos.de

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This is a nice paper on extinction-to-backscatter ratios derived from satellite observations and appropriate for ACP. The paper is useful for the lidar community. It shows in addition that lidar ratios are useful to describe different aerosol types.

However, it becomes obvious (to a lidar-ratio expert) that the author is not familiar with the lidar ratio literature and is also not just familiar with lidar techniques.

Page 2358, line 5: Burton et al. (2012) does not show Raman lidar observations. The paper deals with high spectral resolution lidar observations.

Page 2358, lowest paragraph: The discussion should include relevant lidar ratio papers. There are so many published by the EARLINET group (Amiridis, JGR, Mattis,

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JGR, Mona, JGR etc...). But one paper has clearly to be referenced: Mueller et al., JGR, 2007: aerosol-type-dependent lidar ratio. ...

Because lidar ratios around the coast of India are mentioned, please check Franke et al., GRL, 2001, JGR 2003, INDOEX Raman lidar observations of lidar ratio in the tropical Indian Ocean, they fit very well to your values.

Page 2359, top paragraph: Tesche et al., Tellus, 2009, 2011, unique pure Saharan dust lidar ratios are presented see also Gross et al. in Tellus 2011.

Page 2359, top paragraph: The discussion is misleading and wrong. The CALIPSO data processing bias is mostly caused by multiple scattering effects (Wandinger et al., GRL 2010, Tesche et al., JGR, 2013, paper in press). The irregular shape of dust particles is another issue, but not responsible for the systematic large bias, which can easily be explained by the ignored forward scattering of laser light (multiple scattering) in the CALIPSO data analysis.

Page 2361: final paragraph: Again many incorrect statements ... Raman lidar in various environments... This statement only fits to the paper of Mueller et al. (JGR 2007, aerosol-type-dependent lidar ratio).

All in all, the paper is fine, and when considering the mentioned literature it will be even better!!

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