

Interactive comment on “Microphysical characterization of long-range transported biomass burning particles from North America at three EARLINET stations” by Pablo Ortiz-Amezcuca et al.

Anonymous Referee #2

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General comment:

The paper discusses the microphysical properties of long-range transported biomass burning from N America within Europe, as determined from lidar measurements. The paper is in general clearly presented and the results properly discussed. The paper can be published after minor revisions.

Specific comments:

- pp 5, line 25 and fig 1; please define "smoke surface concentration"; is it PM?

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- fig 3; please comment/explain why Warsaw data are not from the same smoke episode as for Granada and Leipzig; no measurements available? it would have been preferable to analyze the same smoke (i.e. having the same origin in time and space); also, there were no data available in Leipzig at the time of measurements in Warsaw; I would expect the smoke be seen both in Leipzig and Warsaw; was it a Calipso overpass constraint?

- pp 11, line 10: please check LR for 532 for GR; according to Table 2, LR for GR should be ~ 37 (82/2.2).

- pp 15, after lines 21; please comment on large differences for IRI between lidars and sun-photometers retrievals; Aeronet retrievals show larger IRI for GR and WA ($\sim 90\%$ difference with lidars) and much smaller IRI for LE ($\sim 500\%$ difference wrt lidars); different IRI are clearly reflected in different SSA; also, there are large difference in the concentration values as calculated from lidar and retrieved from sunphotometer

- pp 17, line 4: concerning the similarity for the intensive properties in the smoke layers... it looks to me that there is a good similarity for effective radius and RRI but not for IRI; please reconsider

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-946, 2016.

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