

Interactive comment on “Synergetic monitoring of Saharan dust plumes and potential impact on surface: a case study of dust transport from Canary Islands to Iberian Peninsula” by C. Córdoba-Jabonero et al.

Anonymous Referee #1

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The paper is well written and presents the first effort of the SPALINET network to study Saharan dust events over the Iberian Peninsula.

General Comments

A general comment to this paper is that in specific parts the text should be improved, regarding the English language.

Specific Comments:

Abstract-page 27017

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Replace “relatively located close” by “located relatively close”. Replace “over both” by “both over” Replace “showed the Saharan origin of the dust intrusion” by “revealed the Saharan region as the dust source of the dust intrusion” Replace “Meteorological situation” by “Meteorological conditions” Replace “kept unchanged” by “kept nearly unchanged”

Main text

page 27018

After “Mediterranean areas” add citations (Dulac et al., 1992 ; Moulin et al., 1998; Papayannis et al., 2008).

New references to add:

Dulac, F., P. Buat-Ménard, D. Sutton, D. Tanré, G. Bergametti, and M. Debois (1992), Assessment of the African airborne dust mass over the Western Mediterranean Sea using Meteosat data, *J. Geophys. Res.*, 97, 2,489–2,506, doi:10.1029/91JD02427.

Moulin, C., et al. (1998), Satellite climatology of African dust transport in the Mediterranean atmosphere, *J. Geophys. Res.*, 103, 13,137–13,144, doi:10.1029/98JD00171.

page 27019

After “for that purpose” add references from Earlinet and Aeronet studies. Before and after “Dulac et al., 2009” add more references. Replace “Perez” by “Pérez” After “Papalardo et al., 2010” add “Mamouri et al., 2009”.

New reference to add:

Mamouri et al., Validation of CALIPSO space-borne-derived attenuated backscatter coefficient profiles using a ground-based lidar in Athens, Greece, *Atmos. Meas. Tech.*, 2, 513–522, 2009.

page 27024

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Replace “s/n” by “SNR”

page 27025

Replace “signal is registered in” by “signals are registered with” Replace “and with” by “and” Replace “the lidar ratio” by “the columnar integrated lidar ratio” Replace “the corresponding extinction” by “the guessed “extinction”” Replace “characterizing” by “characterize” “For conversion of. . .” This methodology adopted is not sufficiently supported. More explanations should be given by the authors, to explain why they adopt this.

page 27026

Replace throughout the text “Angstrom” by “Ångström”

page 27028

All heights should be given above mean sea level (amsl). End of section 3. I would never trust air mass trajectories below 1 km height (Above ground level). Therefore, 500 m above ground should be omitted.

page 27030

How the authors can support the criterion they have put ($AOD_{500} > 0.15$)?

page 27031

Replace “no-dusty” by “non-dusty” I would never provide “extinction profiles” with a vertically pointing elastic scattering lidar. Therefore, extinction profiles shown (e.g. Fig. 5,6,7) should be omitted. I would provide -instead- only aerosol backscatter profiles, with error bars.

page 27035

When CALIPSO data are referred, the authors should comment on the errors on the lidar ratio (LR) values used in the look-up Tables by CALIPSO.

page 27069 The difference between the LR values (of the different stations) compared

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to the AEWRONET derived ones is higher than 100%. The authors should comment on that.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 27015, 2010.

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