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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Estimation of mineral dust longwave radiative forcing: sensitivity study to particle properties and application to real cases over Barcelona" *by* M. Sicard et al.

Anonymous Referee #2

Received and published: 22 April 2014

The paper presents long-wave radiative effects of mineral dust aerosols observed over Barcelona for selected cases.

I would like to provide my comments/corrections:

1) I completely agree with the 1st reviewer (Dr. Otto) as he points out in page 8535, lines 6-11: "I think the opposite is the case: The most crucial point for aerosol radiative transfer calculations is the complex refractive index. In particular, for dust such data are mainly given in the thermal spectral range as Otto et al. (2009, 2011) explicitly point out.". Please re-arrange your text accordingly. 2) p. 8534 (line 20,22). The

term "opposite sign" is obscure in this context. Please re-phrase to provide your idea more clearly. 3) p. 8535, l.28, replace "those' by "these". 4) p. 8536, l. 2, replace "development" by "data set"; l. 6, replace "properties' by "physical"; l. 7, replace "aerosol layer" by " geometrical". 5) p. 8540, l. 24, replace "the ground and 100 km" by "ground and 100 km height". 6) p. 8545, l. 29, replace "Those" by "These". 7) p. 8546, l. 20, the "omega zero" is not defined? 8) p. 8551, l. 15, replace "AOT" by "in terms of AOT" 9) P. 8552, L. 21, REPLACE " AND" BY "WHILE"

GENERAL COMMENTS:

Please correct your references according to ACP format (e.g the Journal names should be given in abbreviation, p. 8556, l. 8-9, "J. Clim. Meteor."

Provide citations from SAMUM I, II campaigns regarding radiative forcing of dust particles.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 8533, 2014.