

Review :

The paper is now better organized and much more clear. They are still some minor comments I have listed below before the manuscript should be accepted for final publication.

- P10|18-19: *“The AOD at 8.6  $\mu\text{m}$  is calculated from the MFRSR AOD at 500 nm and the ratio between the extinction coefficient at 8.6  $\mu\text{m}$  and 500 nm obtained from the Mie calculations “* : how is obtained the extinction coefficient at 500 nm since the refractive indices of DB2017 are given only in the 2-16  $\mu\text{m}$  interval?
- P1425: *“The agreement is good for both downward and upward LW irradiances with the AERONET SD, and is best with COL1 and COL2 (RMSD of both components 4.1 W m<sup>-2</sup>). “* : I don't understand why COL3 is not the best? The RMSD of both components is lower than 4 W m<sup>-2</sup>
- P14 21-25: for my opinion, this paragraph should be placed either in the previous paragraph where irradiance results are analysed or in the section 4.4 where the configurations used for the radiative forcing estimation are defined.
- P20|12: *“the scope of simulating the IASI measurements in this work is to show that TOA BTs are sensitive to the dust occurrence and to its AOPs”*: since results are important but not new, see for example 2 references given below : Capelle et al., 2014 and Vandebussche et al., 2013.
- Fig. 4: The AERONET size distribution for 22 June appears to present 3 modes and not 2 and therefore doesn't correspond to values given in Table S1
- Table S1 : Where come from the size distribution parameters for AERONET since they didn't apparently come from the AERONET website (where only two modes are retrieved).

Capelle, V., Chédin, A., Siméon, M., Tsamalis, C., Pierangelo, C., Pondrom, M., Crevoisier, C., Crepeau, L. and Scott, N. A.: Evaluation of IASI-derived dust aerosol characteristics over the tropical belt, *Atmos. Chem. Phys.*, 14(17), 9343–9362, doi:10.5194/acp-14-9343-2014, 2014.

Vandebussche, S., Kochenova, S., Vandaele, A. C., Kumps, N. and De Mazière, M.: Retrieval of desert dust aerosol vertical profiles from IASI measurements in the TIR atmospheric window, *Atmos. Meas. Tech.*, 6, 2577–2591, doi:10.5194/amt-6-2577-2013, 2013.