

Interactive comment on “Aerosol radiative effect during the summer 2019 heatwave produced partly by an inter-continental Saharan dust outbreak. 1. Shortwave dust-induced direct impact” by Carmen Córdoba-Jabonero et al.

Anonymous Referee #1

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Overall this paper contains very interesting work and demonstrates a useful way to use AeroNet and MPLNET measurements to study dust pathways. As with any data analysis, the uncertainty in the data and the results are important for the evaluation of the work and for comparison with other modeling efforts. While summary results are presented in the abstract, some indication of the uncertainty in the results should be presented. Uncertainties start to be presented on line 276, the daily-averaged ML of 0.66 ± 0.42 g m⁻² on 24J (24th of June) at BCN is provided. However, this is no discussion of the uncertainty and the level of confidence in the uncertainty. The paper

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lacks a discussion of the uncertainties and how they are obtained. Figure 7 shows different fits to the data. What is the uncertainty in the data? Again this figure calls out for the uncertainty in the results and the data. While the data uncertainties may be small, they should be stated. With an uncertainty shown, one can better compare the fits to the data. Some spread in the data points and the fit to the data points is shown in Figure 9. It would be helpful to provide the uncertainty to the fits and clearly state the nature of this uncertainty (i.e. is it a standard deviation, a U95 level of uncertainty. How was it obtained?) The data points in the plot should also have information about their uncertainty. The analysis of the information is well done and shows a meaningful understanding of the data. A minimal amount of uncertainty information is presented without a clear discussion of the significance of the uncertainty and how it was obtained. To better convey the usefulness and accuracy of the methodology a discussion of the uncertainties is required.

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C2