

# ***Interactive comment on “Spatiotemporal variability and contribution of different aerosol types to the Aerosol Optical Depth over the Eastern Mediterranean” by Aristeidis K. Georgoulas et al.***

## **Anonymous Referee #1**

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This study characterizes the spatiotemporal variability and relative contribution of different types of aerosols to the Aerosol Optical Depth (AOD) over the Eastern Mediterranean as derived from MODIS satellite data. I agree this paper published in ACP just with some minor revisions. 1. Line 1, Page 2: AERONET provide the full name. 2. Line 3, Page 3: “Lelieveld et al., 2002, Giorgi, 2006” Should be “Lelieveld et al., 2002; Giorgi, 2006).” 3. Line 7, Page 3: Please add some references for the sentence “The Mediterranean is also recognized as a crossroads between three continents where aerosols of various types accumulate”. 4. Line 1, Page 4: The references format should be unified, for example: “Gkikas et al., 2013; 2014;” should be “Gkikas et al., 2013, 2014”.

etc. Please revise all similar reference formats through the full text. 5. Line 7, Page 7: “AE440-870” should be “AE440-870”. 6. Line 11, Page 8: “resolution of 10 x 1.25o “: Please add the note which is latitude? Which is longitude? 7. Line 32, Page 8: What is the resolution of wind speed data at 10 m above surface from ERA-Interim reanalysis used in your paper? 8. Why have the years after 2012 been excluded? 9. AERONET AOD550 is how calculated? 10. Line 12-13, Page 21: Please add some references for the sentence “Over the ocean, a profound maximum is observed in spring which is due to the well documented transport of significant amounts of dust from the Sahara Desert extending across the North African coast and the ocean.” 11. Line 3, Page 25: “from 49 % in SON to 50 %” should be “from 49 % in SON to 55 %”. 12. Figure 6d: AOD550 at NAL region in spring is bigger than it in summer. Why? 13. The conclusion is a very long summary, whether can be shorten appropriately? 14. Whether to consider joining the back trajectory model to track the source of dust?

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