Response to referees on "Long-term multi-source data analysis about the characteristics of aerosol optical properties and types over Australia" by Xingchuan Yang et al.

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We would like to thank the editor for carefully reading the manuscript and providing valuable suggestions to improve our manuscript quality. We have addressed them in the revised manuscript, which includes additional investigations. For clarity, the comments below are in black and our responses are in blue.

## **Comments from the editor:**

- My comment for the paper before publication is that the paper is a bit too long with 21 figures. Some figures (e.g., Fig 8 for precipitation) can be put in the supplement, and only leave the most essential figures and results in the main text. We appreciate this valuable comment. We have reduced the number of figures in the previous manuscript from 21 to 17 in the revised manuscript. The main changes are as follows.
  - (1) We put Figure 8 of Section 3.1.2 in the supplement as Fig. S2.
  - (2) We put Figure 18 of Section 3.3 in the supplement as Fig. S7.
  - (3) We merged Figures 19, 20 and 21 from the original manuscript into one figure, and put in the main text as Figure 17 in the revised manuscript.

We also made corresponding changes in the main text according to the serial number of the figures.

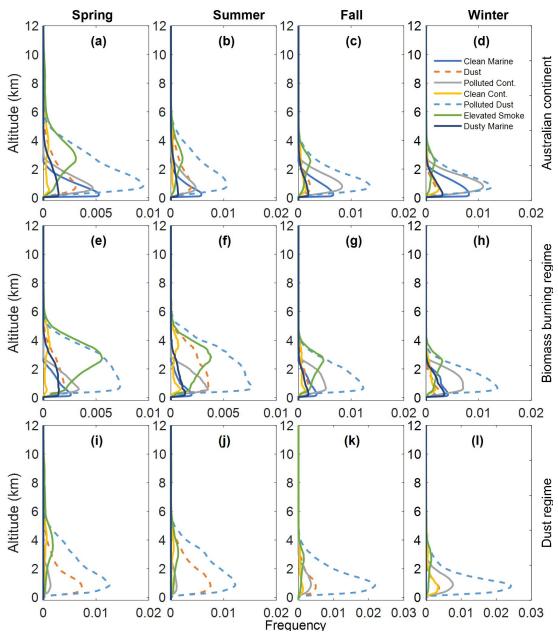


Figure 17. Occurrence frequency profile of each aerosol type in four seasons from 15-year CALIPSO L3 aerosol profile data product in Australian continent (a-d), the biomass burning regime (e-h), and the desert regime (i-l).