

Atmos. Chem. Phys. Discuss., referee comment RC1  
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## Comment on acp-2021-980

Anonymous Referee #1

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Referee comment on "Pollen observations at four EARLINET stations during the ACTRIS-COVID-19 campaign" by Xiaoxia Shang et al., Atmos. Chem. Phys. Discuss.,  
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Title : Pollen observations at four EARLINET stations during the ACTRISCOVID-19  
campaignMS No.: acp-2021-980

### Comments:

This paper presents a method to classify pollen types and determine the degree of mixing with other aerosols using the lidar-derived depolarization ratio and the backscattering coefficient at two wavelengths. Although there is a prerequisite that there should be no dust particles that can increase the depolarization ratio, it is judged that it is meaningful in that it is presented as a method to understand the distribution, type, and mixing degree of pollen in the atmosphere. Therefore, it is judged that this paper can be published in the relevant journal. However, it would be better if the following contents were corrected or added before posting.

### Minor Comments

- Line 53 : "ACTRIS-COVID-19" It is explained in section 2.1, but I would like the explanation of the abbreviation to come first.
- Line 193 : "the retrieved BSC at 532 nm and 355 nm should be larger than 0.05 and 0.1 Mm<sup>-1</sup> sr<sup>-1</sup>, respectively." It's had better to explain why you use those two values.
- Line 223: "the overlap of the lidar instrument," It would be nice to indicate how far the affected altitude is.

- Line 311 : “NMMB/BSC-Dust model” The text keeps referring to the results of the model, but not showing the model results. How about showing the model results for the time period used in the study as an appendix?