Atmospheric Measurement Techniques Discussions

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Comment on amt-2021-80

Anonymous Referee #1

Referee comment on "Mie–Raman–fluorescence lidar observations of aerosols during pollen season in the north of France" by Igor Veselovskii et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2021-80-RC1, 2021

This paper conducted research on pollen using the latest Lidar technology. Pollen is one of the major aerosols and is a particle that causes many health problems and is not easily measured. In particular, it is difficult to determine the distribution in the atmosphere. For this reason, observation using lidar is being performed, but studies using depolarization ratio, which can observe non-spherical features of pollen, have been mainly conducted. However, this paper confirms more information by measuring fluorescence at 466 nm with depolarization ratio. The thesis is judged to be well-written and there are no special modifications.
However, some technical corrections are required.

Technical comments;

- In the figures, each parameter is separated by color only, but in some cases it is difficult to distinguish each parameter. It would be nice to modify the picture to make it easier to check.
- The classification of aerosol types was explained in 4.4. In Fig. 14, dust, continental, and smoke were classified only by the relationship between particle depolarization ratio and fluorescence capacity. In addition to these two factors, it would be good to add a table that summarizes lidar ratio, EAE, and BAE and displays the average value for each type.